

ESD5Z2.5 SERIES

200W Surface Mount Uni-Directional TVS For ESD Protection
VOLTAGE : 2.5 TO 12Volts

Features	Outline
• Small body outline dimensions: 0.039" X 0.024" (1.0mm X 0.60mm). • Low body height: 0.017" (0.43mm) max. • Stand-off voltage: 2.5V-12.0V. • Low leakage. • Response time is typically < 1ns. • ESD rating of class 3 (> 16kV) per human body Model. • IEC61000-4-2 level 4 ESD protection. • IEC61000-4-4 level 4 FET protection • Suffix "G" indicates Halogen-free part, ex. ESD5Z2.5G. • Lead-free parts meet environmental standards of MIL-STD-19500 /228	SOD-523 Dimensions in inches and (millimeters)
Mechanical data	
• Epoxy: UL94-V0 rated flame retardant • Case : Molded plastic, SOD-523 • Terminals : Solder plated, solderable per MIL-STD-750, Method 2026 • Polarity : Indicated by cathode band • Weight : Approximated 0.002 gram	

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load.
 For capacitive load, derate current by 20%.

Parameter	Conditions	Symbol	Value	UNIT
Total power dissipation	on FR-5 board(Note1)@ TA=25°C	P _O	200	mW
ESC61000-4-2(ESD)	air discharge contact discharge		±30	KV
ESD voltage	per human body model	V _{ESD}	16	KV
Lead solder temperature-maximum	10 second duration	T _L	260	°C
Thermal resistance	junction to ambient	R _{θJA}	625	°C/W
Operating temperature		T _J	-55 ~ +150	°C
Storage temperature		T _{STG}	-55 ~ +150	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only.
 Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.
 1. FR-5 = 1.0 X 0.75 X 0.62 in.

Part No.	Marking	V _{RWM} (V) Max	I _R (uA) @V _{RWM} Max	V _{BR} (V)@I _T (Note 2) Min	I _T (mA)	I _{PP} (Note 3) (A) Typ	V _C (V)(Note 3) @Max I _{PP} Max	P _{PK} (W) (8 X 20 us) Max	C(pF) Typ
ESD5Z2.5	ZD	2.5	6.0	4.0	1.0	11.0	10.9	120	145
ESD5Z3.3	ZE	3.3	0.05	5.0	1.0	11.2	14.1	158	105
ESD5Z5.0	ZF	5.0	0.05	6.2	1.0	9.4	18.6	174	80
ESD5Z6.0	ZG	6.0	0.01	6.8	1.0	8.8	20.5	181	70
ESD5Z7.0	ZH	7.0	0.01	7.5	1.0	8.8	22.7	200	65
ESD5Z12	ZM	12.0	0.2	13.5	1.0	9.6	29.0	240	65

Over voltage available upon request.

2. V_{BR} is measured with a pulse test current I_T at an ambient temperature of 25°C.

3. Surge current waveform per Figure1.

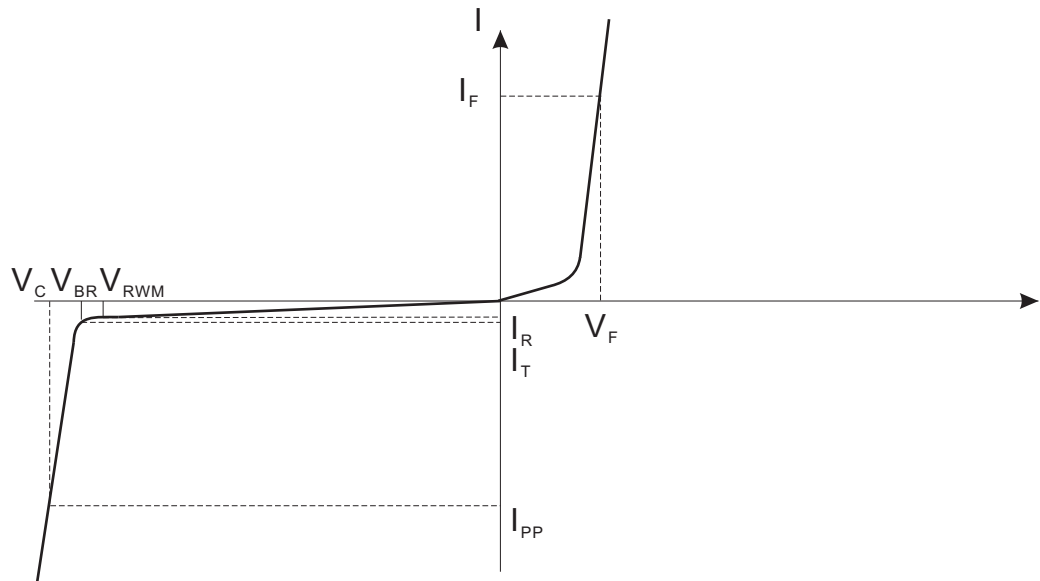


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Rating and characteristic curves

Typical characteristics (at $T_A=25^\circ\text{C}$ unless otherwise noted)



Uni-Directional TVS

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

Rating and characteristic curves (ESD5Zxx SERIES)

