

Features

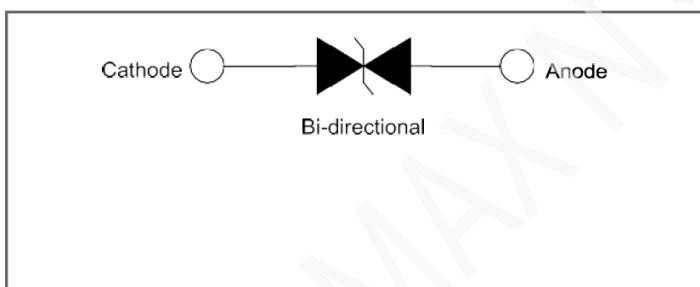
- ◆ 5000W peak pulse power capability at 10/1000 μ s waveform, repetition rate (duty cycles):0.01%
- ◆ Low clamping capability **nCLAMP™**
- ◆ Typical failure mode is a short circuit condition for current events exceeding component rating
- ◆ Plastic package is flammability rated V-0 per UL-94
- ◆ Meet MSL level1, per J-STD-020, lead-frame maximum peak of 260° C



Applications

This low clamp TVS series are ideal for the transient voltage clamp protection of I/O Interfaces, DC power line bus and other circuits used in Telecom electronic applications

Function Diagram



Maximum Ratings and Thermal Characteristics (TA=25°C unless otherwise noted)			
Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at TA=25°C by 10/1000 μ s Waveform	P _{PPM}	5000	W
Power Dissipation on Infinite Heat Sink at TL=50°C	P _D	6.5	W
Operating Temperature Range	T _J	-55 to 150	°C
Storage Temperature Range	T _{STG}	-55 to 150	°C

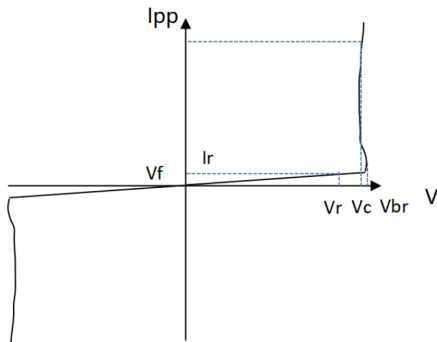
Notes:

1. Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle=4 per minute maximum.

Characteristics (T = 25°C unless otherwise noted)

Part Number (Bi)	Key Marking	Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (Volts) @ I_T		Test Current I_T (mA)	Maximum Clamping Voltage V_C @ I_{PP} (V)	Maximum Peak Pulse Current I_{PP} (A)10/1000 μ S	Maximum Clamping Voltage V_C @ I_{PP} (V)	Maximum Peak Pulse Current I_{PP} (A)8/20 μ S	Maximum Reverse Leakage I_R @ V_R (μ A)
			MIN	MA						
5.0SMDJ58CA-FL	5D058FL	58	64.4	71.2	1	74	71.4	82	1000	2
5.0SMDJ64CA-FL	5D064FL	64	71.1	78.6	1	83	60.2	88	910	2
5.0SMDJ70CA-FL	5D070FL	70	77.8	86.0	1	91	55.0	96	830	2
5.0SMDJ78CA-FL	5D078FL	78	86.7	95.8	1	101	49.5	107	740	2
5.0SMDJ85CA-FL	5D085FL	85	94.4	104.0	1	109	40.15	114	480	2
5.0SMDJ90CA-FL	5D090FL	90	100.0	111.0	1	117	34.3	122	425.5	2

I-V Curve Characteristics



P_{PPM} Peak Pulse Power Dissipation -- Max power dissipation

V_R Stand-off Voltage -- Maximum voltage that can be applied to the TVS without operation

V_{BR} Breakdown Voltage -- Maximum voltage that flows though the TVS at a specified test current (I_T)

V_C Clamping Voltage -- Peak voltage measured across the TVS at a specified IPPM (peak impulse current) I_R

Reverse Leakage Current -- Current measured at V_R

Ratings and Characteristic Curves (T = 25°C unless otherwise noted)

