

HIGH POWER TVS ARRAY



DO-218AB

APPLICATIONS

- Digital Audio Tuner for Automotive
- Automotive Entertainment Systems
- Automotive Navigation Systems



FEATURES

- Junction Passivation Optimized Design Passivated Anisotropic Rectifier Technology
- $T_j = 175^\circ\text{C}$ Capability Suitable for High Reliability and Automotive Requirements
- Unidirectional Configuration
- Low Forward Voltage Drop
- High Surge Capability
- 3600 Watts Peak Pulse Power per Line ($t_p = 10/1000\mu\text{s}$)
- Meets ISO7637-2 Surge Specification (Varied by Test Condition)
- Meets MSL Level 1, Per J-STD-020, LF Maximum Peak of 245°C
- Available in Multiple Voltages
- RoHS Compliant
- REACH Compliant

MECHANICAL CHARACTERISTICS

- Case: DO-218AB Package
- Terminals: Matte Tin Plated Leads, Solderable Per J-STD-002 and JESD 22-B102
- Approximate Weight: 2.7 grams
- Solder Reflow Temperature - 260°C for 10 seconds at terminals
- 24mm Tape and Reel Per EIA Standard 481
- Flammability Rating UL 94V-0
- Polarity: Heatsink is Anode

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

PARAMETER	SYMBOL	VALUE	UNITS
Operating Junction Temperature	T_j	-55 to 175	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 to 175	$^\circ\text{C}$
Peak Pulse Power Dissipation ($t_p = 10/1000\mu\text{s}$)	P_{PPM}	3600	Watts
Peak Pulse Power Dissipation ($t_p = 10/10000\mu\text{s}$)	P_{PPM}	2800	Watts
Peak Forward Surge Current, 8.3ms single half sinewave	I_{FSM}	500	Amps
Power Dissipation on Infinite Heatsink, $T_c = 25^\circ\text{C}$ (Figure 2)	P_D	5.0	Watts
Typical Thermal Resistance, Junction to Case	$R_{\theta\text{JC}}$	0.95	$^\circ\text{C}/\text{W}$

TYPICAL DEVICE CHARACTERISTICS

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

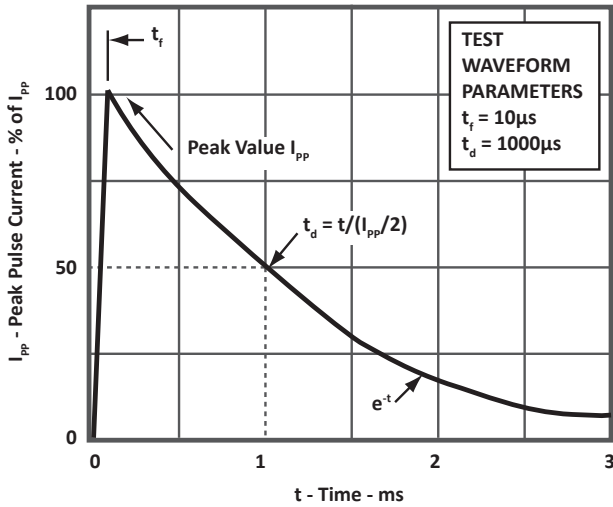
PART NUMBER (Note 1)	REVERSE STAND-OFF VOLTAGE V_{RWM} VOLTS	BREAKDOWN VOLTAGE $V_{(BR)}$ @ I_T VOLTS		TEST CURRENT @ I_T mA	MAXIMUM CLAMPING VOLTAGE (Fig. 1) @ I_p V_c VOLTS	MAXIMUM REVERSE SURGE CURRENT @ I_{PP} AMPS	MAXIMUM REVERSE LEAKAGE CURRENT @ V_{RWM} I_R μA	MAXIMUM REVERSE LEAKAGE CURRENT @ V_{RWM} 175°C I_R μA
		MIN	MAX					
SM5S14A	14.0	15.6	17.2	5.0	23.2	155	10	150
SM5S15A	15.0	16.7	18.5	5.0	24.4	148	10	150
SM5S16A	16.0	17.8	19.7	5.0	26.0	138	10	150
SM5S17A	17.0	18.9	20.9	5.0	27.6	130	10	150
SM5S18A	18.0	20.0	22.1	5.0	29.2	123	10	150
SM5S20A	20.0	22.2	24.5	5.0	32.4	111	10	150
SM5S22A	22.0	24.4	26.9	5.0	35.5	101	10	150
SM5S24A	24.0	26.7	29.5	5.0	38.9	93	10	150
SM5S26A	26.0	28.9	31.9	5.0	42.1	86	10	150
SM5S28A	28.0	31.1	34.4	5.0	45.4	79	10	150
SM5S30A	30.0	33.3	36.8	5.0	48.4	74	10	150
SM5S33A	33.0	36.7	40.6	5.0	53.3	68	10	150
SM5S36A	36.0	40.0	44.2	5.0	58.1	62	10	150

