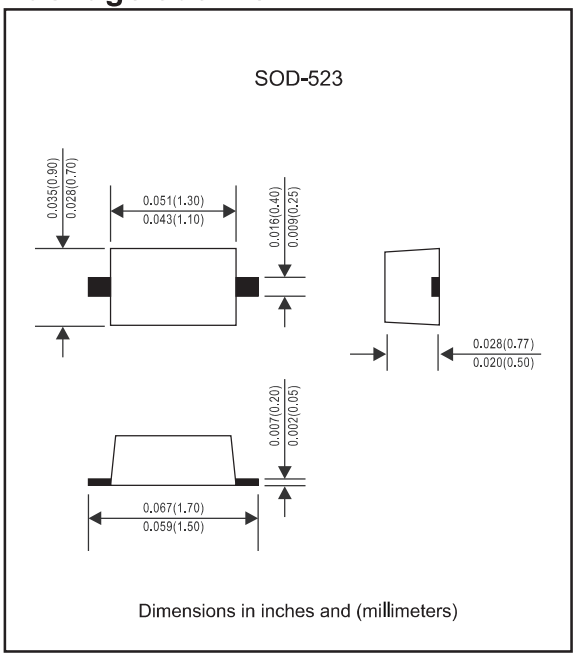
ESD5Z12C

Surface Mount Bi-Directional TVS For ESD Protection Diode -12V

FEATURES

- Small body outline dimensions: 0.063″ × 0.032″ (1.6×0.8 mm)
- Protects one bi-directional I/O line
- Low clamping voltage
- Working voltage: 12V
- Low leakage current
- RoHS compliant
- Compliant to Halogen-free

Package outline



MAIN APPLICATIONS

- LED light bar
- Cell phone handsets and accessories
- Microprocessor based equipment
- Personal digital assistants (PDA's)
- Notebooks, desktops, and servers
- Portable instrumentation
- Peripherals
- Digital cameras

PROTECTION SOLUTION TO MEET

- IEC61000-4-2 (ESD) ±20kV (air), ±20kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (Lightning) 5A (8/20μs)

MECHANICAL CHARACTERISTICS

- SOD-523 package
- Molding compound flammability rating: UL 94V-0
- Lead finish: lead free

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MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 8/20μs waveform	P_{PP}	100	W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	+/- 20 +/- 20	kV
Lead soldering temperature	T_L	260 (10 sec.)	℃
Operating junction temperature range	T_J	-55 to +125	℃
Storage temperature range	T_{STG}	-55 to +150	℃

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse working voltage	V_{RWM}				12	V
Reverse breakdown voltage	V_{BR}	I_T=1mA	13.3			V
Reverse leakage current	I_R	V_{RWM}=12V			0.1	μA
Clamping voltage	V_C	I_{PP}=5A, t_P=8/20μs		22	26	V
Junction capacitance	C_J	V_{RWM}=0V, f=1MHz		10	20	pF

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Typical Characteristics

FIG.1:V- I curve characteristics (Bi-directional)

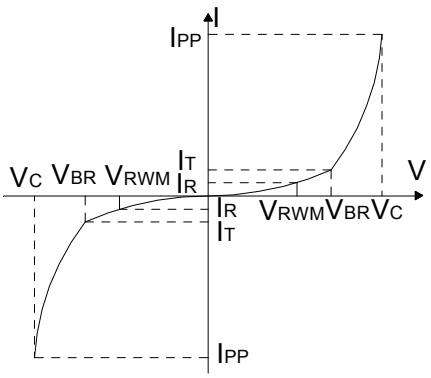


FIG.2: Pulse waveform (8/20μs)

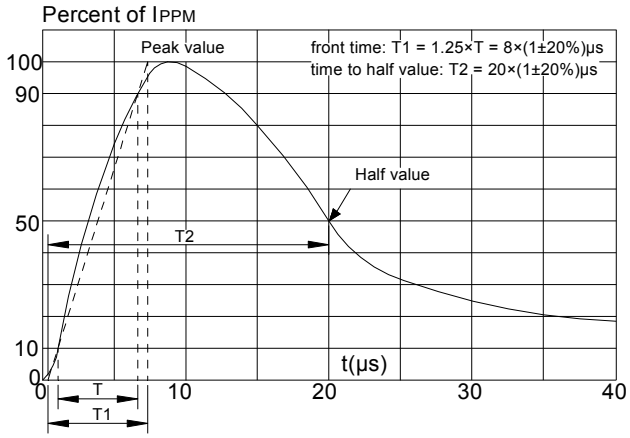


FIG.3: Pulse derating curve

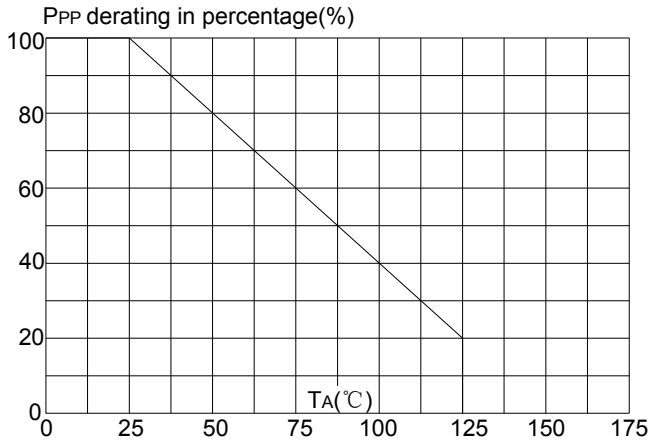
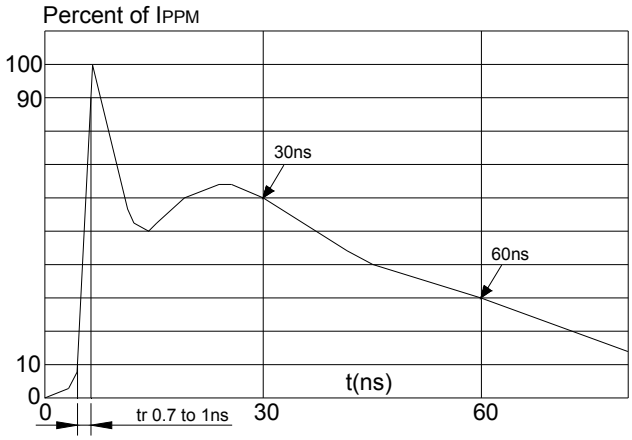


FIG.4: ESD clamping (20kV contact)



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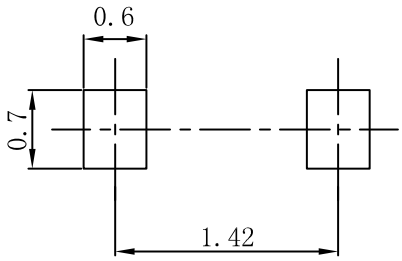
Pinning information

Pin	Simplified outline	Symbol
Bi-Directional		

Marking

Type number	Marking code
ESD5Z12C	12X

Suggested Pad Layout



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