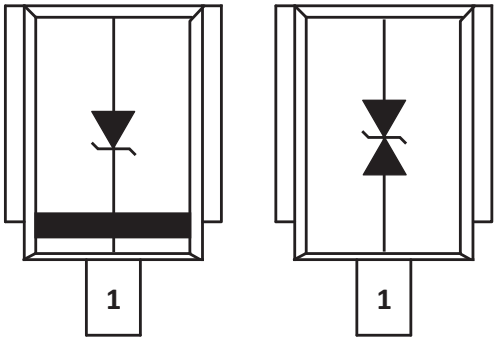
HIGH POWER TVS ARRAY

DO-218AB

APPLICATIONS

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



UNIDIRECTIONAL BIDIRECTIONAL

FEATURES

- AEC-Q101 Qualified
- UL Registered
- Junction Passivation Optimized Design Passivated Anisotropic Rectifier Technology
- T_J = 175°C Capability Suitable for High Reliability and Automotive Requirements
- Unidirectional and Bidirectional Configurations
- Low Forward Voltage Drop
- High Surge Capability
- 6600 Watts Peak Pulse Power per Line (tp = 10/1000µs)
- Meets ISO 16750-2 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

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 (tp =10/1000µs)	P_{PPM}	6600	Watts
Peak Forward Surge Current, 8.3ms single half sinewave (Unidirectional Only)	I_{FSM}	700	Amps
Power Dissipation on Infinite Heaksink, T_C = 25°C (Figure 2)	P_D	8.0	Watts
Typical Thermal Resistance, Junction to Case	$R_{\Theta JC}$	0.90	°C/W

TYPICAL DEVICE CHARACTERISTICS

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER (Note 1 - 3)	MARKING CODE	REVERSE STAND-OFF VOLTAGE V_{RWM} VOLTS	BREAKDOWN VOLTAGE $V_{(BR)}$ @ I_T VOLTS MIN	BREAKDOWN VOLTAGE $V_{(BR)}$ @ I_T VOLTS MAX	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
PAM8S14A	SM8S14A	14.0	15.6	17.2	5.0	23.2	284	10	150
PAM8S15A	SM8S15A	15.0	16.7	18.5	5.0	24.4	270	10	150
PAM8S16A	SM8S16A	16.0	17.8	19.7	5.0	26.0	254	10	150
PAM8S17A	SM8S17A	17.0	18.9	20.9	5.0	27.6	239	10	150
PAM8S18A	SM8S18A	18.0	20.0	22.1	5.0	29.2	226	10	150
PAM8S20A	SM8S20A	20.0	22.2	24.5	5.0	32.4	204	10	150
PAM8S22A	SM8S22A	22.0	24.4	26.9	5.0	35.5	186	10	150
PAM8S24A	SM8S24A	24.0	26.7	29.5	5.0	38.9	170	10	150
PAM8S26A	SM8S26A	26.0	28.9	31.9	5.0	42.1	157	10	150
PAM8S28A	SM8S28A	28.0	31.1	34.4	5.0	45.4	145	10	150
PAM8S30A	SM8S30A	30.0	33.3	36.8	5.0	48.4	136	10	150
PAM8S33A	SM8S33A	33.0	36.7	40.6	5.0	53.3	124	10	150
PAM8S36A	SM8S36A	36.0	40.0	44.2	5.0	58.1	114	10	150

NOTES

1. Surge current waveform is defined as 10/1000µs waveform.
2. 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.
3. Part numbers shown are unidirectional devices. Add a "CA" suffix to specify bidirectional devices, such as PAM8S36**CA**.

