

# MSKSEMI

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT

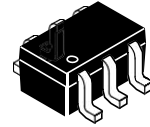


PLED

Product data sheet

### Applications

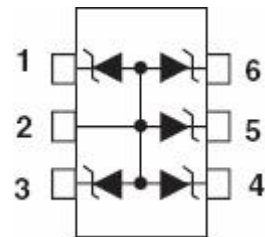
- Cellular handsets and accessories
- Portable electronics
- Computers and peripherals
- Communications systems
- Audio and video equipment.



SOT-363

### Features

- Uni-directional ESD protection of up to five lines
- Bi-directional ESD protection of up to four lines
- Low diode capacitance
- Low clamping voltage
- low leakage current
- IEC 61000-4-2; level 4 (ESD)
- IEC61000-4-5 (surge)
- S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.



### Electrical Characteristics

| P/N       | V <sub>BR</sub> |      | V <sub>RM</sub> | I <sub>R</sub> | I <sub>PP</sub> | V <sub>CL</sub> (Max) |                       | C<br>f=1MHz;<br>V <sub>R</sub> =0 V;<br>see Fig.4<br>pF |
|-----------|-----------------|------|-----------------|----------------|-----------------|-----------------------|-----------------------|---|
|           | Min.            | Max. |                 |                |                 | @ I <sub>PP</sub> =1A | @ I <sub>PP</sub> =5A |   |
|           | v               | v    | v               | μ A            | A               | v                     | v                     |   |
| SMF15CT1G | 17              | 19   | 15              | 1              | 5               | 23                    | 29                    | 15  |

### Notes

1. Non-repetitive current pulse 8/20 μs exponentially decaying waveform; see Fig.1.
2. Measured from any of pins 1, 3, 4, 5 or 6 to pin 2.

### Absolute Ratings (T<sub>amb</sub>=25°C )

| Symbol           | Parameter   | Value       | Units |
|------------------|---|-------------|-------|
| P <sub>PP</sub>  | Peak Pulse Power (t <sub>p</sub> = 8/20μs)                  | 150         | W     |
| T <sub>L</sub>   | Maximum lead temperature for soldering during 10s           | 260         | °C    |
| T <sub>stg</sub> | Storage Temperature Range                                   | -60 to +150 | °C    |
| T <sub>op</sub>  | Operating Temperature Range                                 | -60 to +150 | °C    |
| T <sub>j</sub>   | Maximum junction temperature                                | 150         | °C    |
| V <sub>PP</sub>  | Electrostatic discharge<br>IEC61000-4-2 (contact discharge) | 8           | kV    |
|                  | IEC61000-4-2 (air discharge)                                | 15          | kV    |

**Electrical Parameter**

| Symbol   | Parameter          |
|----------|--------------------|
| $V_{RM}$ | Stand-off voltage  |
| $V_{BR}$ | Breakdown voltage  |
| $V_{CL}$ | Clamping voltage   |
| $I_R$    | Leakage current    |
| $I_{PP}$ | Peak pulse current |
| C        | Capacitance        |

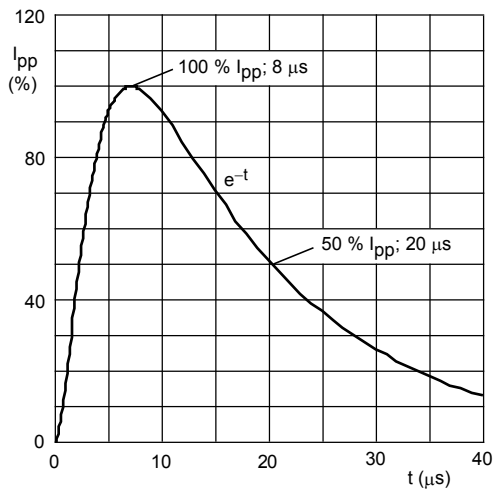
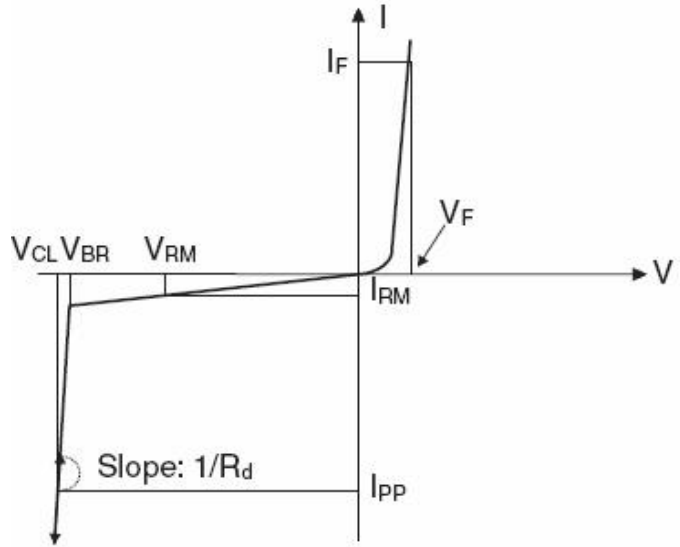


