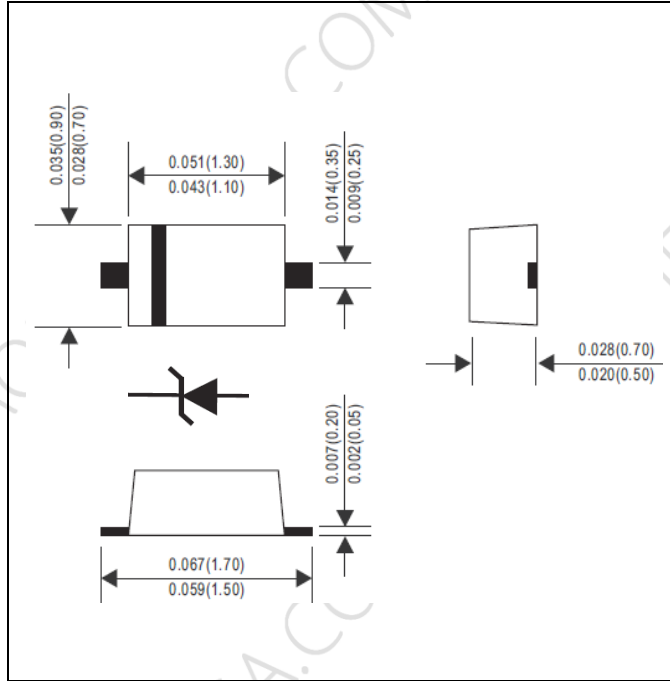


## SMD UNI-DIRECTIONAL TVS FOR ESD PROTECTION DIODES, 3.3V-15V



### PRODUCT FEATURES

1. FLAMMABILITY CLASSIFICATION 94V-0
2. RESPONSE TIME <1ns TYP.
3. PROTECT ONE I/O LINE OR POWER LINE
4. IEC COMPATIBILITY:
  - IEC61000-4-2 (ESD) ±15KV (AIR), ±8KV (CONTACT)
  - IEC61000-4-4 (EFT) 40A (5/50nS)
  - IEC61000-4-5 (LIGHTNING) >8A (8/20µS)
5. LOW LEAKAGE CURRENT
6. CASE: TRANSFER MOLDED, SOD-523FL
7. DIMENSIONS IN INCHES AND (MILLIMETERS)
8. LEADS: SOLDERABILITY PER MIL-STD-750 METHOD 2026
9. WEIGHT: 0.002 GRAMS
10. RoHS COMPLIANT, ADD SUFFIX "H" FOR HALOGEN FREE  
i.e. ESD5Z3.3-H: RoHS COMPLIANT/HALOGEN FREE

## ELECTRICAL CHARACTERISTICS

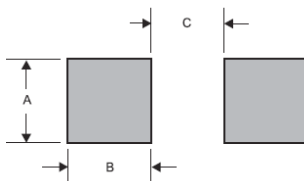
### MAXIMUM RATINGS (T<sub>A</sub> =25°C UNLESS OTHERWISE NOTED ) AND ELECTRICAL CHARACTERISTICS

RATING	SYMBOL	UNITS
PEAK PULSE POWER, tp=8/20 µS	P <sub>PP</sub>	200 W
ESD VOLTAGE	E <sub>SD</sub>	16 KV
STORAGE TEMPERATURE RANGE	T <sub>STG</sub>	- 55 TO +150 °C
OPERATING JUNCTION TEMPERATURE RANGE	T <sub>J</sub>	- 40 TO +125 °C

PART NUMBER	Max. V <sub>RWM</sub> (V)	Max I <sub>R</sub> @ V <sub>RWM</sub> (µA)	Min V <sub>BR</sub> @ I <sub>T</sub> =1mA (A)	Max V <sub>C</sub> @ I <sub>PP</sub> =5A (V)	Max I <sub>PP</sub> (A)	V <sub>C</sub> @ Max I <sub>PP</sub> (V) (NOTE 1)	MAX P <sub>PK</sub> (W) (NOTE 1)	MAX C <sub>J</sub> (pF)	MARKING
ESD5Z3.3	3.3	1	5	8.4	11.2	14.1	158	105	ZE
ESD5Z5.0	5.0	1	6.2	11.6	9.4	18.6	174	80	ZF
ESD5Z7.0	7.0	1	7.5	13.5	8.8	22.7	200	65	ZH
ESD5Z12	12	1	13.5	17	9.6	25	240	55	ZM
ESD5Z15	15	1	16.5	22	10	26	260	65	ZN