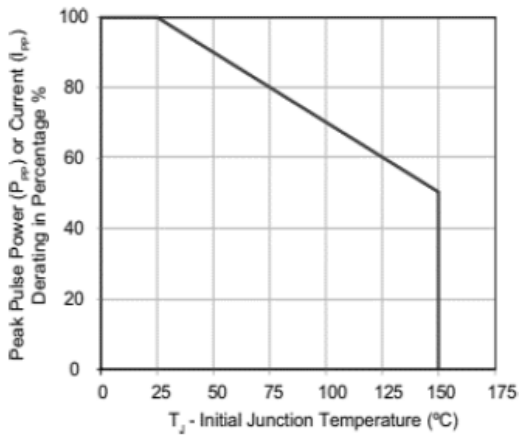


Figure 1. Peak pulse power derating curve

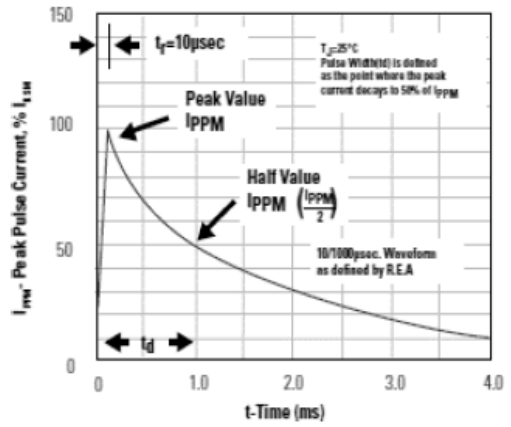


Figure 2. Pulse waveform

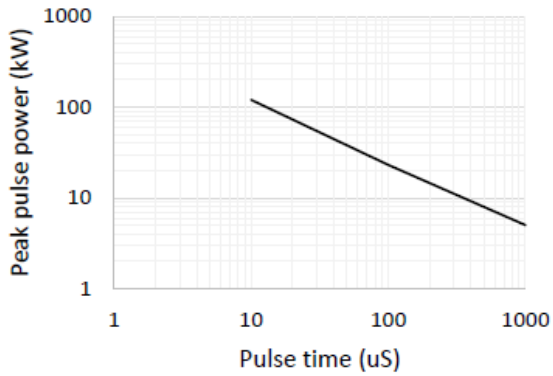


Figure 3. Peak pulse power rating curve

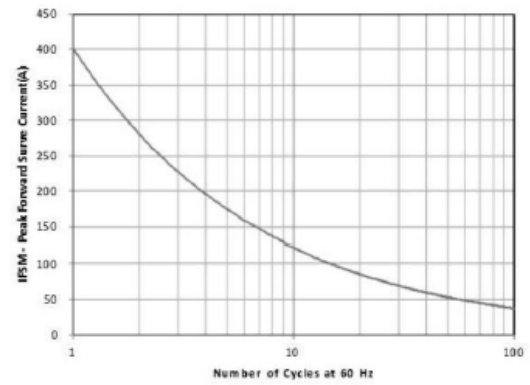
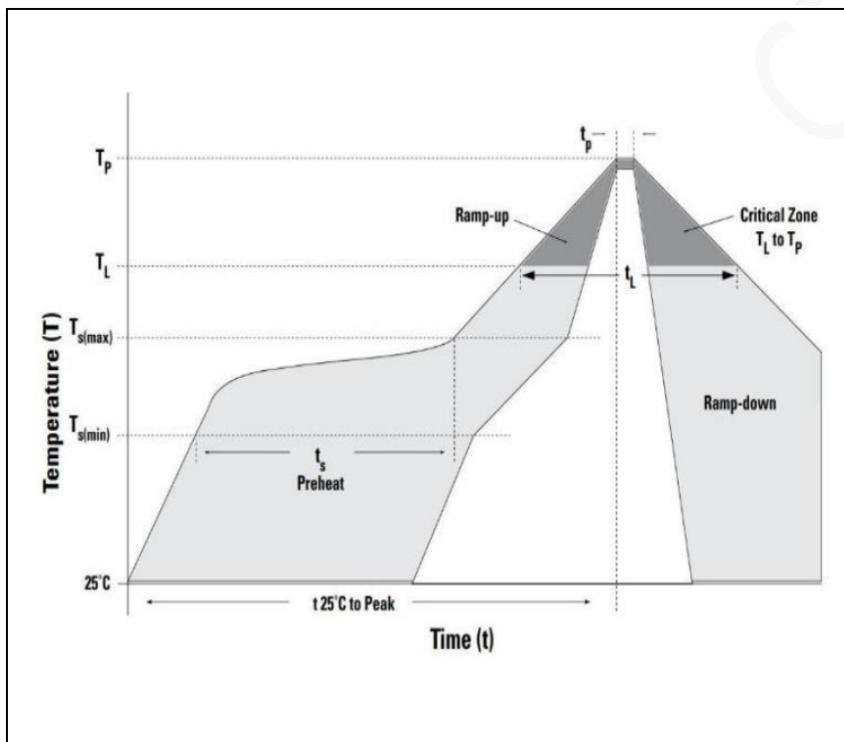