Fig.1 8/20  $\mu$ s pulse waveform according to IEC 61000-4-5.

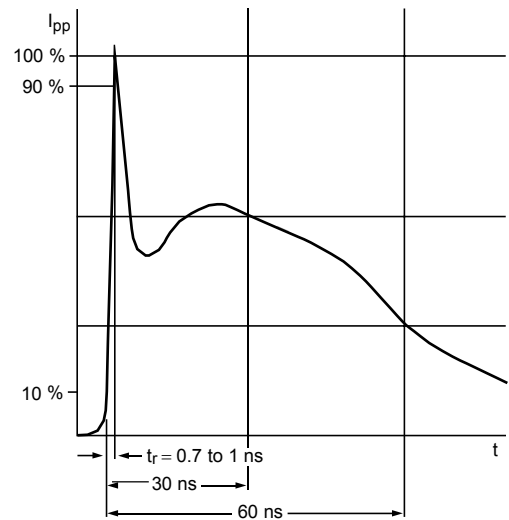
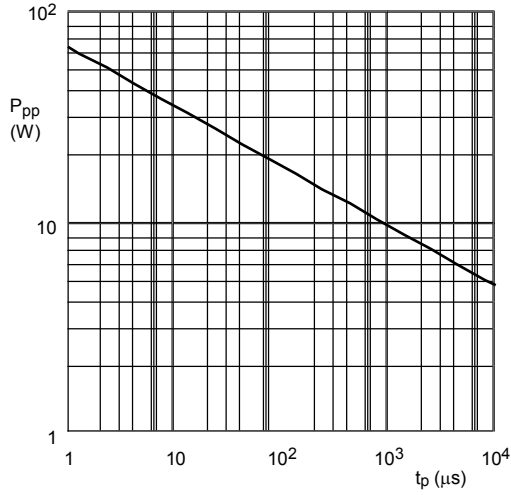


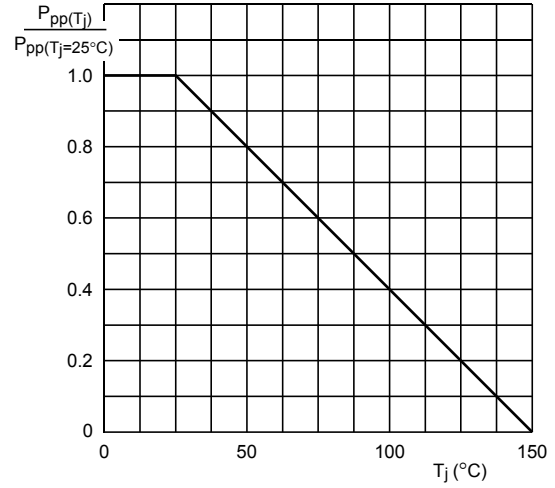
Fig.2 Electrostatic Discharge (ESD) pulse waveform according to IEC61000-4-2.

**GRAPHICAL DATA**

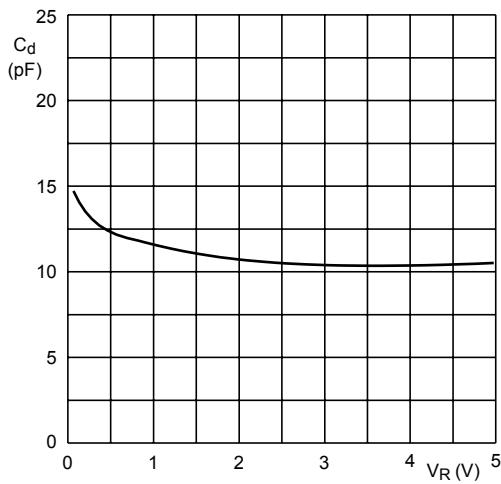


$T_{amb} = 25\text{ }^{\circ}\text{C}$ .  
 $I_{pp} = 8/20\text{ }\mu\text{s}$  exponentially decaying waveform; see Fig.1.

