

8000 WATT TVS COMPONENT



DESCRIPTION

The 8.0SMDJ Series are multi-line transient voltage suppressor arrays that provides board level protection for standard TTL and MOS bus line applications against the damaging effects of ESD, tertiary lightning and switching transients.

The 8.0SMDJ Series has a peak pulse power rating of 8000 Watts for an 10/1000μs waveshape. This device series meets the IEC 61000-4-2, IEC 61000-4-4 and IEC 61000-4-5 requirements.

FEATURES

- IEC Compatibility 61000-4-2 (ESD): $\pm 30\text{kV}$ Air, $\pm 30\text{kV}$ Contact
- IEC Compatibility 61000-4-4 (EFT)
- IEC Compatibility 61000-4-5 (Surge)
- Glass Passivated Chip
- 8000 Watts Peak Pulse Power per Line ($t_p = 10/1000\mu\text{s}$)
- Low Leakage Current: $< 5\mu\text{A}$ (Min. $V_{BR} > 22\text{V}$)
- Unidirectional & Bidirectional Configurations
- Available in Multiple Voltages
- Excellent Clamping Capability
- Very Fast Response Time
- Low Incremental Surge Resistance
- Low Profile Package
- RoHS(Exemption 7a) & Halogen-free Compliant

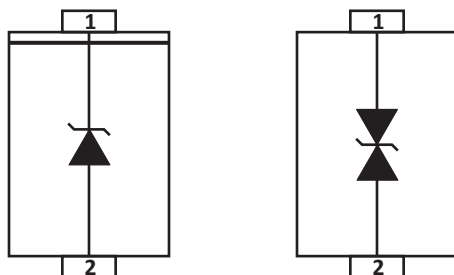
APPLICATIONS

- Communications Equipment
- Industrial Control Equipment
- Power Supply Protection
- Lightning Protection

MECHANICAL CHARACTERISTICS

- Molded JEDEC DO-214AB Package
- Lead-Free Matte-Tin Plating
- Solder Reflow Temperature: 260°C Max, ≤ 10 seconds
- 16mm Tape and Reel Per EIA Standard 481
- Terminal: Solderable per MIL-STD-750, Method 2026
- Flammability Rating UL 94V-0

PIN CONFIGURATIONS



TYPICAL DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

PARAMETER	SYMBOL	VALUE	UNITS
Operating Temperature	T_J	-55 to 150	°C
Storage Temperature	T_{STG}	-55 to 150	°C
Peak Pulse Power (tp = 10/1000µs) - See Figure 1 and Note 1	P_{PP}	8000	Watts
Peak Forward Surge Current, 8.3ms single half sinewave - Unidirectional Only (Note 2)	I_{FSM}	300	Amps
Typical Thermal Resistance, Junction to Lead	$R_{\theta JL}$	15	°C/W
Typical Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	75	°C/W

NOTE

1. Non-repetitive current pulse per Figure 2 and derated above $T_J = 25^\circ\text{C}$ per Figure 3.
2. Measured on 8.3ms single half sinewave or equivalent square wave, duty cycle = 4 pulses per minute maximum.

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER (Note 1)	DEVICE MARKING		REVERSE STAND-OFF VOLTAGE V_{RWM} VOLTS	BREAKDOWN VOLTAGE $V_{(BR)} @ I_T$ VOLTS		TEST CURRENT $@ I_T$ mA	MAXIMUM CLAMPING VOLTAGE (Fig. 2) $@ I_P$ V_C VOLTS	MAXIMUM REVERSE SURGE CURRENT $@ I_{PP}$ AMPS	MAXIMUM REVERSE LEAKAGE CURRENT $@ V_{RWM}$ I_R µA
	UNI	BI		MIN	MAX				
8.0SMDJ12A	8PEP	8BEP	12.0	13.30	14.70	10	19.9	402.1	800
8.0SMDJ13A	8PEQ	8BEQ	13.0	14.40	15.90	10	21.5	372.1	500
8.0SMDJ14A	8PER	8BER	14.0	15.60	17.20	10	23.2	344.9	200
8.0SMDJ15A	8PES	8BES	15.0	16.70	18.50	1	24.4	327.9	100
8.0SMDJ16A	8PET	8BET	16.0	17.80	19.70	1	26.0	307.7	50
8.0SMDJ17A	8PEU	8BEU	17.0	18.90	20.90	1	27.6	290.0	20
8.0SMDJ18A	8PEV	8BEV	18.0	20.00	22.10	1	29.2	274.0	10
8.0SMDJ20A	8PEW	8BEW	20.0	22.20	24.50	1	32.4	247.0	5
8.0SMDJ22A	8PEX	8BEX	22.0	24.40	26.90	1	35.5	225.4	5
8.0SMDJ24A	8PEZ	8BEZ	24.0	26.70	29.50	1	38.9	205.7	5
8.0SMDJ26A	8PFE	8BFE	26.0	28.90	31.90	1	42.1	190.1	5
8.0SMDJ28A	8PFG	8BFG	28.0	31.10	34.40	1	45.4	176.2	5
8.0SMDJ30A	8PFK	8BFK	30.0	33.30	36.80	1	48.4	165.3	5
8.0SMDJ33A	8PFM	8BFM	33.0	36.70	40.60	1	53.3	150.1	5
8.0SMDJ36A	8PFP	8BFP	36.0	40.00	44.20	1	58.1	137.8	5
8.0SMDJ40A	8PFR	8BFR	40.0	44.40	49.10	1	64.5	124.1	5
8.0SMDJ43A	8PFT	8BFT	43.0	47.80	52.80	1	69.4	115.3	5
8.0SMDJ45A	8PFV	8BFV	45.0	50.00	55.30	1	72.7	110.1	5

