

# MSKSEMI

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT

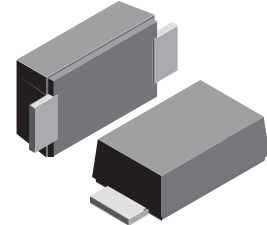


PLED

Product data sheet

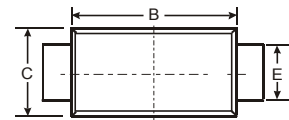
### Features

- For surface mounted applications
- Low profile package
- Low incremental surge resistance, excellent clamping capability
- 200W peak pulse power capability with a 10/1000  $\mu$ s wave from, repetition rate (duty cycle): 0.01%
- High temperature soldering guaranteed: 260  $^{\circ}$ C/10 seconds, at terminals



### Mechanical Data

- Case: JEDEC SOD-123FL, molded plastic over passivated chip
- Polarity: Color band denotes positive end ( cathode ) except for bidirectional
- Mounting position: Any
- Weight: 0.006 ounces, 0.02 gram



SOD-123FL

### Maximum Ratings $T_A = 25^{\circ}$ C unless otherwise specified

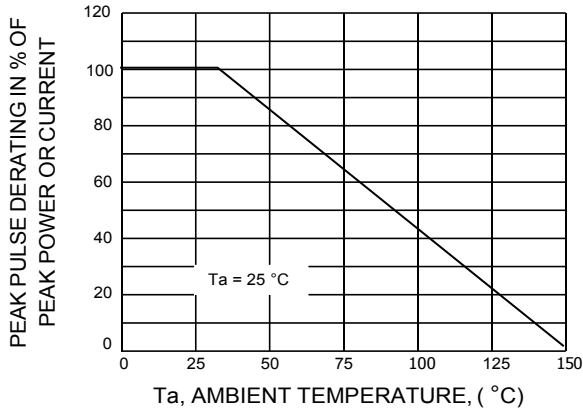
| Characteristic   | Symbol          | Value       | Unit             |
|--|-----------------|-------------|------------------|
| Maximum $P_{PK}$ Dissipation (PW - 10/1000 $\mu$ s)                              | $P_{PK}$        | 200         | W                |
| Maximum $P_{PK}$ Dissipation @ $T_a = 25^{\circ}$ C (PW - 8/10 $\mu$ s) (Note 2) | $P_{PK}$        | 1000        | W                |
| DC Power Dissipation @ $T_a = 25^{\circ}$ C (Note 3)                             | $P_D$           | 385         | mW               |
| Derate above 25 $^{\circ}$ C   |                 | 4.0         | mW/ $^{\circ}$ C |
| Thermal Resistance, Junction to Ambient (Note 3)                                 | $R_{\theta JA}$ | 325         | $^{\circ}$ C/W   |
| Thermal Resistance, Junction to Lead (Note 3)                                    | $R_{\theta JL}$ | 26          | $^{\circ}$ C/W   |
| Operating Junction and Storage Temperature Range                                 | $T_J, T_{STG}$  | -55 to +150 | $^{\circ}$ C     |

**Notes :**

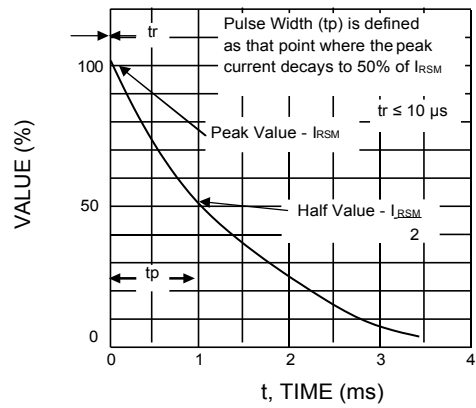
- (1) Non-repetitive current pulse at  $T_a = 25^{\circ}$ C, per waveform of Fig. 2.
- (2) Non-repetitive current pulse at  $T_a = 25^{\circ}$ C, per waveform of Fig. 5.
- (3) Mounted with recommended minimum pad size, DC board FR4.

