



130 W Cochran St, Unit B  
Simi Valley, CA 93065  
Tel:818-701-4933

## Process Change Notification (PCN)

|                                           |                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Notification number:</b>               | <b>091225- 1</b>                                                                                                                                                                                                                                                                                                                                 |
| <b>Notification date:</b>                 | <b>12 Sep 2025</b>                                                                                                                                                                                                                                                                                                                               |
| <b>Proposed implementation date:</b>      | <b>12 Dec 2025</b> (90 days notification before change, according to JEDEC standard)                                                                                                                                                                                                                                                             |
| <b>Product Type Affected:</b>             | Please refer to below Appendix                                                                                                                                                                                                                                                                                                                   |
| <b>Change Category</b>                    | Additional new A/T 2 <sup>nd</sup> source                                                                                                                                                                                                                                                                                                        |
| <b>Change Classification</b>              | Major                                                                                                                                                                                                                                                                                                                                            |
| <b>Change description:</b>                | To ensure the ability to continue business operation, it has determined with 2nd A/T source (Dual) in case of unforeseen event interruption. Remark: Full electrical characterization and high reliability testing has been completed to ensure there is no change to device functionality or static electrical specifications in the datasheet. |
| <b>Reason for change:</b>                 | To support increasing market demand and supply continuity.                                                                                                                                                                                                                                                                                       |
| <b>Deposition of old product</b>          | Existing inventory will ship until depleted.                                                                                                                                                                                                                                                                                                     |
| <b>Identification of Changed product:</b> | Identify the change based on Lot NO & DC of label.                                                                                                                                                                                                                                                                                               |
| <b>Contact person:</b>                    | Please contact your respective Account manager (AM) / Inside sales representative (ISR/CSR) if you have further query.                                                                                                                                                                                                                           |
| <b>Approved by:</b>                       | TH Koay (Director of Product)<br>Steve Zhang (Director of Supply Chain)<br>Seaman Wu (Director of Quality)<br>Pamela Cheng (GM & EVP of Sales)                                                                                                                                                                                                   |



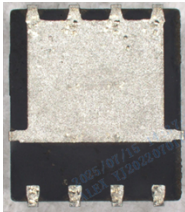
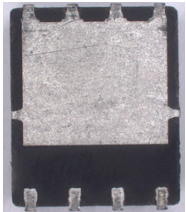
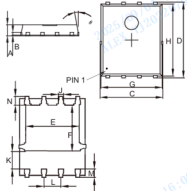
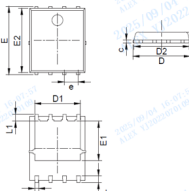
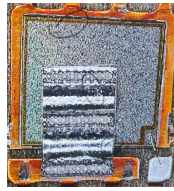
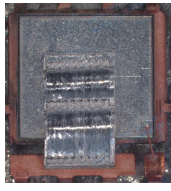
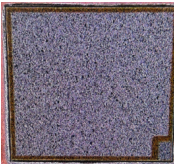
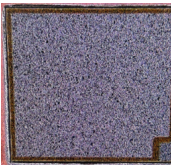
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## Appendix 1: Affect Part Number

| No. | Product type    | Package |
|-----|-----------------|---------|
| 1   | MCAC3D4N10YH-TP | DFN5060 |

