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Date: Apr 04, 2023

PCN No#: 040423-1

PCN Title: Qualified Additional Wafer Source for MURB10120C-TP

Dear Customer:

This is an announcement of change(s) to products that are currently being offered by Micro Commercial Components Corp(MCC) .We request that you acknowledge receipt of this notification within 30 days of the date of this PCN. Please refer to the implementation date of this change as it is stated in the attached PCN form. Please contact your local sales representative to acknowledge receipt of this PCN.

If you have any questions about PCN's products, please contact your local sales representative.

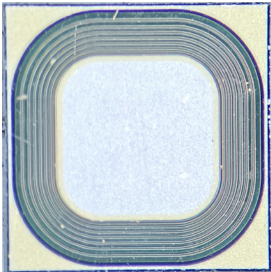
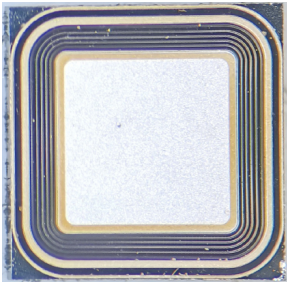
Sincerely,

MCC PCN Team

## PRODUCT CHANGE NOTICE

| Notification Date                                                                                                                                                                                                                                                                                                             | Implementation Date                                                                                           | Change Type             | Classification | PCN No   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-------------------------|----------------|----------|
| Apr 04, 2023                                                                                                                                                                                                                                                                                                                  | Jul 04, 2023                                                                                                  | Additional Wafer Source | Major          | 040423-1 |
| TITLE                                                                                                                                                                                                                                                                                                                         |                                                                                                               |                         |                |          |
| Qualification of Additional Wafer Source for MURB10120C-TP                                                                                                                                                                                                                                                                    |                                                                                                               |                         |                |          |
| DESCRIPTION OF CHANGE                                                                                                                                                                                                                                                                                                         |                                                                                                               |                         |                |          |
| This PCN is being issued to notify customers that in order to assure continuity of supply, MCC has qualified a new wafer source for MURB10120C-TP. Full electrical characterization and reliability testing has been completed and the result showed that the parts had the same performances as the parts we shipped before. |                                                                                                               |                         |                |          |
| IMPACT                                                                                                                                                                                                                                                                                                                        |                                                                                                               |                         |                |          |
| No change in datasheet electrical parameters and product performance.<br>Table A: Comparison of Die<br>Table B: Comparison of Test Data                                                                                                                                                                                       |                                                                                                               |                         |                |          |
| PRODUCTS AFFECTED                                                                                                                                                                                                                                                                                                             |                                                                                                               |                         |                |          |
| MURB10120C-TP                                                                                                                                                                                                                                                                                                                 |                                                                                                               |                         |                |          |
| WEB LINKS                                                                                                                                                                                                                                                                                                                     |                                                                                                               |                         |                |          |
| Terms And Conditions:                                                                                                                                                                                                                                                                                                         | <a href="https://www.mccsemi.com/Home/TermsAndConditions">https://www.mccsemi.com/Home/TermsAndConditions</a> |                         |                |          |
| For More Information Contact:                                                                                                                                                                                                                                                                                                 | <a href="https://www.mccsemi.com/Contact/Index">https://www.mccsemi.com/Contact/Index</a>                     |                         |                |          |
| Products:                                                                                                                                                                                                                                                                                                                     | <a href="https://www.mccsemi.com/ProductCategories">https://www.mccsemi.com/ProductCategories</a>             |                         |                |          |
| DISCLAIMER                                                                                                                                                                                                                                                                                                                    |                                                                                                               |                         |                |          |
| Unless a MCC Sales representative is contacted in writing within 30 days of the posting of this notice, all changes described in this announcement are considered approved.                                                                                                                                                   |                                                                                                               |                         |                |          |

**Table A - Comparison of Die**

|                | Current Die                                                                         | New Die                                                                              |
|----------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Die Appearance |  |  |
| Die Size       | 98mil*98mil                                                                         | 102mil*102mil                                                                        |

**Table B - Comparison of Test Data**

**Micro Commercial Components Corp.**

**Comparison of test data - MURB10120C-TP**

TEST DATA AS BELOW:

S.S.=50pcs

| SAMPLE | Current Die Test Data |                   |                 |             | New Die Test Data |                   |                 |             |
|--------|-----------------------|-------------------|-----------------|-------------|-------------------|-------------------|-----------------|-------------|
|        | VF(V)                 | VR(V)             | IR(uA)          | ttr(ns)     | VF(V)             | VR(V)             | IR(uA)          | ttr(ns)     |
|        | @ IF=10A<2.4V         | @ IR=0.01mA>1200V | @ VR=1200V<10uA | @ RG-1<75ns | @ IF=10A<2.4V     | @ IR=0.01mA>1200V | @ VR=1200V<10uA | @ RG-1<75ns |
| 1      | 1.911                 | 1237.8            | 0.030           | 47          | 1.940             | 1340.8            | 0.025           | 44          |
| 2      | 1.908                 | 1244.5            | 0.033           | 47          | 1.876             | 1340.2            | 0.030           | 44          |
| 3      | 1.911                 | 1237.8            | 0.034           | 47          | 1.898             | 1333.5            | 0.039           | 44          |
| 4      | 1.910                 | 1237.8            | 0.025           | 47          | 1.965             | 1334.7            | 0.030           | 44          |
| 5      | 1.909                 | 1238.1            | 0.029           | 47          | 1.891             | 1333.5            | 0.030           | 44          |
| 6      | 1.914                 | 1236.6            | 0.024           | 47          | 1.794             | 1333.5            | 0.025           | 44          |
| 7      | 1.929                 | 1235.6            | 0.026           | 47          | 1.836             | 1330.8            | 0.026           | 44          |
| 8      | 1.926                 | 1238.7            | 0.026           | 47          | 1.858             | 1330.5            | 0.035           | 44          |
| 9      | 1.941                 | 1240.8            | 0.024           | 47          | 1.789             | 1325.3            | 0.034           | 44          |
| 10     | 1.950                 | 1244.5            | 0.031           | 47          | 1.859             | 1331.1            | 0.041           | 44          |
| 11     | 1.909                 | 1237.2            | 0.032           | 47          | 1.800             | 1330.2            | 0.043           | 44          |
| 12     | 1.902                 | 1235.6            | 0.025           | 47          | 1.911             | 1330.2            | 0.033           | 44          |
| 13     | 1.907                 | 1235.0            | 0.030           | 47          | 1.931             | 1330.8            | 0.036           | 44          |
| 14     | 1.899                 | 1236.9            | 0.027           | 47          | 1.880             | 1330.2            | 0.037           | 44          |
| 15     | 1.913                 | 1235.6            | 0.024           | 47          | 1.919             | 1331.1            | 0.031           | 44          |
| 16     | 1.914                 | 1235.0            | 0.043           | 47          | 1.870             | 1331.4            | 0.045           | 44          |
| 17     | 1.925                 | 1237.2            | 0.042           | 47          | 1.897             | 1332.6            | 0.050           | 44          |
| 18     | 1.935                 | 1237.2            | 0.034           | 47          | 1.951             | 1335.0            | 0.033           | 44          |
| 19     | 1.941                 | 1236.6            | 0.027           | 47          | 2.002             | 1333.5            | 0.033           | 44          |
| 20     | 1.894                 | 1239.3            | 0.042           | 47          | 1.886             | 1330.2            | 0.046           | 44          |
| 21     | 1.906                 | 1242.0            | 0.047           | 47          | 1.815             | 1328.3            | 0.041           | 44          |
| 22     | 1.942                 | 1245.1            | 0.035           | 47          | 1.885             | 1326.5            | 0.034           | 44          |
| 23     | 1.937                 | 1245.7            | 0.035           | 47          | 1.798             | 1324.7            | 0.037           | 44          |
| 24     | 1.938                 | 1244.8            | 0.035           | 47          | 1.731             | 1317.0            | 0.039           | 44          |
| 25     | 1.942                 | 1243.3            | 0.031           | 47          | 1.857             | 1331.1            | 0.028           | 44          |
| 26     | 1.931                 | 1239.0            | 0.025           | 47          | 1.807             | 1330.2            | 0.032           | 44          |
| 27     | 1.911                 | 1236.6            | 0.037           | 47          | 1.902             | 1330.2            | 0.036           | 44          |
| 28     | 1.912                 | 1236.0            | 0.025           | 47          | 1.867             | 1332.0            | 0.033           | 44          |
| 29     | 1.906                 | 1235.3            | 0.034           | 47          | 1.709             | 1330.5            | 0.037           | 44          |
| 30     | 1.939                 | 1233.2            | 0.035           | 47          | 1.893             | 1331.7            | 0.037           | 44          |
| 31     | 1.915                 | 1232.0            | 0.038           | 47          | 2.067             | 1342.0            | 0.035           | 44          |
| 32     | 1.911                 | 1231.7            | 0.032           | 47          | 2.067             | 1342.7            | 0.039           | 44          |
| 33     | 1.947                 | 1233.8            | 0.028           | 47          | 2.116             | 1341.7            | 0.032           | 44          |
| 34     | 1.948                 | 1236.9            | 0.029           | 47          | 2.079             | 1341.4            | 0.037           | 44          |
| 35     | 1.927                 | 1236.3            | 0.032           | 47          | 2.080             | 1341.4            | 0.037           | 44          |
| 36     | 1.919                 | 1235.6            | 0.141           | 47          | 2.040             | 1339.6            | 0.148           | 44          |
| 37     | 1.917                 | 1236.9            | 0.025           | 47          | 1.996             | 1339.3            | 0.039           | 44          |
| 38     | 1.912                 | 1237.5            | 0.042           | 47          | 1.972             | 1338.4            | 0.038           | 44          |
| 39     | 1.915                 | 1237.5            | 0.033           | 47          | 1.967             | 1337.2            | 0.036           | 44          |
| 40     | 1.905                 | 1240.5            | 0.037           | 47          | 1.982             | 1338.1            | 0.041           | 44          |
| 41     | 1.907                 | 1239.3            | 0.033           | 47          | 1.935             | 1339.3            | 0.034           | 44          |
| 42     | 1.900                 | 1239.6            | 0.034           | 47          | 1.879             | 1336.9            | 0.031           | 44          |
| 43     | 1.915                 | 1239.3            | 0.046           | 47          | 1.662             | 1329.2            | 0.042           | 44          |
| 44     | 1.911                 | 1240.2            | 0.035           | 47          | 1.683             | 1329.8            | 0.037           | 44          |
| 45     | 1.921                 | 1238.4            | 0.035           | 47          | 1.777             | 1330.5            | 0.037           | 44          |
| 46     | 1.925                 | 1240.2            | 0.041           | 47          | 1.843             | 1332.6            | 0.038           | 44          |
| 47     | 1.930                 | 1240.5            | 0.042           | 47          | 1.836             | 1332.6            | 0.036           | 44          |
| 48     | 1.950                 | 1243.3            | 0.046           | 47          | 1.789             | 1333.2            | 0.043           | 44          |
| 49     | 1.907                 | 1238.7            | 0.055           | 47          | 1.940             | 1337.8            | 0.050           | 44          |
| 50     | 1.905                 | 1237.8            | 0.043           | 47          | 1.871             | 1335.9            | 0.044           | 44          |
| Max    | 1.950                 | 1245.7            | 0.141           | 47          | 2.116             | 1342.7            | 0.148           | 44          |
| Min    | 1.894                 | 1231.7            | 0.024           | 47          | 1.662             | 1317.0            | 0.025           | 44          |
| Avg    | 1.920                 | 1238.3            | 0.036           | 47          | 1.892             | 1333.4            | 0.039           | 44          |