TYPICAL DEVICE CHARACTERISTICS

FIGURE 1
PULSE WAVEFORM

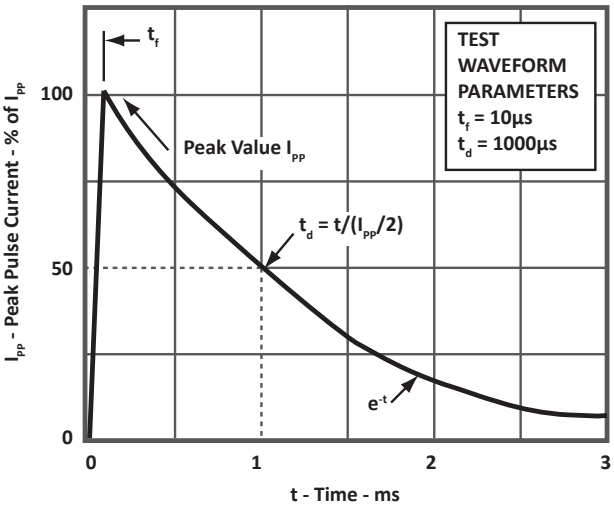


FIGURE 2
POWER DERATING CURVE

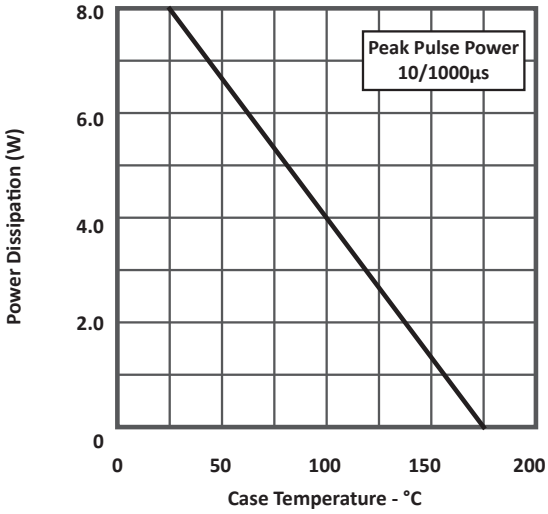


FIGURE 3
LOAD DUMP POWER CHARACTERISTICS
(10ms Exponential Waveform

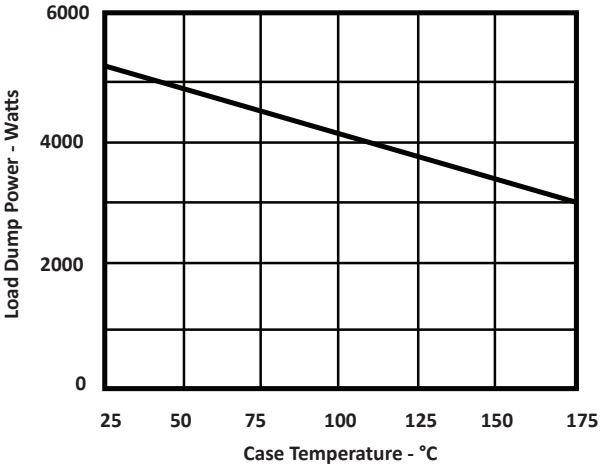
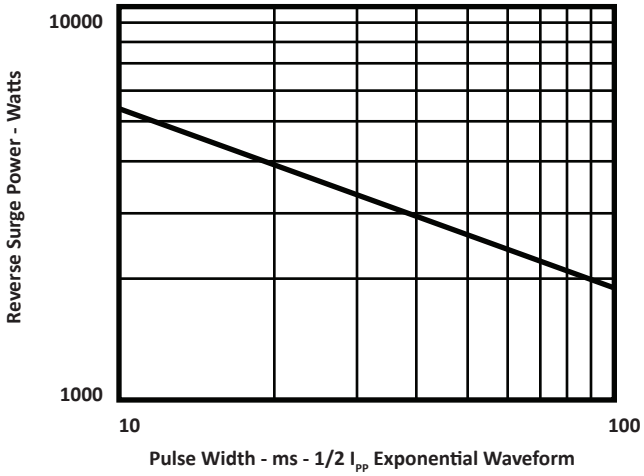


