

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

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

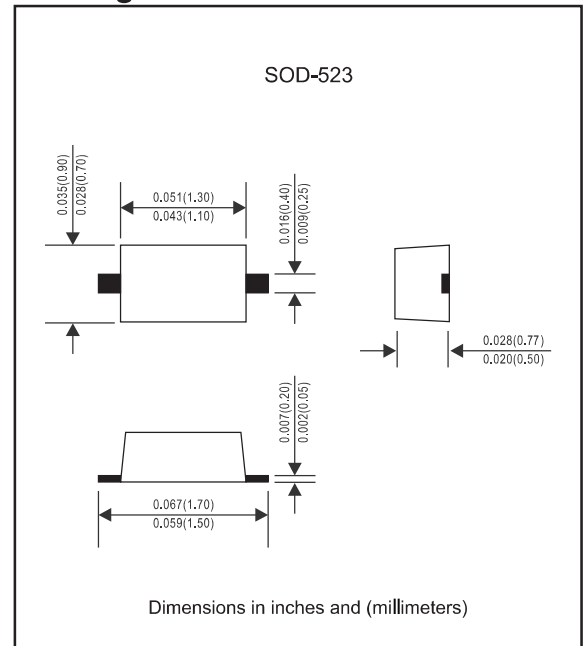
PROTECTION SOLUTION TO MEET

- 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

Package outline



MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 8/20 μs 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.)	$^{\circ}\text{C}$
Operating junction temperature range	T_J	-55 to +125	$^{\circ}\text{C}$
Storage temperature range	T_{STG}	-55 to +150	$^{\circ}\text{C}$

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

Typical Characteristics

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

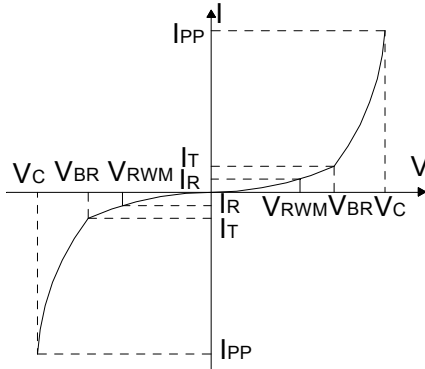


FIG.2: Pulse waveform (8/20 μ s)

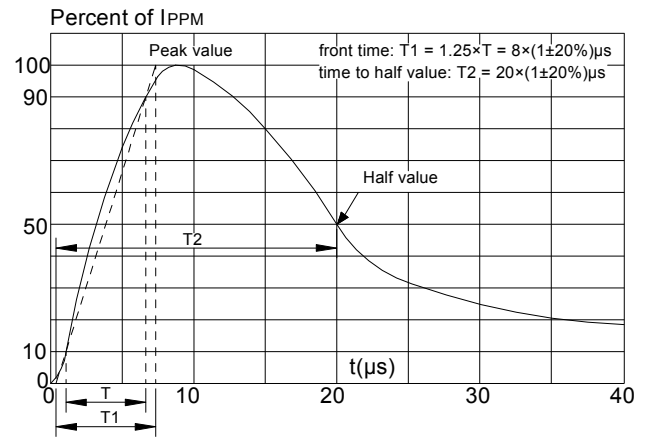


FIG.3: Pulse derating curve

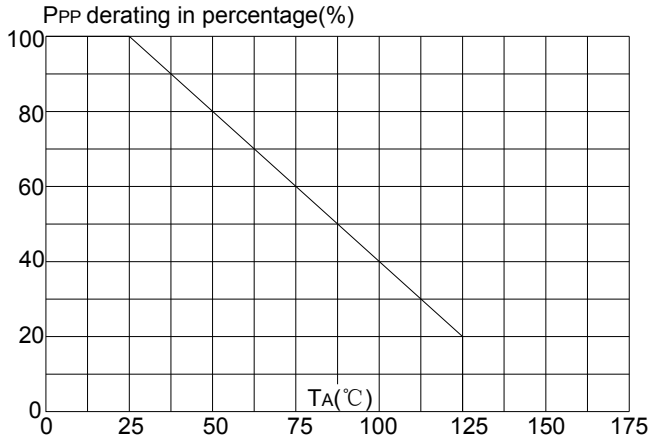
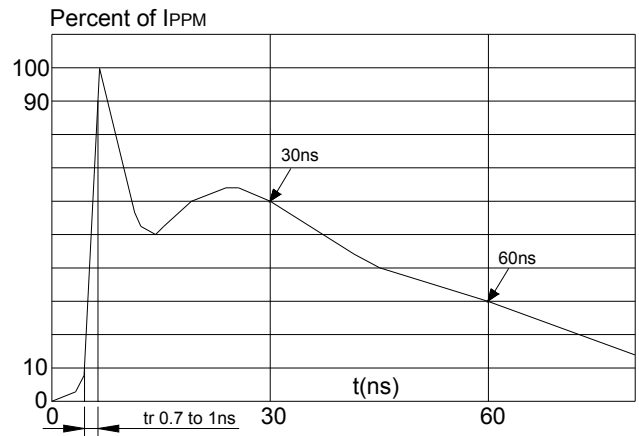




FIG.4: ESD clamping (20kV contact)



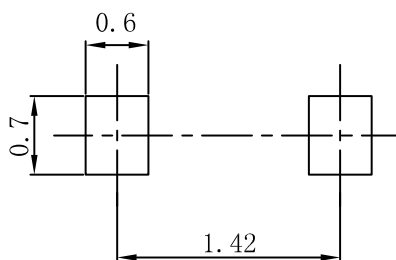
Pinning information

Pin	Simplified outline	Symbol
Bi-Directional		

Marking

Type number	Marking code
ESD5Z12C-Q1	12X

Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.