| TYPE         | Marking | Reverse Stand-Off voltage | Breakdown Voltage Min. @ $I_T$ | Breakdown Voltage Max. @ $I_T$ | Test Current | Reverse Leakage @ $V_{RWM}$ | Maximum Clamping Voltage @ $I_{PP}$ | Peak Pulse Current |
|--------------|---------|---------------------------|--------------------------------|--------------------------------|--------------|-----------------------------|-------------------------------------|--------------------|
|              |         | $V_{RWM}$ (V)             | $V_{BR MIN}$ (V)               | $V_{BR MAX}$ (V)               | $I_T$ (mA)   | $I_R$ ( $\mu$ A)            | $V_C$ (V)                           | $I_{PP}$ (mA)      |
| PDCV300JB-MS | JK      | 30                        | 33.3                           | 36.8                           | 1.0          | 1.0                         | 48.4                                | 4.1                |

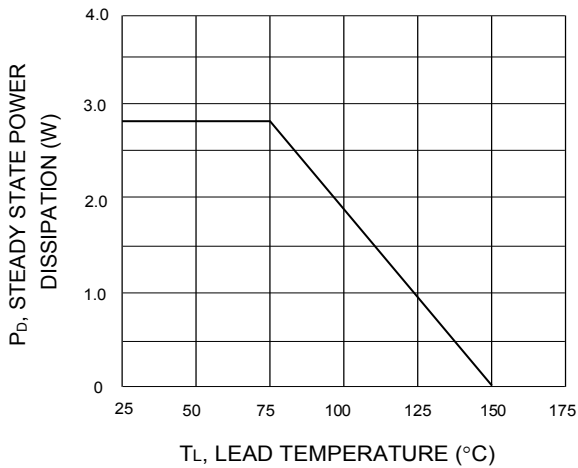
**FIG.1 - PULSE DERATING CURVE**



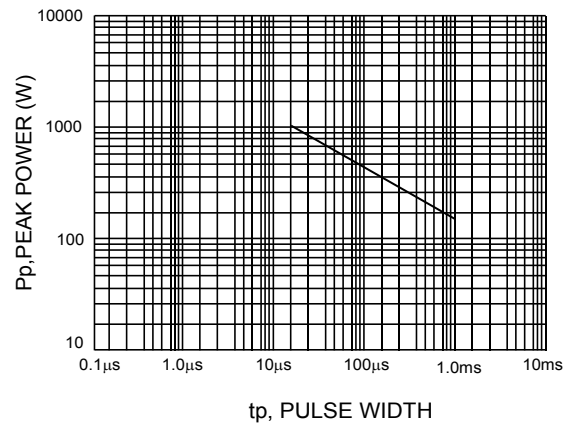
**FIG.2 - 10 x 1000 µs PULSE WAVEFORM**



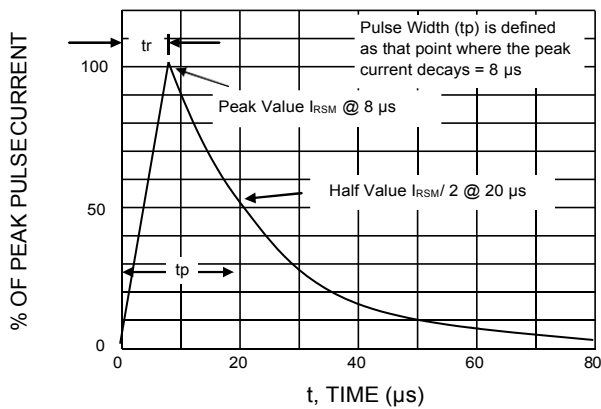
**FIG.3 - STEADY STATE POWER DERATING**



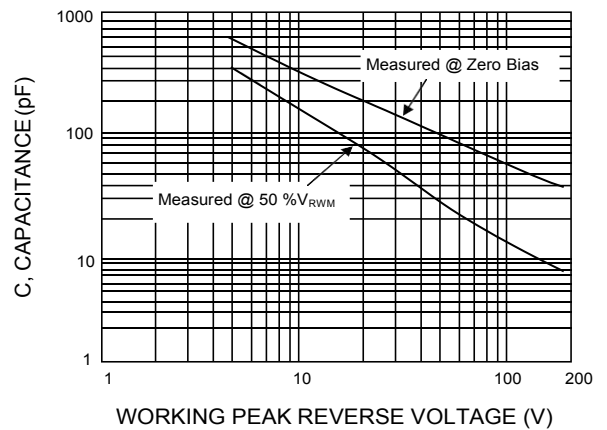
**FIG.4 - PULSE RATING CURVE**



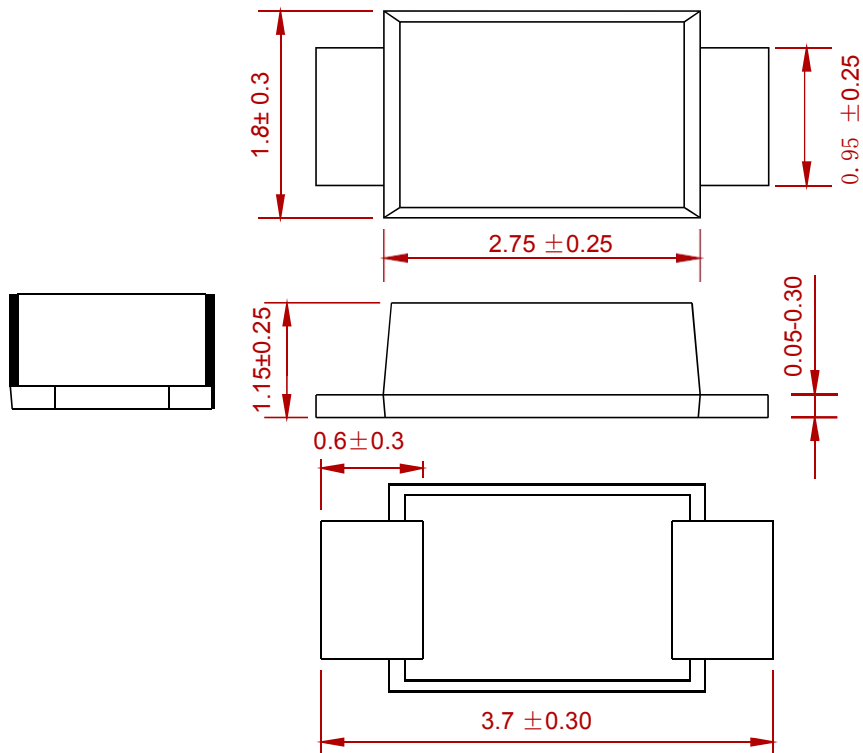
**FIG.5 - 8 x 20 µs PULSE WAVEFORM**



**FIG. 6 - CAPACITANCE VS. WORKING PEAK REVERSE VOLTAGE**

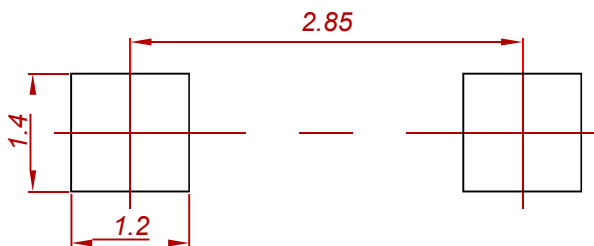


**PACKAGE MECHANICAL DATA**



*Dimensions in millimeters*

**Suggested Pad Layout**



**Note:**

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05$  mm.
3. The pad layout is for reference purposes only.

**REEL SPECIFICATION**

| P/N          | PKG       | QTY  |
|--------------|-----------|------|
| PDCV300JB-MS | SOD-123FL | 3000 |