FIGURE 4
REVERSE POWER CAPABILITY



TYPICAL DEVICE CHARACTERISTICS

FIGURE 5
TYPICAL TRANSIENT IMPEDANCE

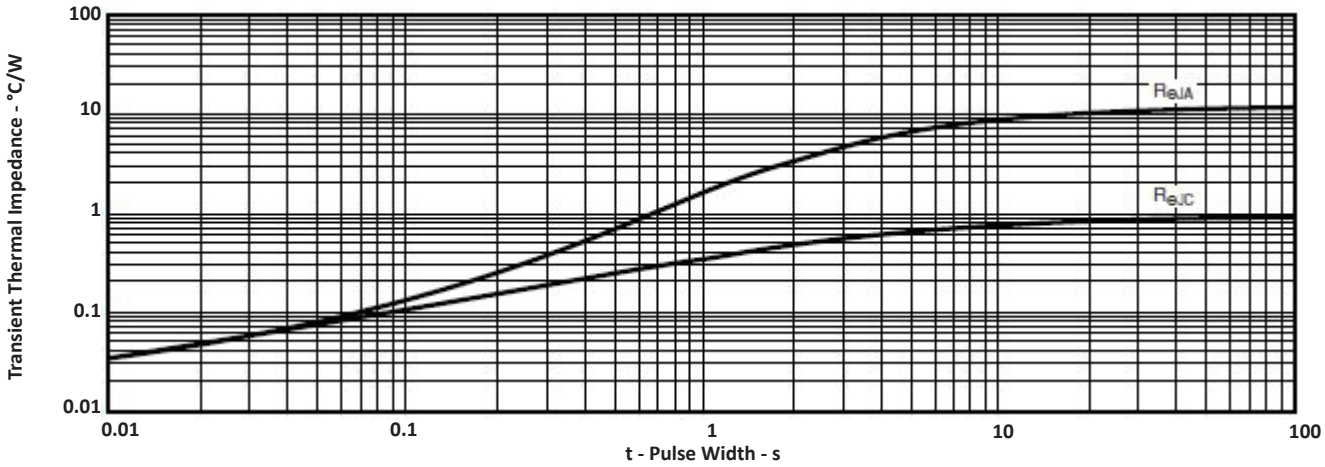
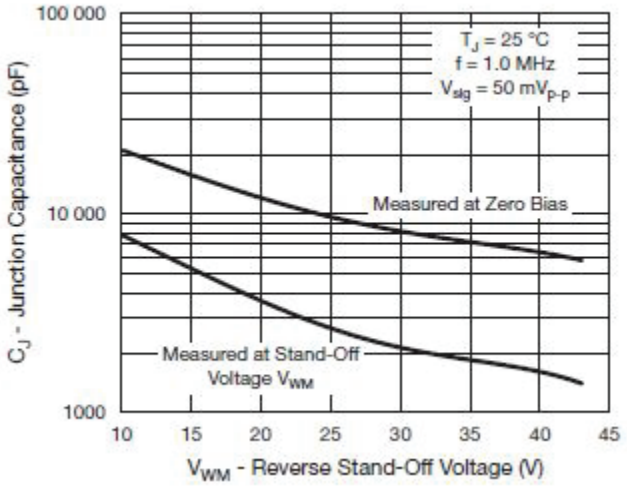


FIGURE 6
TYPICAL JUNCTION CAPACITANCE



TYPICAL DEVICE CHARACTERISTICS

TYPICAL LOAD DUMP CHARACTERISTICS - PAM8S33A				
S.NO	TIME	I_{PP}	V_C	Ri@151 (10 Hits)
1	350 ms	30	48.4	3.42 Ohm

NOTES
1. Devices tested: 5, Forced Current: 30A, Number passed: 5

FIGURE 6
CLAMPED WAVEFORM FOR PAM8S33A
I_{PP} = 30A, V_C = 47.6V, 1st HIT

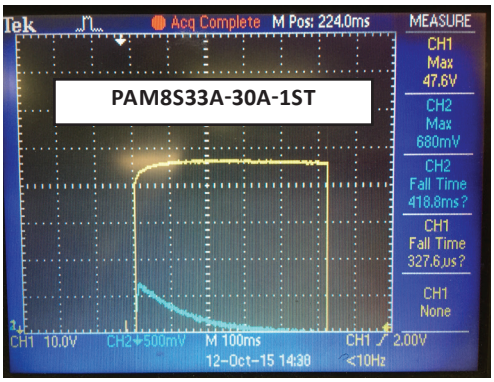
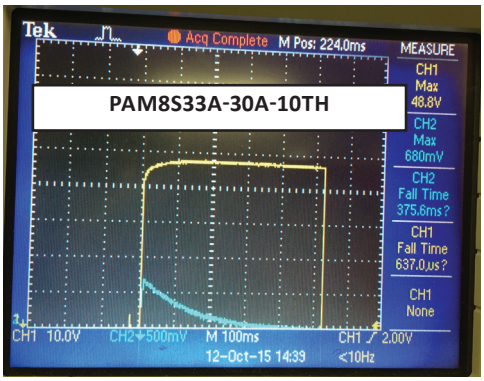
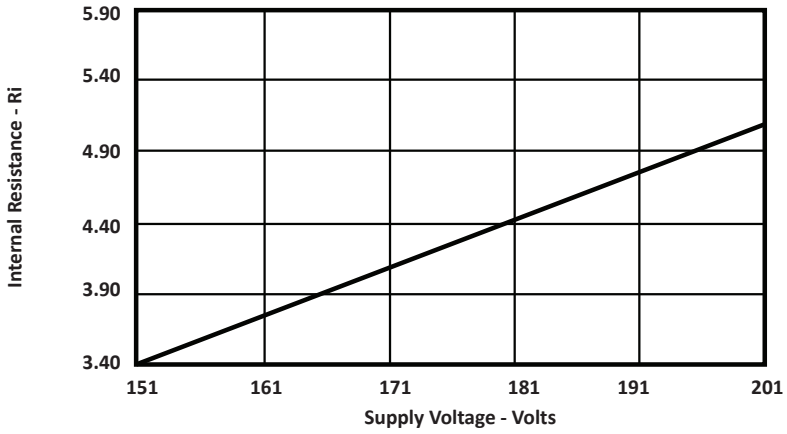