# Reliability Report

**Part Number: MURB10120C-TP**

**Date: 2023-1-15**

## Test Results

| Test Item                                                      | Conditions                                                                                                                            | Duration                                        | Quantity  | Rejects   |
|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|-----------|-----------|
| <b>TEST</b><br>Pre- and Post-Stress<br>Electrical Test         | T <sub>a</sub> = 25 °C                                                                                                                | N/A                                             | all parts | see below |
| <b>Pre-conditioning</b>                                        | JESD22A-113<br>1.Temperature Cycling:-40℃~60℃,<br>2.Bake:125℃,<br>3.Moisture Soak:85±2℃, 85±5%;<br>4.Reflow*3Cycles:260℃,Time 5-60Min | 5 Cycles;<br>24 hours;<br>168 hours<br>3 Cycles | 308Pcs    | 0         |
| <b>HTRB</b><br>High Temperature<br>Reverse Bias                | MIL-STD-750<br>Method 1038<br>T <sub>j</sub> = T <sub>jmax</sub> , 80% VR                                                             | 1000 hours                                      | 77Pcs     | 0         |
| <b>TC</b><br>Temperature Cycling                               | JESD22-A104<br>-55℃(+0,-10)/15Min~<br>150(+15,-0)/15Min,<br>1000Cycles                                                                | 1000 Cycles<br>(500 hours)                      | 77Pcs     | 0         |
| <b>AC</b><br>Autoclave                                         | JESD22-A102<br>T <sub>a</sub> = 121 °C±2℃, RH = 100 %, 15psig                                                                         | 96 hours                                        | 77Pcs     | 0         |
| <b>H3TRB</b><br>High Humidity High<br>Temperature Reverse Bias | JESD22-A101<br>T <sub>a</sub> = 85 °C±2℃, RH = 85%±5%,<br>80 % VR (VR MAX=100V)                                                       | 1000 hours                                      | 77Pcs     | 0         |
| <b>IOL</b><br>Intermittent Operating Life                      | MIL-STD-750 Method 1037<br>ON 2Min/OFF 2min, devices powered<br>to insure ΔT <sub>j</sub> ≥ 100 °C for 15000 cycles                   | 15000 Cycles<br>(1000 hours)                    | 77Pcs     | 0         |
| <b>RSH</b><br>Resistance to Solder Heat                        | JESD22-B106<br>260 °C (+5 , -0)                                                                                                       | 10 s                                            | 30Pcs     | 0         |
| <b>SD</b><br>Solderability                                     | J-STD-002<br>235 °C ± 5 °C                                                                                                            | 3 s                                             | 10Pcs     | 0         |
| <b>HTSL</b><br>High Temperature<br>Storage Life                | JESD22-A103<br>TstgMax                                                                                                                | 1000 hours                                      | 77Pcs     | 0         |