ESD3ZxxC-Q1 SERIES

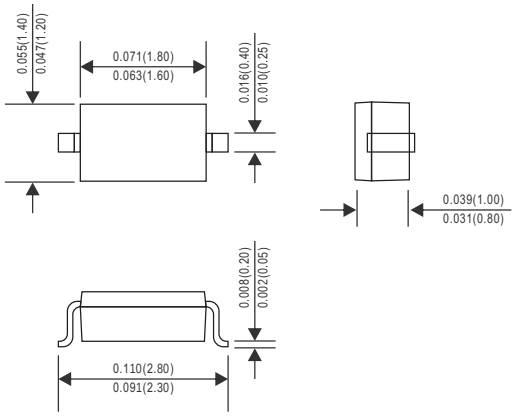
Surface Mount Bi-Directional TVS For ESD Protection Diode - 3.3V - 36V

Features

- This series is designed for average power 320W approximated ESD protection, different V_{RWM}, different peak pulse power available.
- Protects one I/O or power line.
- Low clamping voltage.
- Working voltages: 3.3V, 5.0V, 12V, 15V, 18V, 24V, 36V.
- Low leakage current.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228
- Compliant to Halogen-free.
- Suffix "-Q1" for AEC-Q101

Package outline

SOD-323



Dimensions in inches and (millimeters)

IEC compatibility

- IEC61000-4-2 (ESD) ±30kV (air), ±30kV(contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)

Applications

- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops, and Servers
- Portable Instrumentation

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, SOD-323
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Mounting Position : Any

Maximum ratings (at T_A=25°C unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	VALUE	UNIT
Total power dissipation	Peak pulse power (tp = 8/20us)	P_{PP}	320	W
Operating junction temperature range		T_J	-55 to +125	°C
Storage temperature range		T_{STG}	-55 to +150	°C

Electrical characteristics (at T_A=25°C unless otherwise noted)

Part No.	V_{RWM} (V) (Max.)	I_R(uA) @V_{RWM} (Max.)	V_{BR}(V) @I_T (Min.)	I_T (mA)	V_C(V) @I_{PP}=1.0A (Max.)	I_{PP} (A) (Max.)	V_C(V) @ I_{PP} (Max.)	C_J (pF) (Max.)
ESD3Z3.3C-Q1	3.3	1	3.6	1.0	/	30.0	15.0	80
ESD3Z5.0C-Q1	5.0	1	5.5	1.0	9.0	35.0	14.0	110
ESD3Z12C-Q1	12	1	13.3	1.0	19.0	12.0	33.0	45
ESD3Z15C-Q1	15	1	16.7	1.0	23.0	10.0	33.0	40
ESD3Z18C-Q1	18	1	20.0	1.0	29.0	10.0	35.0	60
ESD3Z24C-Q1	24	1	26.7	1.0	40.0	8.0	50.0	35
ESD3Z36C-Q1	36	0.2	40.0	1.0	60.0	6.0	70.0	25

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Typical characteristics (at T_A=25°C unless otherwise noted)

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

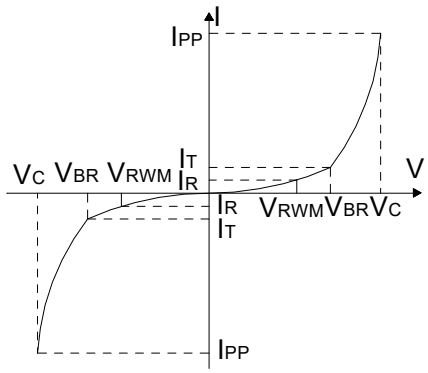


FIG.2: Pulse waveform (8/20μs)

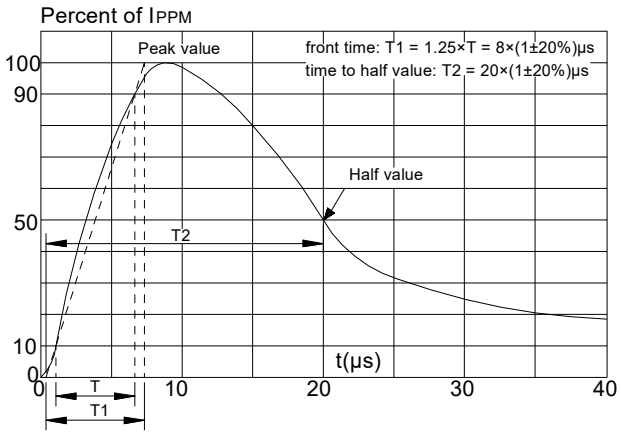


FIG.3: Pulse derating curve

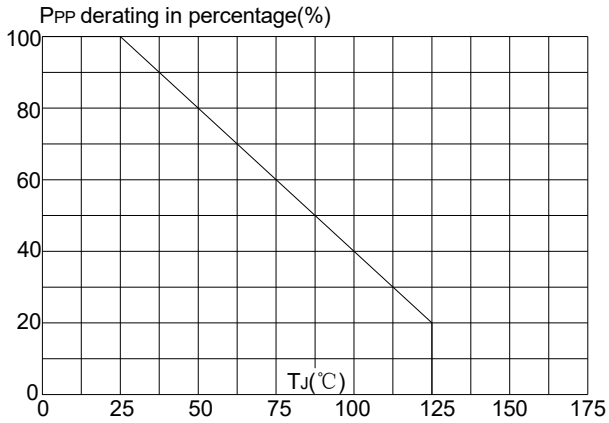
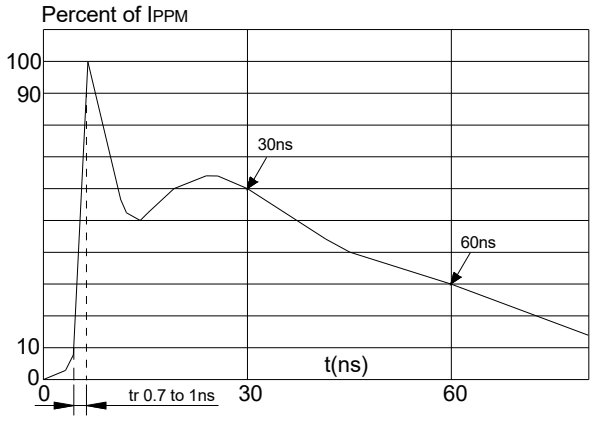


FIG.4: ESD clamping (30kV contact)



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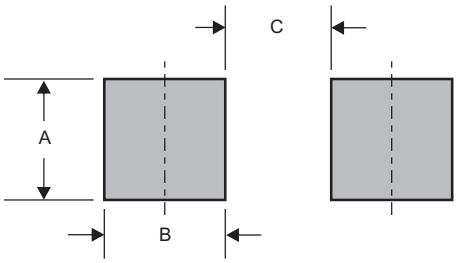
Pinning information

Pin	Simplified outline	Symbol
Bi-Directional		

Marking

Type number	Marking code
ESD3Z3.3C-Q1	03B/2A
ESD3Z5.0C-Q1	05B/3M
ESD3Z12C-Q1	12B/12C
ESD3Z15C-Q1	15B/2J
ESD3Z18C-Q1	18B./18C
ESD3Z24C-Q1	24B/M
ESD3Z36C-Q1	2N

Suggested solder pad layout



Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SOD-323	0.033 (0.83)	0.025 (0.63)	0.063 (1.60)