**Fig.3** Peak pulse power dissipation as a function of pulse time; typical values.

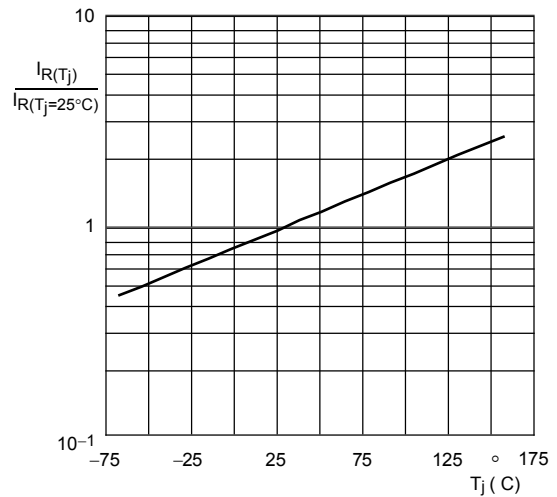


**Fig.4** Relative variation of peak pulse power as a function of junction temperature; typical values.



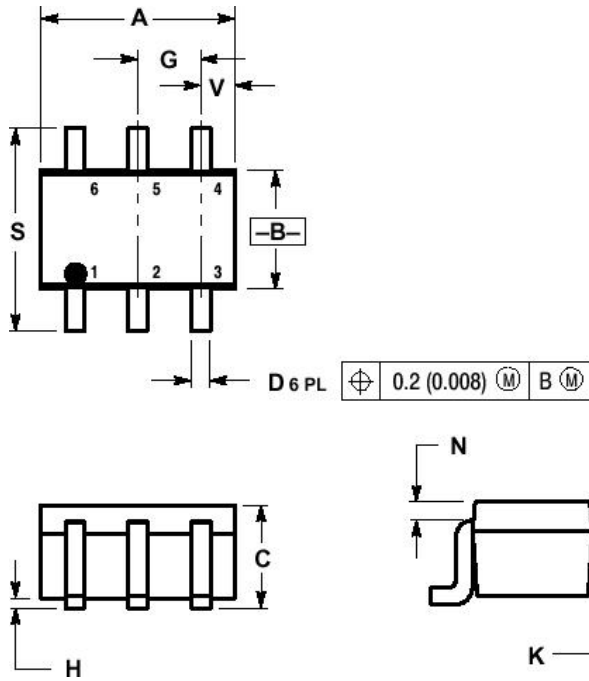
$f = 1\text{ MHz}$ ;  $T_{amb} = 25\text{ }^{\circ}\text{C}$ .

**Fig.5** Diode capacitance as a function of reverse voltage; typical values.



**Fig.6** Relative variation of reverse leakage current as a function of junction temperature; typical values.

## PACKAGE DIMENSIONS SOT-363



**NOTES:**

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

| DIM | INCHES    |       | MILLIMETERS |      |
|-----|-----------|-------|-------------|------|
|     | MIN       | MAX   | MIN         | MAX  |
| A   | 0.071     | 0.087 | 1.80        | 2.20 |
| B   | 0.045     | 0.053 | 1.15        | 1.35 |
| C   | 0.031     | 0.043 | 0.80        | 1.10 |
| D   | 0.004     | 0.012 | 0.10        | 0.30 |
| G   | 0.026BSC  |       | 0.65BSC     |      |
| H   | —         | 0.004 | —           | 0.10 |
| J   | 0.004     | 0.010 | 0.10        | 0.25 |
| K   | 0.004     | 0.012 | 0.10        | 0.30 |
| N   | 0.008 REF |       | 0.20 REF    |      |
| S   | 0.079     | 0.087 | 2.00        | 2.20 |
| V   | 0.012     | 0.016 | 0.30        | 0.40 |

### REEL SPECIFICATION

| P/N       | PKG     | QTY  |
|-----------|---------|------|
| SMF15CT1G | SOT-363 | 3000 |

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