

HIGH POWER TVS ARRAY



APPLICATIONS

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

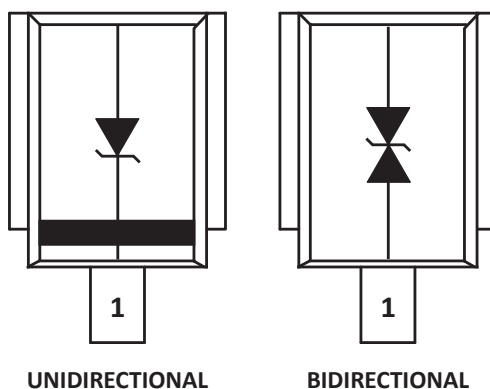
FEATURES

- 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
- 6600 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: 2.58 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

PIN CONFIGURATIONS



TYPICAL DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

PARAMETER	SYMBOL	VALUE	UNITS
Operating Junction Temperature	T_J	-55 to 175	°C
Storage Temperature	T_{STG}	-55 to 175	°C
Peak Pulse Power Dissipation ($t_p = 10/1000\mu s$)	P_{PPM}	6600	Watts
Peak Forward Surge Current, 8.3ms single half sinewave (Unidirectional Only)	I_{FSM}	700	Amps
Power Dissipation on Infinite Heatsink, $T_c = 25^\circ C$ (Figure 2)	P_D	8.0	Watts
Typical Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.90	°C/W

