



**THE DATASHEET OF  
ESDA6V1L-TP**





Micro Commercial Components



Micro Commercial Components  
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# ESDA6V1L

## Features

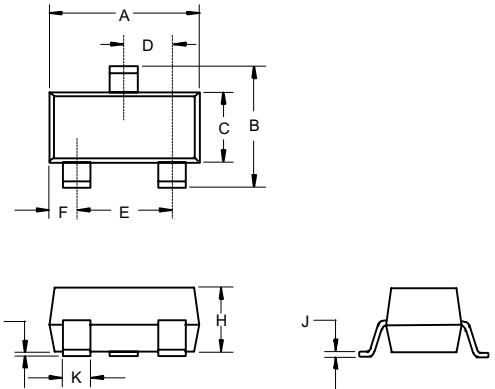
- Dual Transil Array For ESD Protection
- 2 Unidirectional Transil Functions
- Low leakageCurrent:  $I_{Rmax} < 20 \mu A$  at  $V_{WM}$
- 300W peak pulse power (8/20 us)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Halogen free available upon request by adding suffix "-HF"

## 6.1Volts ESD Protection Device

## Maximum Ratings

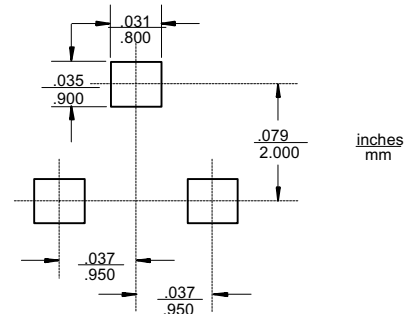
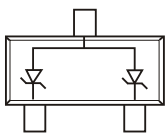
| Parameter   | Symbol    | Limits   | unit |
|---|-----------|----------|------|
| Electrostatic discharge<br>MIL STD 883C-Method 3015-6 | $V_{PP}$  | 25       | KV   |
| IEC61000-4-2 air discharge                            |           | 16       | KV   |
| IEC61000-4-2 contact discharge                        |           | 9        | KV   |
| Peak pulse power 8/20us                               | $P_{PP}$  | 300      | W    |
| Junction temperature                                  | $T_j$     | 150      | °C   |
| Storage temperature range                             | $T_{stg}$ | -55~+150 | °C   |
| Maximum lead temperature<br>For soldering during 10s  | $T_L$     | 260      | °C   |

## SOT-23



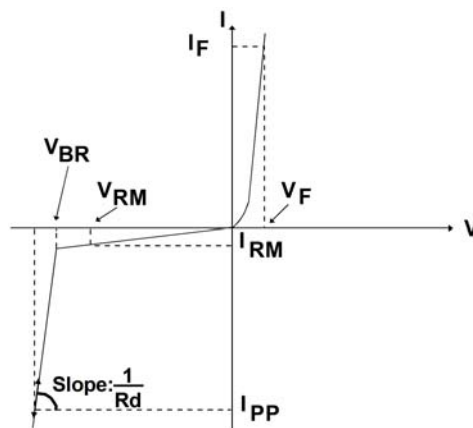
| DIM | INCHES |       | MM   |      | NOTE |
|-----|--------|-------|------|------|------|
|     | MIN    | MAX   | MIN  | MAX  |      |
| A   | .110   | .120  | 2.80 | 3.04 |      |
| B   | .083   | .104  | 2.10 | 2.64 |      |
| C   | .047   | .055  | 1.20 | 1.40 |      |
| D   | .035   | .041  | .89  | 1.03 |      |
| E   | .070   | .081  | 1.78 | 2.05 |      |
| F   | .018   | .024  | .45  | .60  |      |
| G   | .0005  | .0039 | .013 | .100 |      |
| H   | .035   | .044  | .89  | 1.12 |      |
| J   | .003   | .007  | .085 | .180 |      |
| K   | .015   | .020  | .37  | .51  |      |

## Pin Configuration-Top View



**ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

| Symbol     | Parameter                       |
|------------|---------------------------------|
| $V_{WM}$   | Stand-off voltage               |
| $V_{BR}$   | Breakdown voltage               |
| $V_{CL}$   | Clamping voltage                |
| $I_{RM}$   | Leakage current                 |
| $I_{PP}$   | Peak pulse current              |
| $\alpha T$ | Voltage temperature coefficient |
| C          | Capacitance                     |
| $R_d$      | Dynamic resistance              |
| $V_F$      | Forward voltage drop            |



| Parameter            | Test Conditions       | Symbol   | Min | Typ  | Max  | Unit          |
|----------------------|-----------------------|----------|-----|------|------|---------------|
| Breakdown voltage    | $I_R=1.0\text{mA}$    | $V_{BR}$ | 6.1 | 6.65 | 7.2  | V             |
| Leakage current      | $V_{WM}=5.25\text{V}$ | $I_R$    | -   | -    | 20   | $\mu\text{A}$ |
| Capacitance          | 0V bias               | C        | -   | 140  | -    | pF            |
| Forward voltage drop | $I_F=200\text{mA}$    | $V_F$    | -   | -    | 1.25 | V             |