Figure 4. Maximum non-repetitive surge current

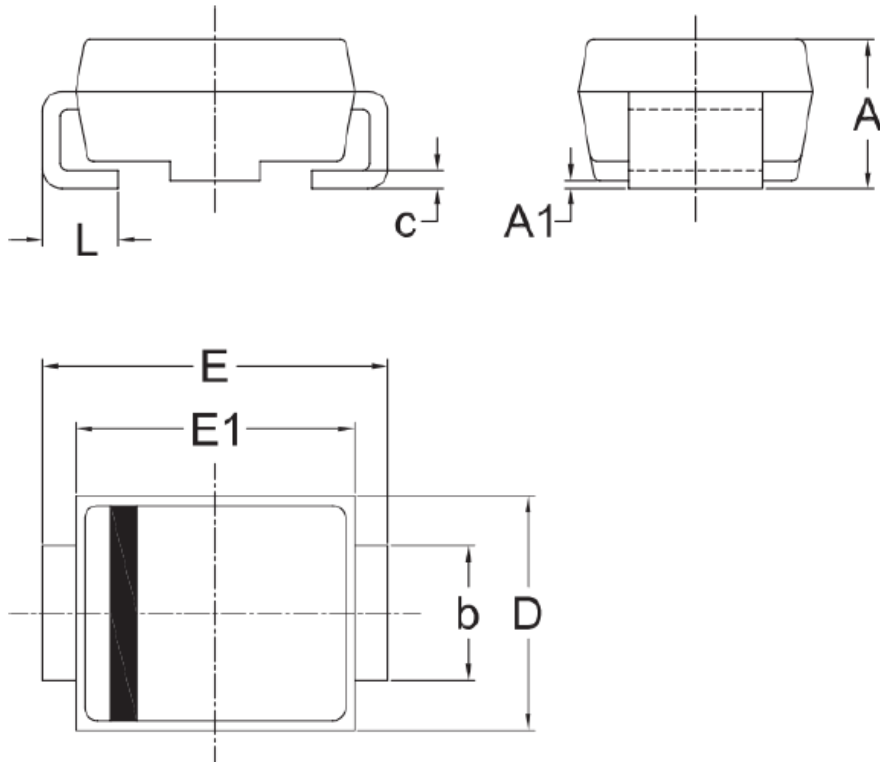
Soldering Parameters

Reflow Condition		Lead-free assembly
Pre Heat	- Temperature Min ($T_{s(min)}$)	150°C
	- Temperature Max ($T_{s(max)}$)	200°C
	- Time (min to max) (t_s)	60 – 120 secs
Average ramp up rate (Liquidus Temp (T_A) to peak)		3°C/second max
$T_{s(max)}$ to T_A - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_A) (Liquidus)	217°C
	- Time (min to max) (t_s)	60 – 150 seconds
Peak Temperature (T_P)		260 ^{+0/-5} °C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_P)		8 minutes Max.
Do not exceed		260°C

Soldering profile



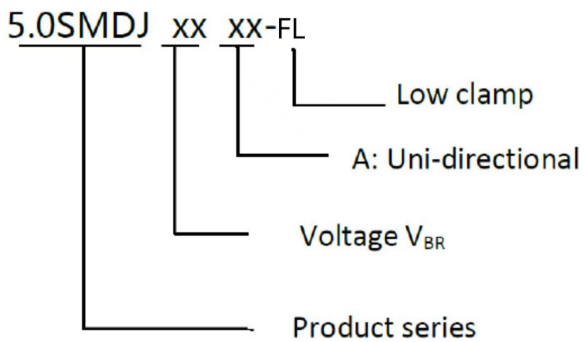
Dimensions



Unit	A	A1	b	c	D	E	E1	L
mm	MAX 2.83	0.30	3.10	0.25	6.15	8.15	7.05	1.60
	MIN 2.33	0.00	2.80	0.15	5.85	7.65	6.75	0.90

Remark :Dimensions D and E1 do not include mold flash & gate remain.

Part Numbering



Part Marking

Product Type Marking Code

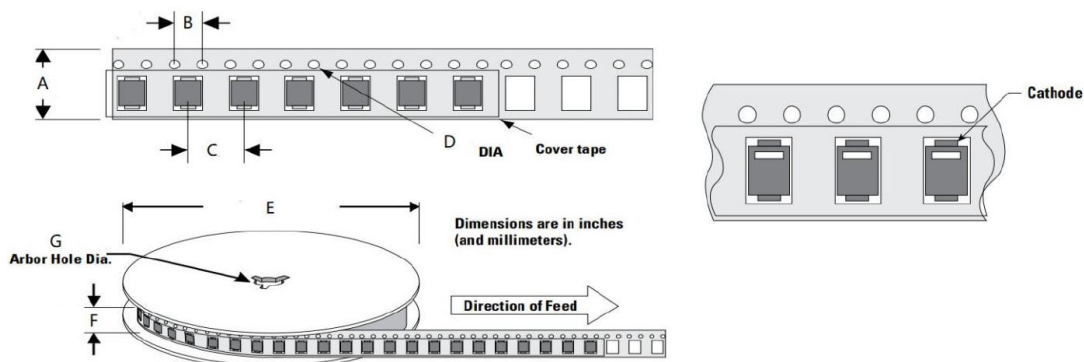


Cathode band
(for uni-directional products only)

Packing

Part number	Package name	Small packing quantity	Packing method
5.0SMDJXXXX-FL	DO-214AB	3000	Tape & Reel

Tape and Reel Specification



Symbol	Millimeter
A	16.00 ± 0.10
B	4.00 ± 0.10
C	8.00 ± 0.10
D	1.55 ± 0.05
E	330.20 ± 2.00
F	19.70 ± 2.00
G	13.30 ± 0.30

Revision history of Specification

Version	Change Items	Effective Date
1.0	Initial Release	8-18-2022
1.1	Add New Model	5-3-2023