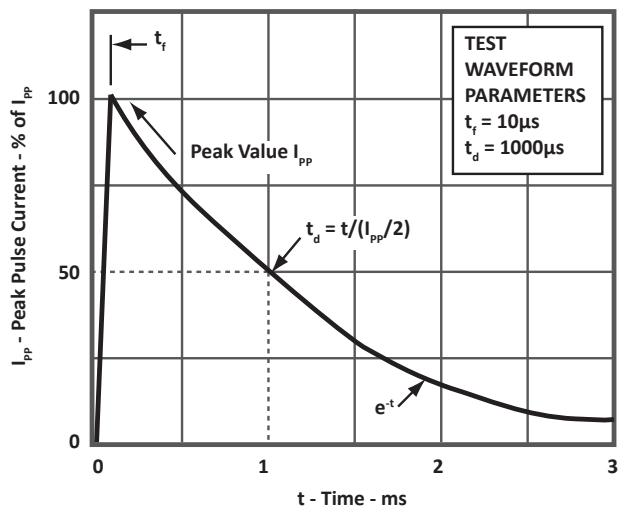
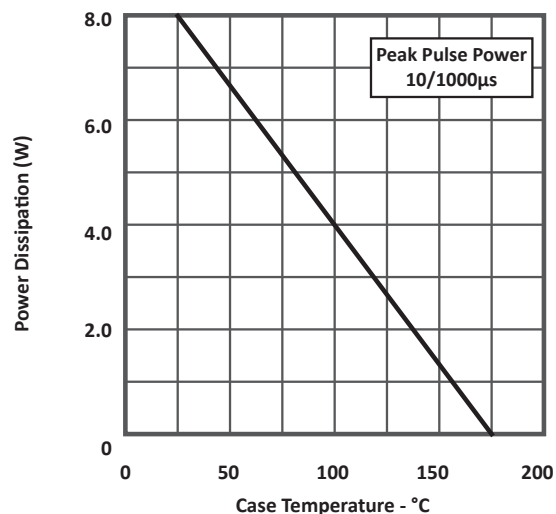
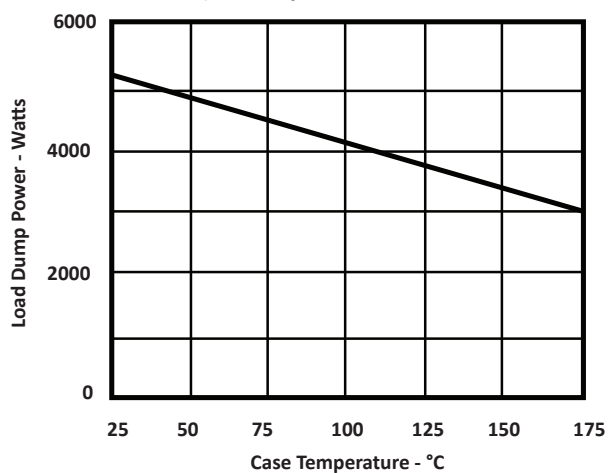
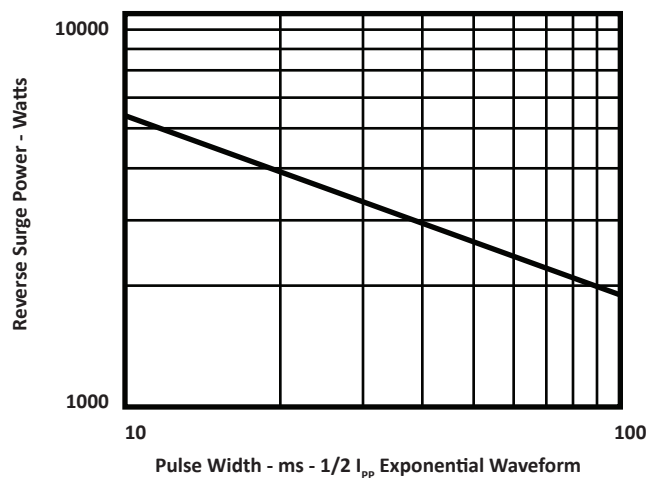
ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER (Notes 1-2)	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 $@ V_{RWM}$ I_R μA 175°C
		MIN	MAX					
SM8S10A	10.0	11.1	12.3	5.0	17.0	388	15	250
SM8S11A	11.0	12.2	13.5	5.0	18.2	363	10	150
SM8S12A	12.0	13.3	14.7	5.0	19.9	332	10	150
SM8S13A	13.0	14.4	15.9	5.0	21.5	307	10	150
SM8S14A	14.0	15.6	17.2	5.0	23.2	284	10	150
SM8S15A	15.0	16.7	18.5	5.0	24.4	270	10	150
SM8S16A	16.0	17.8	19.7	5.0	26.0	254	10	150
SM8S17A	17.0	18.9	20.9	5.0	27.6	239	10	150
SM8S18A	18.0	20.0	22.1	5.0	29.2	226	10	150
SM8S20A	20.0	22.2	24.5	5.0	32.4	204	10	150
SM8S22A	22.0	24.4	26.9	5.0	35.5	186	10	150
SM8S24A	24.0	26.7	29.5	5.0	38.9	170	10	150
SM8S26A	26.0	28.9	31.9	5.0	42.1	157	10	150
SM8S28A	28.0	31.1	34.4	5.0	45.4	145	10	150
SM8S30A	30.0	33.3	36.8	5.0	48.4	136	10	150
SM8S33A	33.0	36.7	40.6	5.0	53.3	124	10	150
SM8S36A	36.0	40.0	44.2	5.0	58.1	114	10	150

NOTES

- For all types, maximum VF = 1.8V at IF 100A, measured on 8.3ms single half-sine wave or equivalent square wave. Maximum duty cycle = 4 pulses per minute.
- Add suffix 'C' or 'CA' after part number to specify a bidirectional device.

TYPICAL DEVICE CHARACTERISTICS

 FIGURE 1
 PULSE WAVEFORM

 FIGURE 2
 POWER DERATING CURVE

 FIGURE 3
 LOAD DUMP POWER CHARACTERISTICS
 (10ms Exponential Waveform)