Table1: Old&New Source Comparison

| Part No                 | Item                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Before                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | After                                                                               |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------|------------|--------|------------|-------|--------|-----|-----|----------|------|------|------|----------|---------------|------|------|----------|---|------|------|--------|------|------|----|---------|--------------------------|------|------|---------|---|------|------|------------|------|------|------|--------|------|----|------|-------------|-------------------------------|------|------|--------|------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--|------|------|------------|-----------------------|-------|------|-----|---|------|------|---|------|------|---|------|------|---|------|------|----|------|------|----|------|------|----|------|------|----|------|------|---|----|--|---|------|------|---|--|------|---|------|------|----|------|------|
| MCAC3D4N10YH-TP         | Appearance -Back                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
|                         | POD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <div><table><tr><th colspan="3">Old (DFN5060)</th></tr><tr><th>Item</th><th colspan="2">MILLIMETER</th></tr><tr><th></th><th>MIN</th><th>MAX</th></tr><tr><td>A</td><td>0.80</td><td>1.20</td></tr><tr><td>B</td><td></td><td>0.254</td></tr><tr><td>C</td><td>4.90</td><td>5.64</td></tr><tr><td>D</td><td>5.90</td><td>6.35</td></tr><tr><td>E</td><td>3.75</td><td>4.25</td></tr><tr><td>F</td><td>3.20</td><td>3.92</td></tr><tr><td>G</td><td>4.80</td><td>5.40</td></tr><tr><td>H</td><td>5.65</td><td>6.06</td></tr><tr><td>K</td><td>1.15</td><td>1.50</td></tr><tr><td>J</td><td>0.30</td><td>0.50</td></tr><tr><td>L</td><td>1.17</td><td>1.37</td></tr><tr><td>M</td><td>0.30</td><td>0.71</td></tr><tr><td>N</td><td>0.40</td><td>0.71</td></tr></table></div> | Old (DFN5060)                                                                       |           |            | Item   | MILLIMETER |       |        | MIN | MAX | A        | 0.80 | 1.20 | B    |          | 0.254         | C    | 4.90 | 5.64     | D | 5.90 | 6.35 | E      | 3.75 | 4.25 | F  | 3.20    | 3.92                     | G    | 4.80 | 5.40    | H | 5.65 | 6.06 | K          | 1.15 | 1.50 | J    | 0.30   | 0.50 | L  | 1.17 | 1.37        | M                             | 0.30 | 0.71 | N      | 0.40 | 0.71 | <div><table><tr><th colspan="3">New(PDH5060-8A)</th></tr><tr><th>Item</th><th colspan="2">MILLIMETER</th></tr><tr><th></th><th>MIN</th><th>MAX</th></tr><tr><td>A</td><td>0.80</td><td>1.20</td></tr><tr><td>c</td><td>0.20</td><td>0.35</td></tr><tr><td>D</td><td>4.80</td><td>5.64</td></tr><tr><td>E</td><td>5.90</td><td>6.50</td></tr><tr><td>D1</td><td>3.60</td><td>4.30</td></tr><tr><td>E1</td><td>3.20</td><td>3.92</td></tr><tr><td>D2</td><td>4.65</td><td>5.40</td></tr><tr><td>E2</td><td>5.60</td><td>6.06</td></tr><tr><td>e</td><td colspan="2">NA</td></tr><tr><td>b</td><td>0.20</td><td>0.51</td></tr><tr><td>e</td><td></td><td>1.27</td></tr><tr><td>L</td><td>0.30</td><td>0.91</td></tr><tr><td>L1</td><td>0.40</td><td>0.93</td></tr></table></div> | New(PDH5060-8A) |  |      | Item | MILLIMETER |                       |       | MIN  | MAX | A | 0.80 | 1.20 | c | 0.20 | 0.35 | D | 4.80 | 5.64 | E | 5.90 | 6.50 | D1 | 3.60 | 4.30 | E1 | 3.20 | 3.92 | D2 | 4.65 | 5.40 | E2 | 5.60 | 6.06 | e | NA |  | b | 0.20 | 0.51 | e |  | 1.27 | L | 0.30 | 0.91 | L1 | 0.40 | 0.93 |
|                         | Old (DFN5060)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
|                         | Item                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | MILLIMETER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | MIN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | MAX                                                                                 |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| A                       | 0.80                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1.20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| B                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.254                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| C                       | 4.90                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 5.64                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| D                       | 5.90                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 6.35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| E                       | 3.75                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 4.25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| F                       | 3.20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 3.92                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| G                       | 4.80                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 5.40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| H                       | 5.65                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 6.06                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| K                       | 1.15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| J                       | 0.30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| L                       | 1.17                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1.37                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| M                       | 0.30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.71                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| N                       | 0.40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.71                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| New(PDH5060-8A)         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| Item                    | MILLIMETER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
|                         | MIN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | MAX                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| A                       | 0.80                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1.20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| c                       | 0.20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| D                       | 4.80                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 5.64                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| E                       | 5.90                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 6.