TYPICAL DEVICE CHARACTERISTICS

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER (Note 1)	DEVICE MARKING		REVERSE STAND-OFF VOLTAGE V_{RWM} VOLTS	BREAKDOWN VOLTAGE $V_{(BR)} @ I_T$ VOLTS		TEST CURRENT $@ I_T$ mA	MAXIMUM CLAMPING VOLTAGE (Fig. 2) $@ I_P$ V_C VOLTS	MAXIMUM REVERSE SURGE CURRENT $@ I_{PP}$ AMPS	MAXIMUM REVERSE LEAKAGE CURRENT $@ V_{RWM}$ I_R μA
	UNI	BI		MIN	MAX				
8.0SMDJ48A	8PFX	8BFX	48.0	53.30	58.90	1	77.4	103.4	5
8.0SMDJ51A	8PFZ	8BFZ	51.0	56.70	62.70	1	82.4	97.1	5
8.0SMDJ54A	8PGE	8BGE	54.0	60.00	66.30	1	87.1	92.0	5
8.0SMDJ58A	8PGG	8BGG	58.0	64.40	71.20	1	93.6	85.5	5
8.0SMDJ60A	8PGK	8BGK	60.0	66.70	73.70	1	96.8	82.7	5
8.0SMDJ64A	8PGM	8BGM	64.0	71.10	78.60	1	103.0	77.7	5
8.0SMDJ70A	8PGP	8BGP	70.0	77.80	86.00	1	113.0	71.0	5
8.0SMDJ75A	8PGR	8BGR	75.0	83.30	92.10	1	121.0	66.2	5
8.0SMDJ78A	8PGT	8BGT	78.0	86.70	95.80	1	126.0	63.5	5
8.0SMDJ85A	8PGV	8BGV	85.0	94.40	104.00	1	137.0	58.4	5
8.0SMDJ90A	8PGX	8BGX	90.0	100.00	111.00	1	146.0	55.0	5

NOTE

1. Add suffix 'CA' after part number to specify a bidirectional device. For example: 8.0SMDJ78CA.

TYPICAL DEVICE CHARACTERISTICS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