# ESDA6V1L

## TYPICAL CHARACTERISTICS

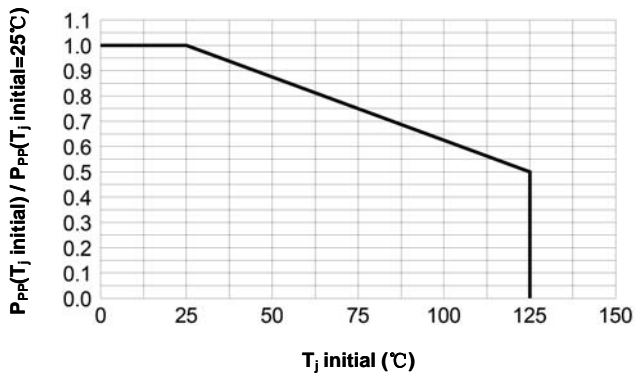


Fig.1: Peak power dissipation vs. initial junction temperature

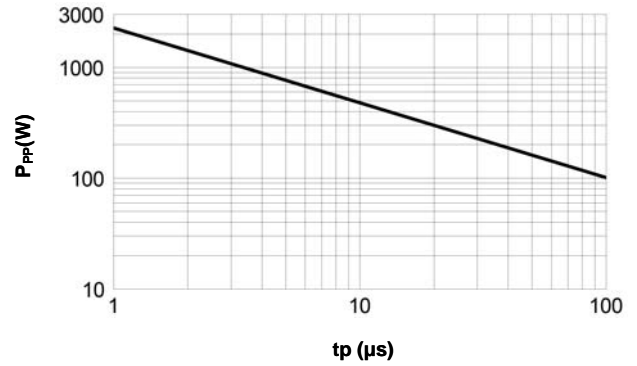


Fig.2: Peak pulse power vs. exponential pulse duration (T<sub>j</sub> initial = 25°C)

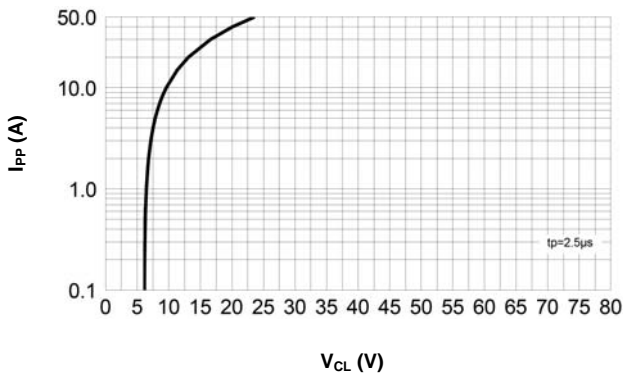


Fig.3: Clamping voltage vs. peak pulse current (T<sub>j</sub> initial = 25°C, rectangular waveform tp = 2.5µs)

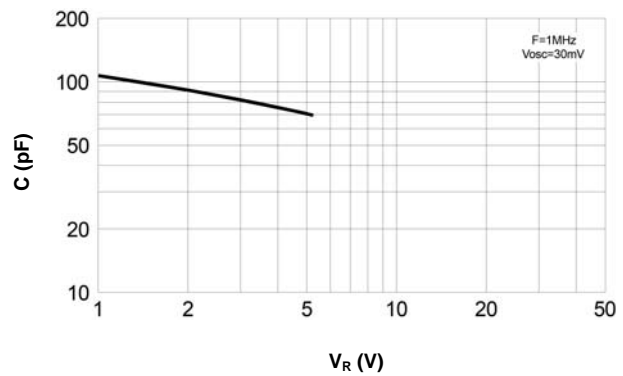


Fig.4: Capacitance vs. reverse applied voltage (typical values)

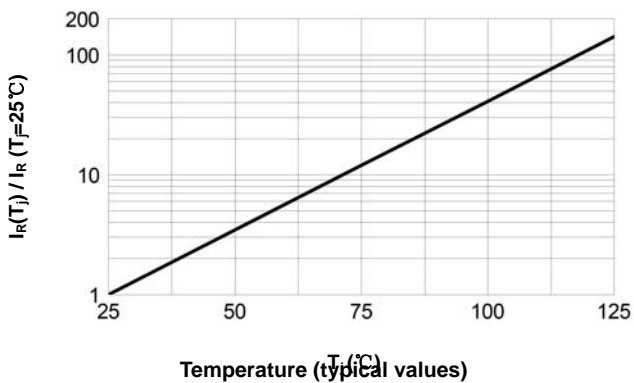


Fig.5: Relative variation of leakage current vs. junction

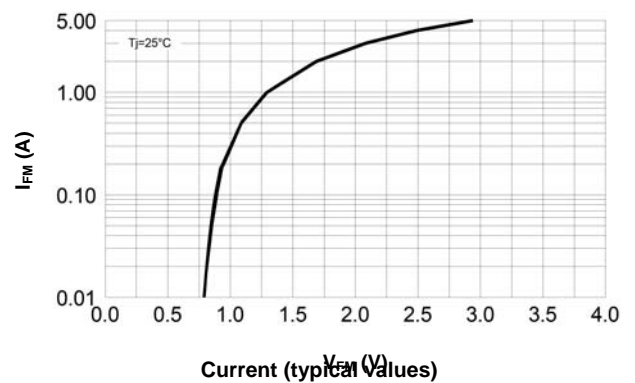


Fig.6: Peak forward voltage drop vs. peak forward



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### Ordering Information :

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

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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