 FIGURE 4
 REVERSE POWER CAPABILITY


TYPICAL DEVICE CHARACTERISTICS

FIGURE 5
TYPICAL TRANSIENT IMPEDANCE

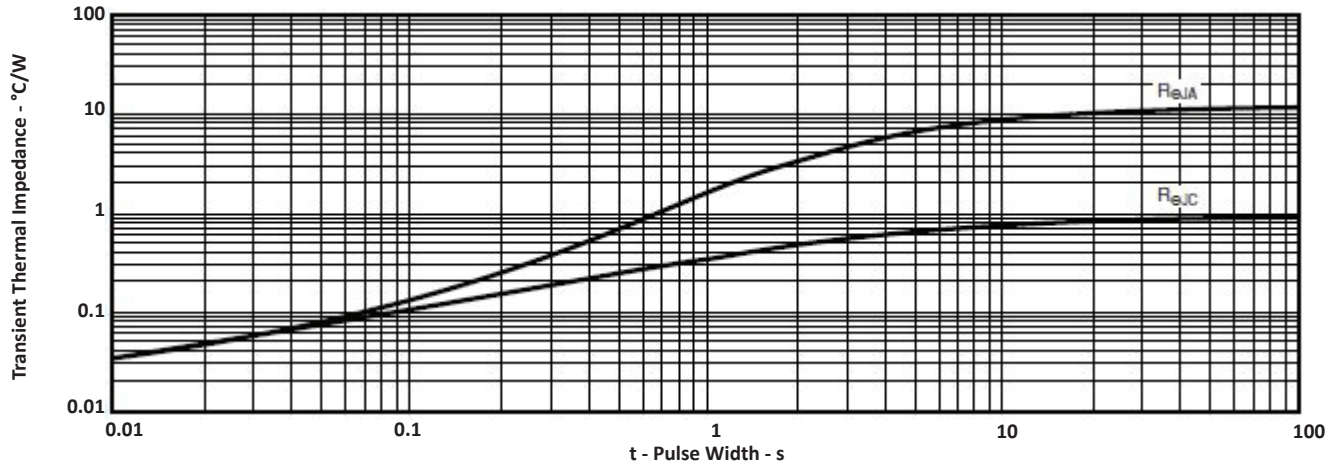
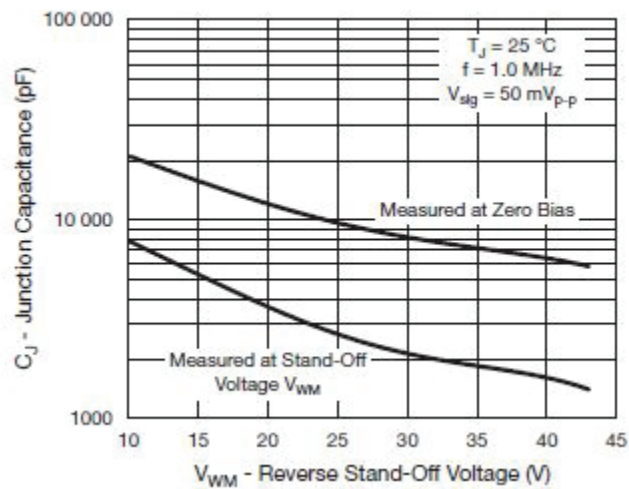
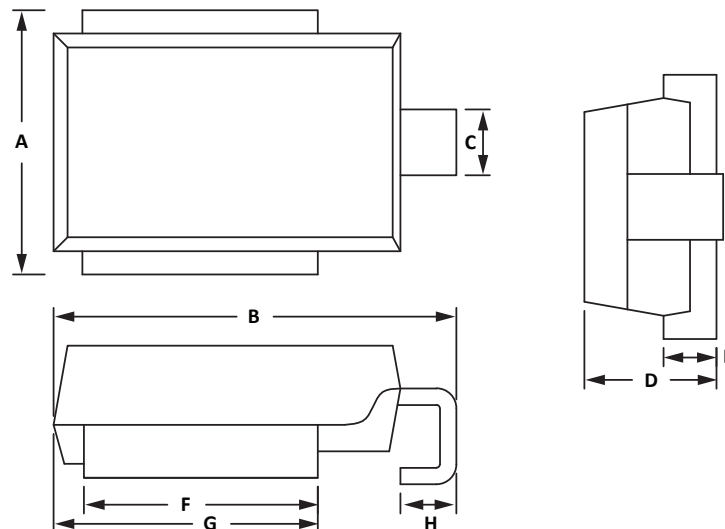