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| D1                      | 3.60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 4.30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| E1                      | 3.20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 3.92                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| D2                      | 4.65                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 5.40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| E2                      | 5.60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 6.06                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| e                       | NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| b                       | 0.20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.51                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| e                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1.27                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| L                       | 0.30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.91                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| L1                      | 0.40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.93                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| Internal Structure      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| Die layout              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| Dynamic Characteristics | <table><tr><th>Parameter</th><th>Conditions</th><th>Before</th><th>After</th></tr><tr><td>Rg(Ω)</td><td>f=1MHz</td><td>2.1</td><td>2.1</td></tr><tr><td>Ciss(pF)</td><td></td><td>4738</td><td>4351</td></tr><tr><td>Coss(pF)</td><td>VGS=0,VDS=50V</td><td>1718</td><td>1791</td></tr><tr><td>Crss(pF)</td><td></td><td>23</td><td>28.2</td></tr><tr><td>Qg(nC)</td><td></td><td>66.9</td><td>65</td></tr><tr><td>Qgs(nC)</td><td>VDS=50V,ID=20A , VGS=10V</td><td>21.2</td><td>18.3</td></tr><tr><td>Qgd(nC)</td><td></td><td>13.5</td><td>13.6</td></tr><tr><td>Td(on)(ns)</td><td></td><td>22.4</td><td>20.3</td></tr><tr><td>Tr(ns)</td><td></td><td>28</td><td>27</td></tr><tr><td>Td(off)(ns)</td><td>VDD=50V, VGS=10V,RG=3Ω,ID=20A</td><td>48.6</td><td>50.2</td></tr><tr><td>Tf(ns)</td><td></td><td>25.4</td><td>29.4</td></tr><tr><td>Trr(ns)</td><td></td><td>69.4</td><td>58.8</td></tr><tr><td>Qrr(nC)</td><td>IF=20A, dI/dt=100A/us</td><td>125.6</td><td>82.3</td></tr></table> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                     | Parameter | Conditions | Before | After      | Rg(Ω) | f=1MHz | 2.1 | 2.1 | Ciss(pF) |      | 4738 | 4351 | Coss(pF) | VGS=0,VDS=50V | 1718 | 1791 | Crss(pF) |   | 23   | 28.2 | Qg(nC) |      | 66.9 | 65 | Qgs(nC) | VDS=50V,ID=20A , VGS=10V | 21.2 | 18.3 | Qgd(nC) |   | 13.5 | 13.6 | Td(on)(ns) |      | 22.4 | 20.3 | Tr(ns) |      | 28 | 27   | Td(off)(ns) | VDD=50V, VGS=10V,RG=3Ω,ID=20A | 48.6 | 50.2 | Tf(ns) |      | 25.4 | 29.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Trr(ns)         |  | 69.4 | 58.8 | Qrr(nC)    | IF=20A, dI/dt=100A/us | 125.6 | 82.3 |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| Parameter               | Conditions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Before                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | After                                                                               |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| Rg(Ω)                   | f=1MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 2.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 2.1                                                                                 |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| Ciss(pF)                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 4738                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 4351                                                                                |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| Coss(pF)                | VGS=0,VDS=50V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1718                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1791                                                                                |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| Crss(pF)                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 23                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 28.2                                                                                |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| Qg(nC)                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 66.9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 65                                                                                  |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| Qgs(nC)                 | VDS=50V,ID=20A , VGS=10V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 21.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 18.3                                                                                |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| Qgd(nC)                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 13.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 13.6                                                                                |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| Td(on)(ns)              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 22.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 20.3                                                                                |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| Tr(ns)                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 28                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 27                                                                                  |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| Td(off)(ns)             | VDD=50V, VGS=10V,RG=3Ω,ID=20A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 48.6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 50.2                                                                                |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| Tf(ns)                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 25.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 29.4                                                                                |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| Trr(ns)                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 69.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 58.8                                                                                |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |
| Qrr(nC)                 | IF=20A, dI/dt=100A/us                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 125.6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 82.3                                                                                |           |            |        |            |       |        |     |     |          |      |      |      |          |               |      |      |          |   |      |      |        |      |      |    |         |                          |      |      |         |   |      |      |            |      |      |      |        |      |    |      |             |                               |      |      |        |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |  |      |      |            |                       |       |      |     |   |      |      |   |      |      |   |      |      |   |      |      |    |      |      |    |      |      |    |      |      |    |      |      |   |    |  |   |      |      |   |  |      |   |      |      |    |      |      |