FIGURE 7
CLAMPED WAVEFORM FOR PAM8S36A
I_{PP} = 30A, V_C = 48.8V, 10th HIT



TYPICAL DEVICE CHARACTERISTICS

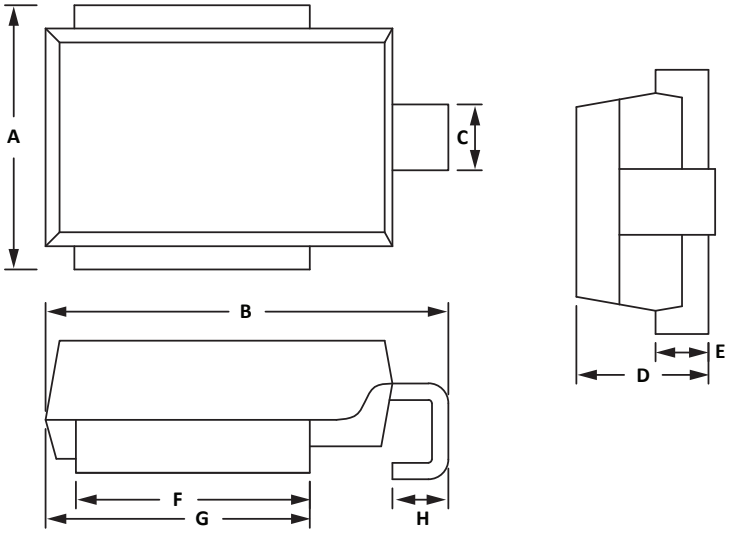
FIGURE 8
PAM8S33A CAPABILITY CHART: ISO 16750-2

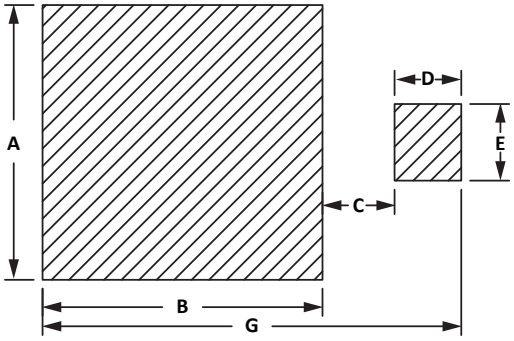


PACKAGE INFORMATION

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

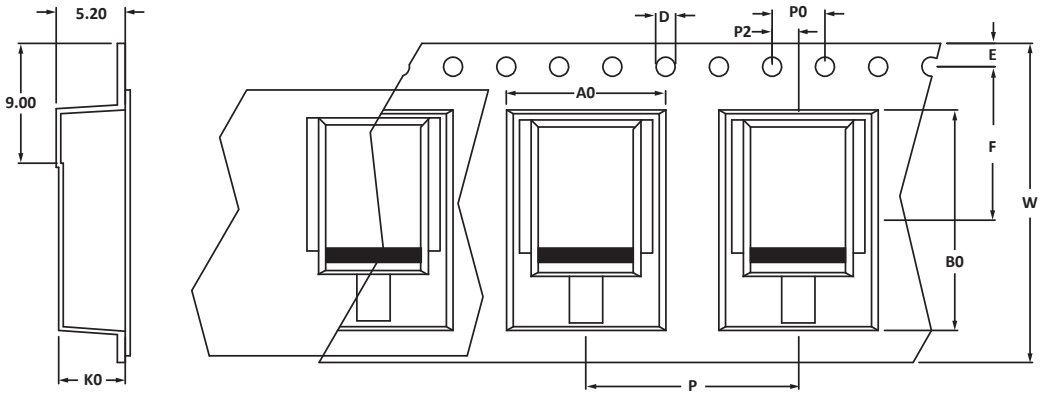
NOTES
1. Dimensions are exclusive of mold flash and metal burrs.