FIGURE 6
TYPICAL JUNCTION CAPACITANCE

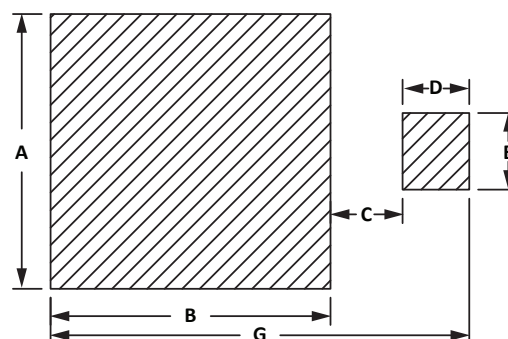


PACKAGE INFORMATION

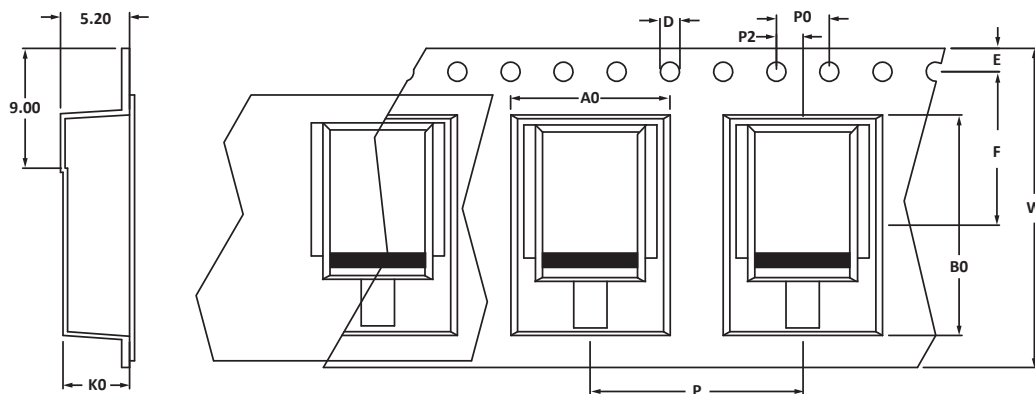
OUTLINE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	9.50	10.50	0.374	0.413
B	15.00	16.00	0.591	0.630
C	2.30	2.90	0.090	0.114
D	4.80	5.20	0.189	0.205
E	1.95	2.11	0.077	0.083
F	8.70	9.30	0.342	0.366
G	9.70	10.30	0.382	0.405
H	1.70	2.70	0.067	0.106
NOTES 1. Dimensions are exclusive of mold 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

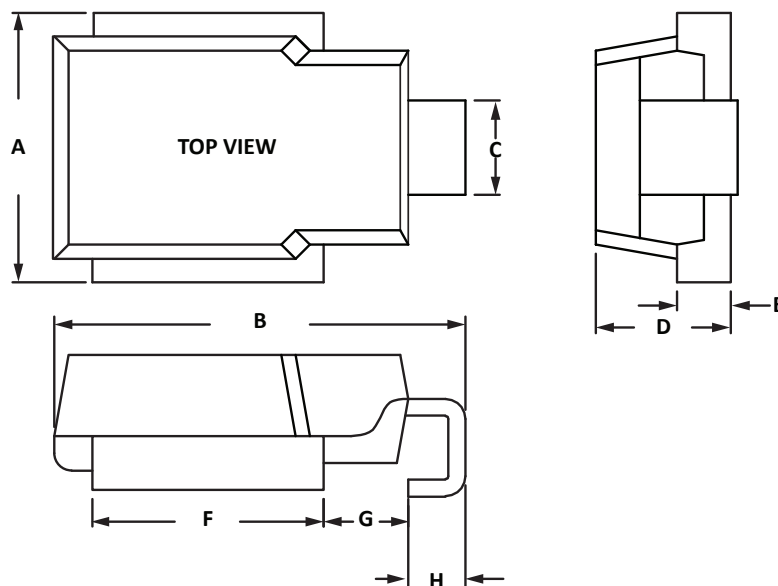
1. Dimensions are in millimeters.
2. Surface mount product is taped and reeled in accordance with EIA-481.
3. Marking on Part - part number, date code, logo and polarity band.