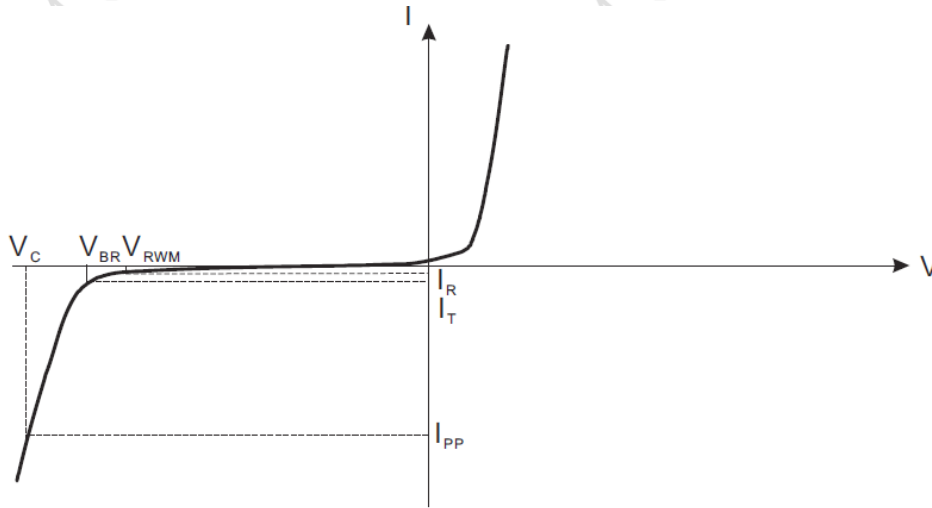
NOTE : 1. SURGE CURRENT WAVEFORM PER FIG 1.  
2. UNLESS SPECIFIED OTHERWISE, THE ELECTRICAL TEST IS PERFORMED AT T<sub>A</sub>=25°C, V<sub>F</sub>=0.9V@I<sub>F</sub>=10mA

## LAYOUT RECOMMENDATION



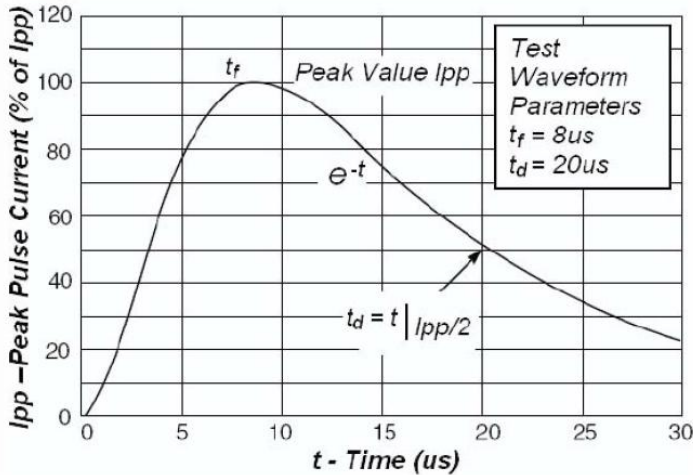
PACKAGE	A	B	C
SOD-523FL	0.032 (0.80)	0.024 (0.60)	0.044 (1.10)

## RATINGS AND CHARACTERISTIC CURVES

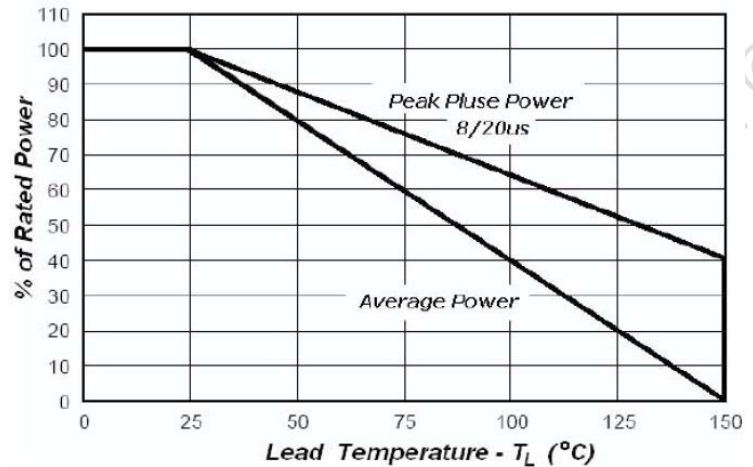


Uni-Directional TVS

- $V_C$  : Clamping Voltage @  $I_{PP}$
- $I_{PP}$  : Maximum Reverse Peak Pulse Current
- $V_{RWM}$  : Maximum Working Peak Reverse voltage
- $I_R$  : Maximum Reverse Leakage Current @  $V_{RWM}$
- $V_{BR}$  : Breakdown voltage @  $I_T$
- $I_T$  : Test Current
- $P_{PP}$  : Peak Pulse Power
- $C_J$  : Max. Capacitance @  $V_R = 0V$  and  $f = 1MHz$



**Fig1. Pulse Waveform**



**Fig2. Power Derating**