130 W Cochran St, Unit B  
Simi Valley, CA 93065  
Tel:818-701-4933

## Reliability Report

Part Number: MCAC3D4N10YH-TP

Date: 2025-06-12

Test Results : PASS

| Test Item                                                     | Conditions                                                                                                                                                                                                      | Duration                                     | Quantity  | Rejects   |
|---------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|-----------|-----------|
| <b>TEST</b><br>Pre- and Post-Stress<br>Electrical Test        | $T_a = 25\text{ }^{\circ}\text{C}$                                                                                                                                                                              | N/A                                          | all parts | see below |
| JESD22A-113                                                   |                                                                                                                                                                                                                 |                                              |           |           |
| * <b>Pre-conditioning for MSL 1</b>                           | 1.Temperature Cycling:-40 $^{\circ}\text{C}$ ~ 60 $^{\circ}\text{C}$ ,<br>2.Bake:125 $^{\circ}\text{C}$ ,<br>3.Moisture Soak:85 $^{\circ}\text{C}$ , 85%RH for MSL1;<br>4.Reflow*3Cycles:260 $^{\circ}\text{C}$ | 5Cycles;<br>24 hours;<br>168hours<br>3Cycles | 338Pcs    | 0         |
| <b>HTRB</b><br>High Temperature<br>Reverse Bias               | MIL-STD-750<br>Method 1038<br>$T_j = T_{jmax}$ , 80% VDS                                                                                                                                                        | 1000 hours                                   | 77Pcs     | 0         |
| <b>HTGB</b><br>High Temperature<br>Reverse Bias               | JESD22-A108<br>$T_j = T_{jmax}$ , 100% VGS                                                                                                                                                                      | 1000 hours                                   | 77Pcs     | 0         |
| <b>IOL</b><br>Intermittent<br>Operational Life                | MIL-STD-750<br>Method 1037<br>$\Delta T_j \geq 100\text{ }^{\circ}\text{C}$ , 2min ON/2min OFF                                                                                                                  | 15000Cycles                                  | 77Pcs     | 0         |
| <b>TC</b><br>Temperature Cycling                              | JESD22-A104<br>-55 $^{\circ}\text{C}$ (+0,-10)/15Min~<br>150(+15,-0)/15Min,                                                                                                                                     | 1000Cycles<br>(500hours)                     | 77Pcs     | 0         |
| <b>AC</b><br>Autoclave                                        | JESD22-A102<br>$T_a = 121\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ , RH =100%                                                                                                                     | 96 hours                                     | 77Pcs     | 0         |
| <b>HAST</b><br>High Humidity High<br>Temperature Reverse Bias | 130 $\pm 2\text{ }^{\circ}\text{C}$ , 8 5% $\pm 5\%$ RH,<br>80%Vds (Max=42V)                                                                                                                                    | 96 hours                                     | 77 Pcs    | 0         |
| <b>RSH</b><br>Resistance to Solder Heat                       | JESD22-B106<br>260 $^{\circ}\text{C}$ (+5 , -0)                                                                                                                                                                 | 10 s                                         | 30Pcs     | 0         |
| <b>SD</b><br>Solderability                                    | J-STD-002<br>245 $^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$                                                                                                                                               | 5 s                                          | 10Pcs     | 0         |

Remark : detail MSL of product refer to data sheet on MCC website.



130 W Cochran St, Unit B

Simi Valley, CA 93065

Tel:818-701-4933

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Date: 12 Sep 2025

PCN #: 091225-1

PCN Title: Additional new A/T 2<sup>nd</sup> source

Dear Customer.

This is a PCN announcement to the above-mentioned product which is/are offered by Micro Commercial Components Corp (MCC). We would appreciate your acknowledgement of receipt of this notification within 30 days of the date of this PCN to your local ISR, sales representative. Please refer to the attached document for more information (including implementation date / product date code of this change). If you have any questions or concerns related to this PCN, please contact your local sales representative / ISR for support. *Sincerely, MCC PCN Team*

Thank you.

Yours sincerely,

PCN Team