

Features

- ESD Protection of 4 Line
- Low Leakage Current
- Ultra Low Capacitance
- Ultra Low Clamping Voltage
- Moisture Sensitivity Level 1
- Halogen Free. "Green" Device (Note 1)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

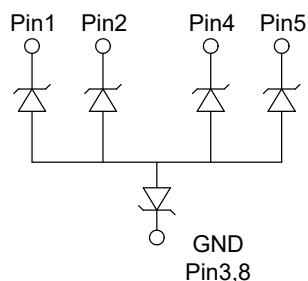
Maximum Ratings

| | | |
|--|------------------|-----------------|
| IEC61000-4-2 (ESD) | Air | ±15KV |
| | Contact | ±15KV |
| Peak Pulse Current (8/20μs) | I _{PP} | 7A |
| Peak Pulse Power (8/20μs) ^(Note2) | P _{PK} | 56W |
| Operating Junction Temperature Range | T _J | -55°C to +125°C |
| Storage Temperature Range | T _{STG} | -55°C to +150°C |

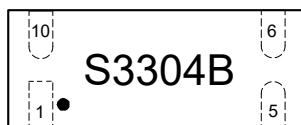
Note :

1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC61000-4-5.

Internal Structure

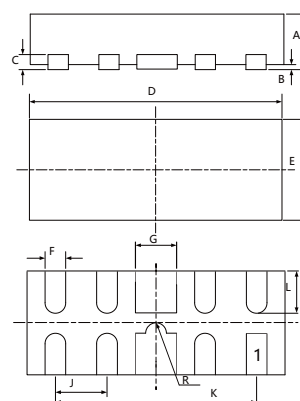


Marking Code



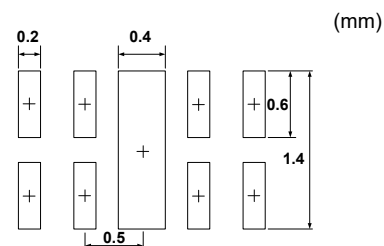
Snap Back ESD Protection Device

DFN-10

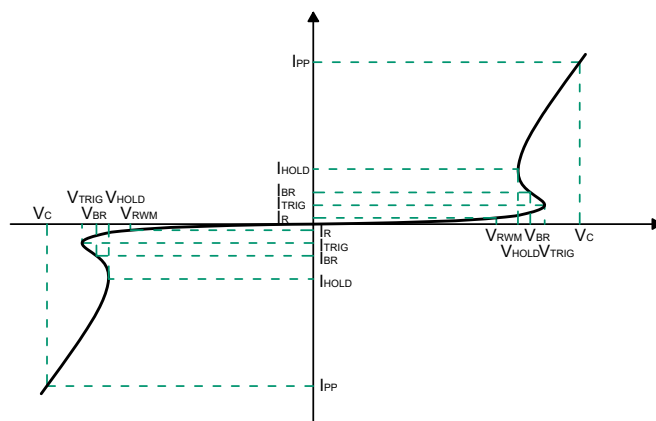


| DIM | INCHES | | MM | | NOTE |
|-----|--------|-------|-------|------|------|
| | MIN | MAX | MIN | MAX | |
| A | 0.016 | 0.020 | 0.40 | 0.50 | |
| B | 0.000 | 0.002 | 0.00 | 0.05 | |
| C | 0.004 | 0.008 | 0.10 | 0.20 | |
| D | 0.098 | 0.102 | 2.45 | 2.55 | |
| E | 0.038 | 0.042 | 0.95 | 1.05 | |
| F | 0.006 | 0.010 | 0.15 | 0.25 | |
| G | 0.014 | 0.018 | 0.35 | 0.45 | |
| J | 0.020 | | 0.500 | | TYP. |
| K | 0.080 | | 2.000 | | TYP. |
| L | 0.012 | 0.018 | 0.30 | 0.46 | |
| R | 0.005 | | 0.125 | | TYP. |

SUGGESTED SOLDER PAD LAYOUT



| Symbol | Parameter |
|------------|-------------------------------------|
| V_{RWM} | Peak Reverse Working Voltage |
| I_R | Reverse Leakage Current @ V_{RWM} |
| V_{BR} | Breakdown Voltage @ I_T |
| I_{PP} | Maximum Reverse Peak Pulse Current |
| V_C | Clamping Voltage @ I_{PP} |
| V_{TRIG} | Reverse Trigger Voltage |
| I_{TRIG} | Reverse Trigger Current |
| V_{HOLD} | Reverse Holding Voltage |
| I_{HOLD} | Reverse Holding Current |
| C_J | Junction Capacitance |