PACKAGE INFORMATION

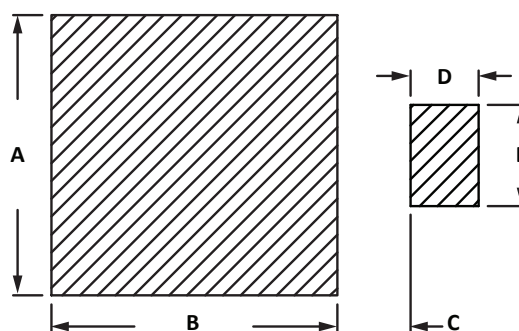
ALTERNATE PACKAGE

OUTLINE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	9.50	10.50	0.374	0.413
B	15.00	16.00	0.592	0.628
C	2.40	3.00	0.094	0.118
D	4.70	5.10	0.185	0.201
E	1.90	2.10	0.075	0.083
F	8.50	9.10	0.335	0.358
G	3.55	3.75	0.139	0.147
H	1.95	2.20	0.076	0.086

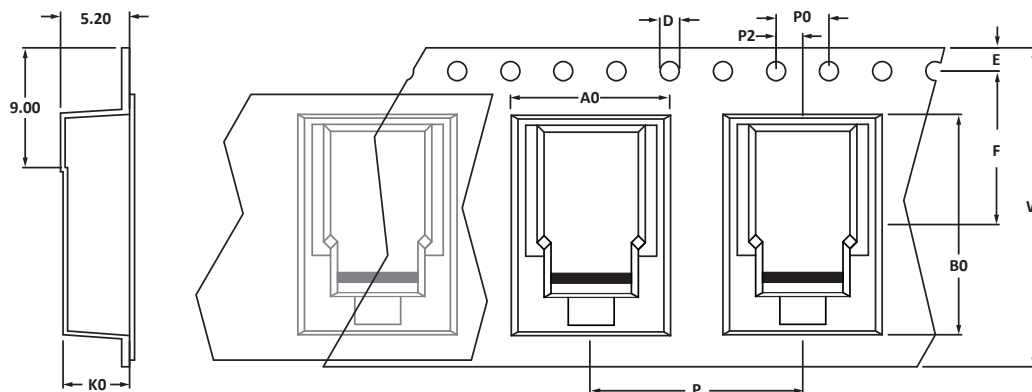
NOTES
 1. Dimensions are exclusive of mold flash and metal burrs.



PAD LAYOUT				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	10.49	10.65	0.413	0.419
B	10.69	10.85	0.421	0.427
C	2.69	2.85	0.106	0.112
D	2.49	2.65	0.098	0.104
E	3.73	3.88	0.147	0.153



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

1. Dimensions are in millimeters.
2. Surface mount product is taped and reeled in accordance with EIA-481.
3. 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
SM8Sxx	N/A	-T500	500	13"	N/A
SM8Sxx	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 30 years, ProTek Devices™ is a privately held semiconductor company. The company offers a product line of overvoltage protection that include Transient Voltage Suppressor (TVS) Arrays, Steering Diode Array Hybrids, High-power Components and Modules, as well as Steering Diodes, EMI Filter/TVS Arrays and Thyristor Surge Suppressors. These components deliver circuit protection in electronic systems from numerous overvoltage events. They include lightning; electrostatic discharge (ESD); nuclear electromagnetic pulses (NEMP); inductive switching; and electromagnetic interference (EMI) / radio frequency interference (RFI). ProTek Devices is an ISO 9001 certified company.

CONTACT US

Corporate Headquarters

2929 South Fair Lane
Tempe, Arizona 85282
USA

By Telephone

General: 602-431-8101
Sales: & Marketing: 602-414-5109
Customer Service: 602-414-5114
Product Technical Support: 602-414-5107

By Fax

General: 602-431-2288

By E-mail:

Asia Sales: asiasales@protekdevices.com
Europe Sales: europesales@protekdevices.com
U.S. Sales: ussales@protekdevices.com
Distributor Sales: distysales@protekdevices.com
Customer Service: service@protekdevices.com
Technical Support: support@protekdevices.com

ProTek Devices (Asia Pacific) Pte. Ltd.

8 Ubi Road 2, #06-19
Zervex
Singapore - 408538
Tel: +65-67488312
Fax: +65-67488313

Web

www.protekdevices.com

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