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

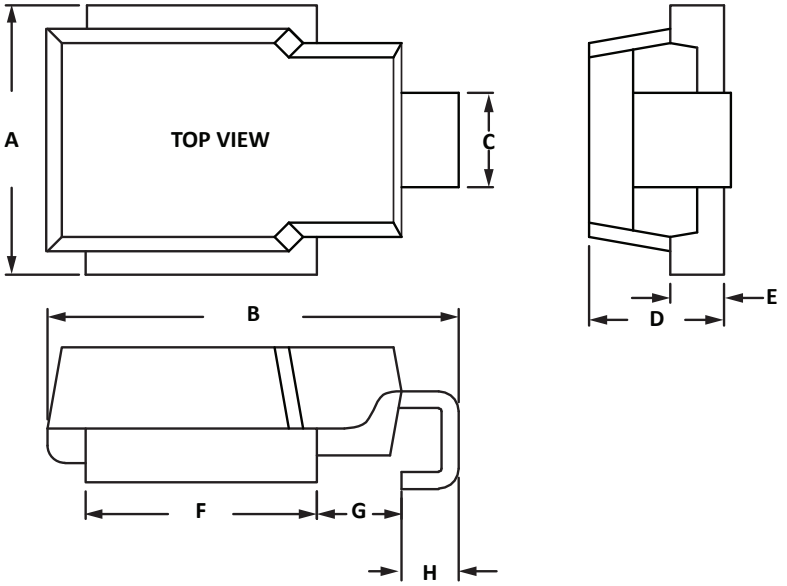
NOTES
1. Dimensions are in millimeters.
2. Surface mount product is taped and reeled in accordance with EIA-481.
3. Marking on Part - part number, date code, logo and polarity band.

PACKAGE INFORMATION

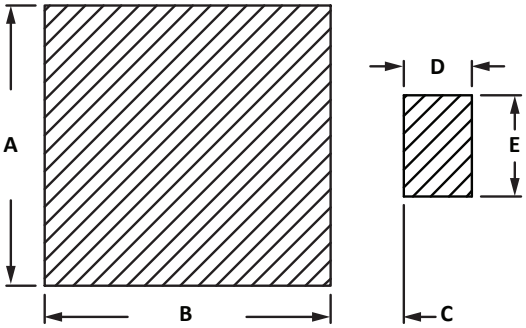
ALTERNATE PACKAGE

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

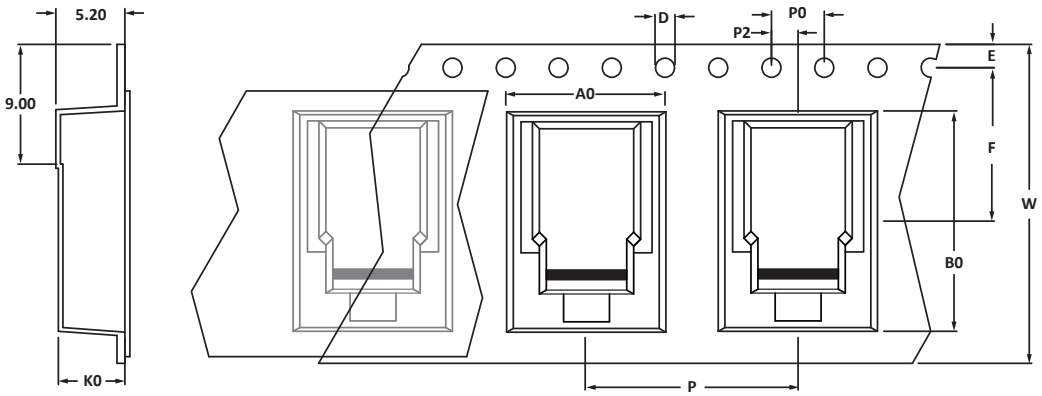
NOTES
1. Dimensions are exclusive of mold flash and metal burrs.



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											
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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
PAM8SxxA/CA	N/A	-T500	500	13"	N/A
PAM8SxxA/CA	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.

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