Electrical Characteristics @ 25°C (Unless Otherwise Specified)

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Units |
|-------------------------------------|------------|--------------------------------|------|------|------|----------|
| Reverse Working Voltage | V_{RWM} | | | | 3.3 | V |
| Reverse Breakdown Voltage | V_{BR} | $I_T=1mA$ | 6 | | 10 | V |
| Reverse Leakage Current | I_R | $V_{RWM}=3.3V$ | | | 0.2 | μA |
| Reverse Holding Voltage | V_{HOLD} | $I_{HOLD} = 50mA$, | 2 | | | V |
| Clamping Voltage ^{Note1} | V_C | $I_{PP}=1A$, $t_p=8/20\mu s$ | | 3 | 5 | V |
| Clamping Voltage ^{Note1} | V_C | $I_{PP}=7A$, $t_p=8/20\mu s$ | | 6.5 | 8 | V |
| Clamping Voltage ^{Note2} | V_C | $I_{PP} = 16A$, $t_p = 100ns$ | | 11 | | V |
| Junction Capacitance | C_J | $V_R=0V$, $f=1MHz$ | | 0.22 | | pF |
| Dynamic Resistance ^{Note2} | R_{DYN} | TLP, $t_p=100ns$ | | 0.43 | | Ω |

Note :

1.Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC61000-4-5.

2.TLP parameter: $Z_0=50\Omega$, $t_p=100ns$, $t_r=2ns$, averaging window from 60ns to 80ns. R_{DYN} is calculated from 4A to 16A.

3.All measured from any I/O pins to GND.