NOTES

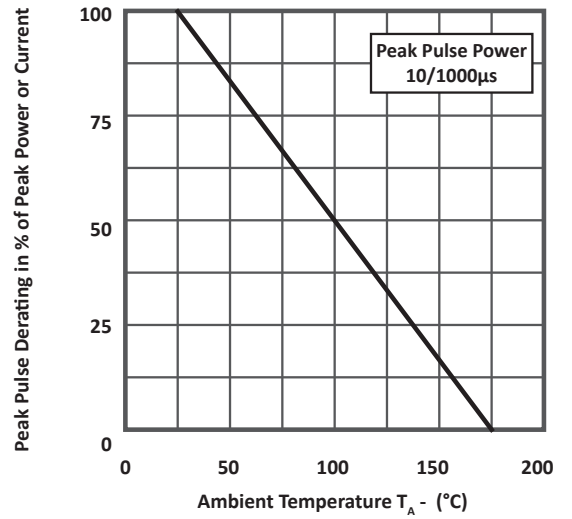
1. For all types, maximum VF = 2.0V at IF 100A, measured on 8.3ms single half-sine wave or equivalent square wave. Maximum duty cycle = 4 pulses per minute.

TYPICAL DEVICE CHARACTERISTICS

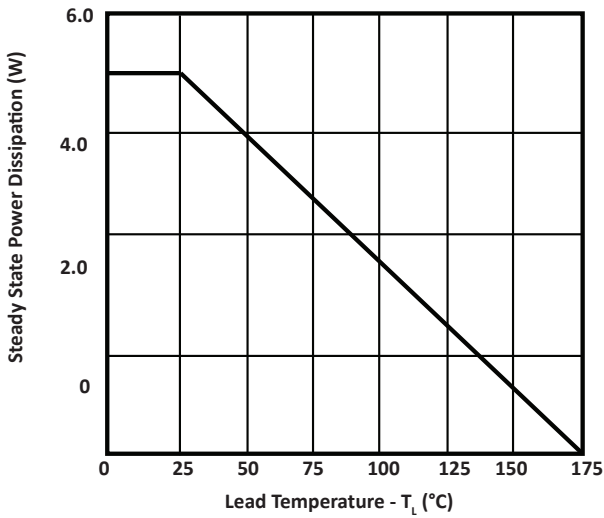
**FIGURE 1
PULSE WAVEFORM**



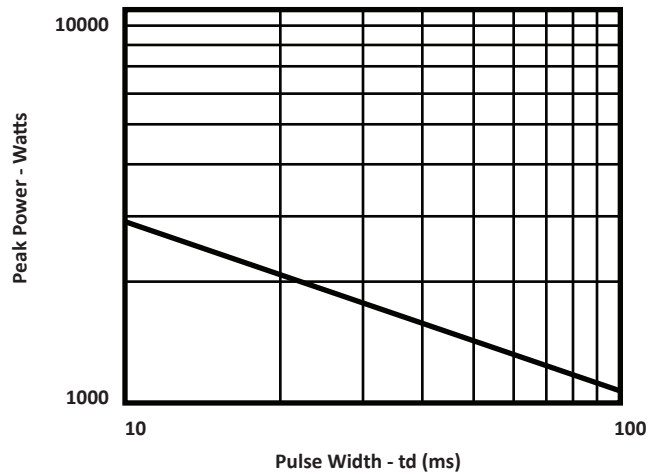
**FIGURE 2
PULSE DERATING CURVE**



**FIGURE 3
STEADY STATE POWER DERATING CURVE**



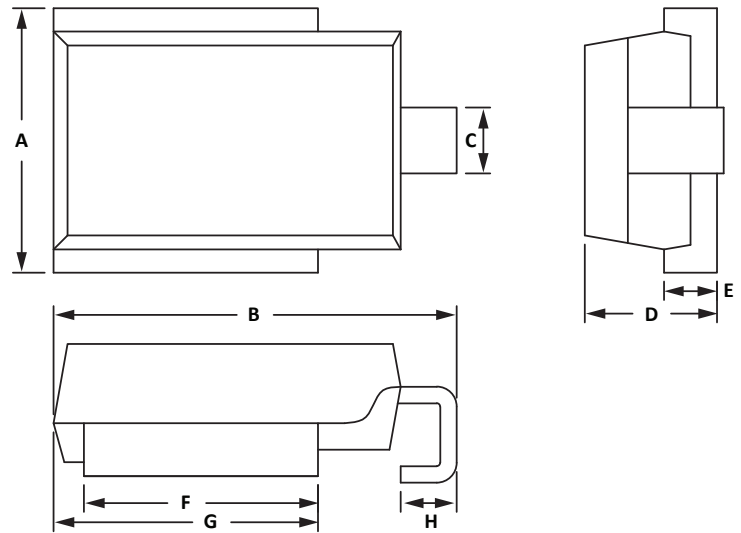
**FIGURE 4
PEAK PULSE POWER RATING CURVE**



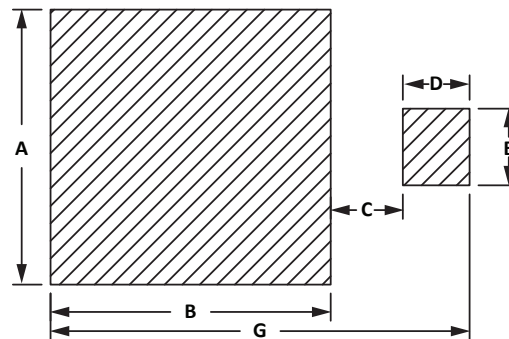
PACKAGE INFORMATION

OUTLINE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	9.50	10.50	0.374	0.413
B	15.00	16.00	0.591	0.630
C	2.30	2.90	0.090	0.114
D	4.80	5.20	0.189	0.205
E	1.95	2.11	0.077	0.083
F	8.70	9.30	0.342	0.366
G	9.70	10.30	0.382	0.405
H	1.70	2.70	0.067	0.106

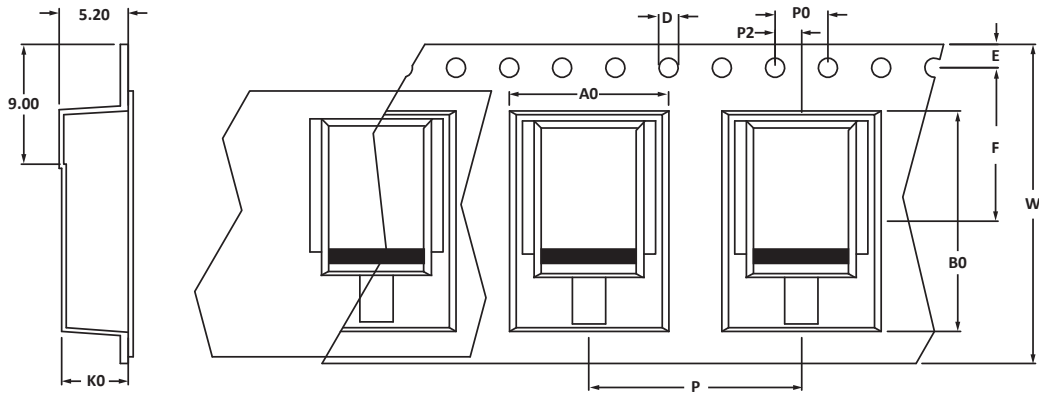
NOTES
1. Dimensions are exclusive of mold flash and metal burrs.



PAD LAYOUT DIMENSIONS		
DIM	MILLIMETERS	INCHES
	NOM	NOM
A	11.0	0.433
B	9.5	0.374
C	3.3	0.130
D	3.0	0.118
E	3.5	0.137
G	15.8	0.662



TAPE AND REEL



SPECIFICATIONS

REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P2	P
330mm (13")	24mm	12.00 ± 0.10	16.60 ± 0.10	5.00 ± 0.10	1.50 ± 0.10	1.75 ± 0.10	11.55 ± 0.05	24.00 ± 0.30	4.00 ± 0.12	2.00 ± 0.10	16.00 ± 0.10

NOTES

- Dimensions are in millimeters.
- Surface mount product is taped and reeled in accordance with EIA-481.
- Marking on Part - part number, date code, logo and polarity band.

ORDERING INFORMATION

BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
SM5Sxx	N/A	-T500	500	13"	N/A
SM5Sxx	N/A	-T750	750	13"	N/A

This device is only available in a Lead-Free configuration.

COMPANY INFORMATION

COMPANY PROFILE

In business more than 20 years, ProTek Devices™ is a privately held semiconductor company. The company offers a product line of overvoltage protection and overcurrent protection components. These include transient voltage suppressor array (TVS arrays) avalanche breakdown diode, steering diode TVS array and electronics SMD chip fuses. These components deliver circuit protection in electronic systems from numerous overvoltage and overcurrent events. They include lightning; electrostatic discharge (ESD); nuclear electromagnetic pulses (NEMP); inductive switching; and electromagnetic interference (EMI) / radio frequency interference (RFI). ProTek Devices also offers LED wafer die for ESD protection and related high frequency products.

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