Curve Characteristics

Fig. 1 - 8 X 20 μ s Pulse Waveform

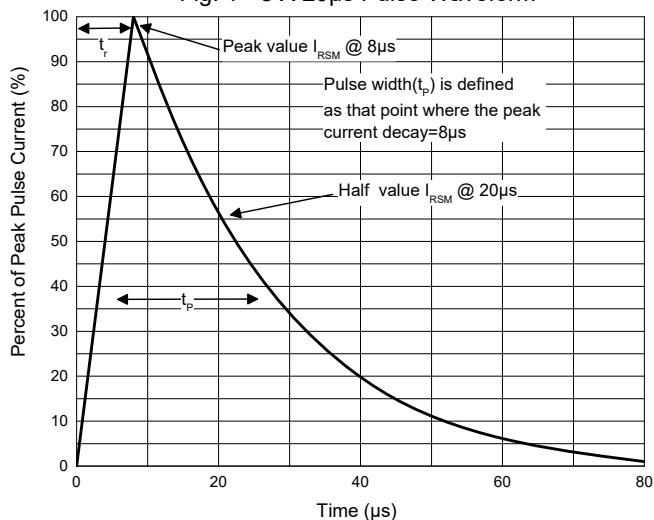


Fig. 2 - Non-Repetitive Peak Pulse Power

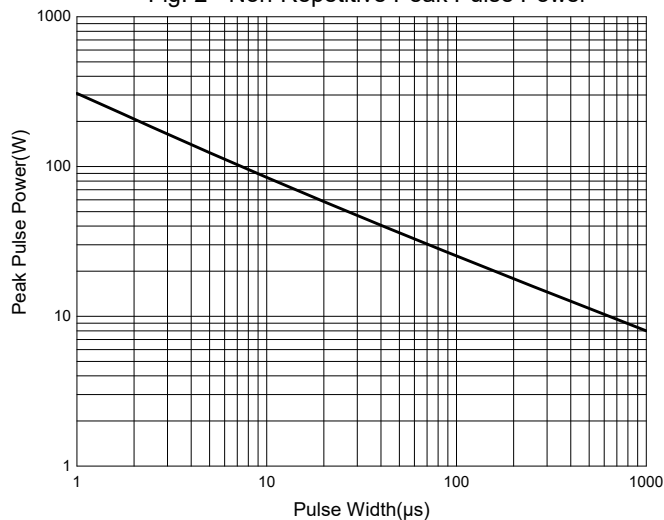


Fig. 3 - Capacitance Characteristics

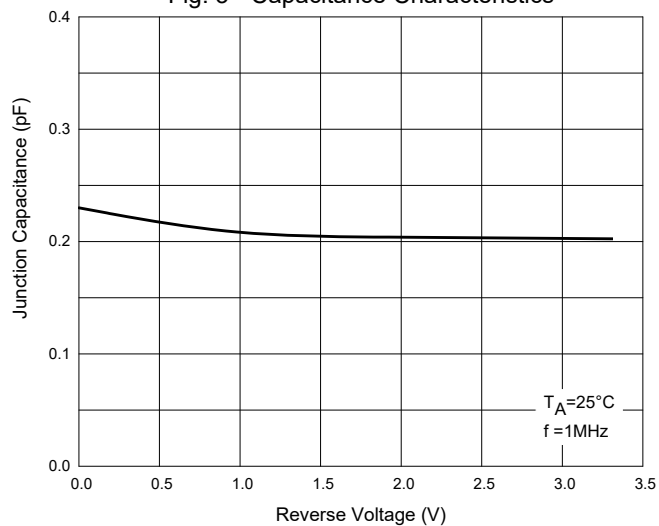


Fig. 4 - Clamping Voltage Characteristics

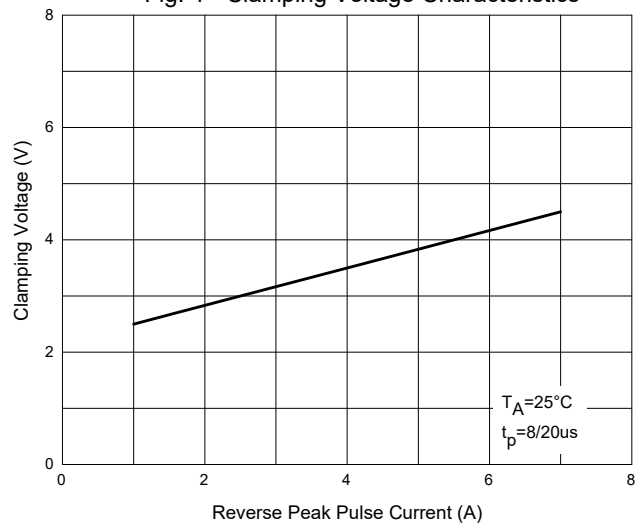


Fig. 5 - TLP Curve

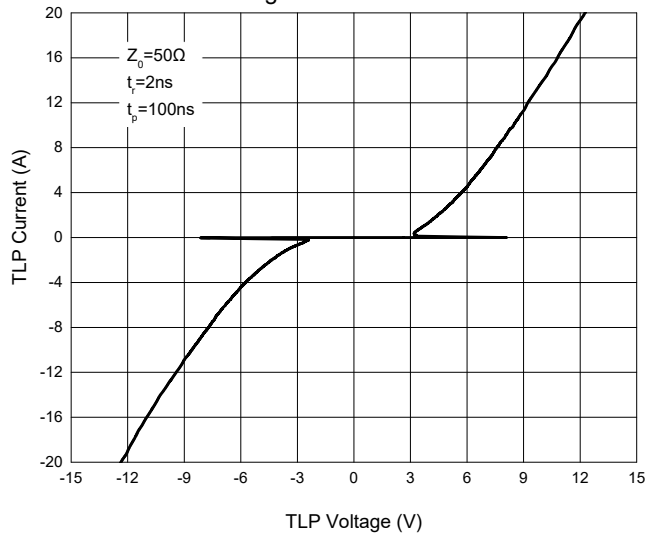
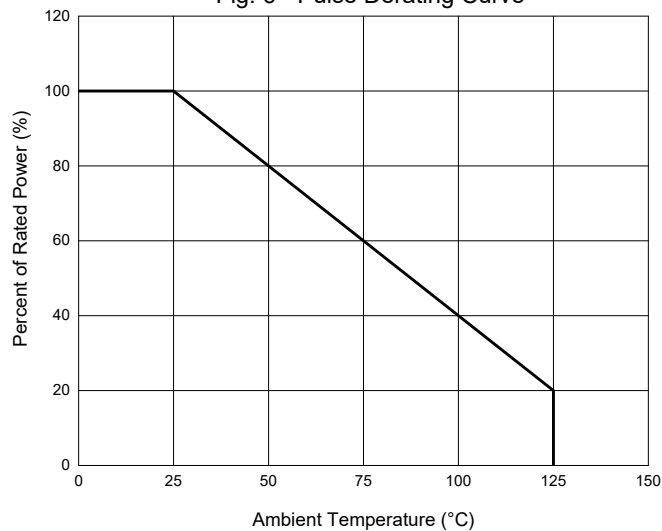


Fig. 6 - Pulse Derating Curve



Ordering Information

| Device | Packing |
|----------------|-----------------------|
| Part Number-TP | Tape&Reel: 3Kpcs/Reel |

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