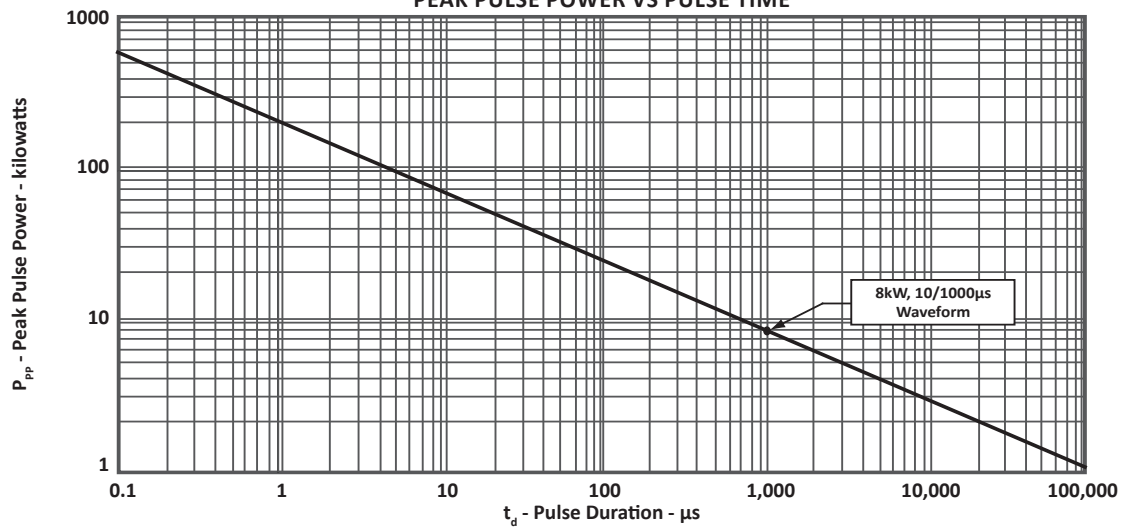


FIGURE 2
PULSE WAVEFORM

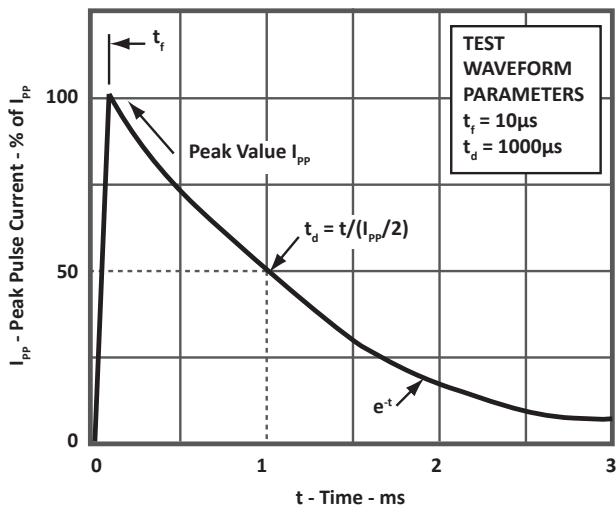
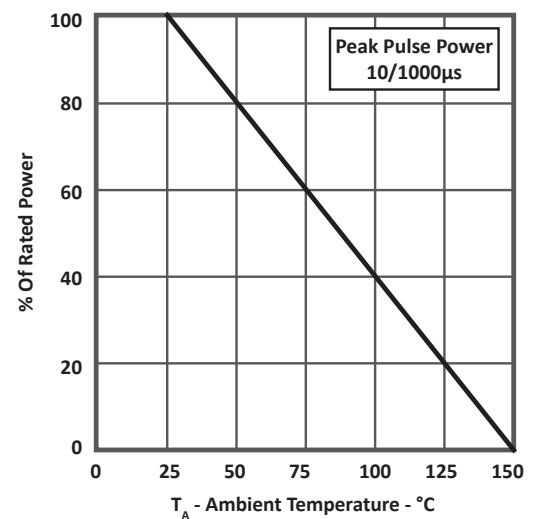


FIGURE 3
POWER DERATING CURVE

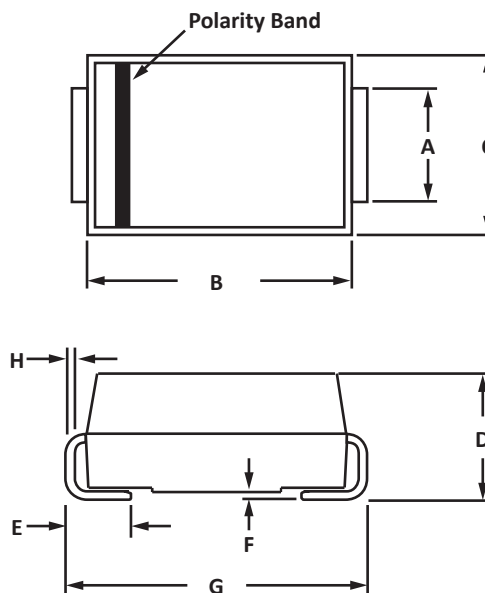


PACKAGE INFORMATION
OUTLINE DIMENSIONS

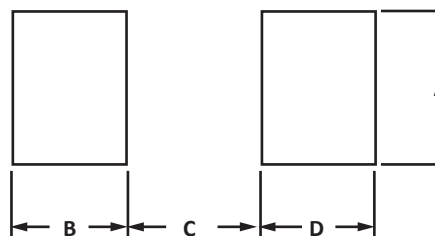
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.90	3.20	0.114	0.126
B	6.60	7.11	0.260	0.280
C	5.59	6.22	0.220	0.245
D	2.06	2.62	0.079	0.103
E	0.76	1.52	0.030	0.060
F	-	0.203	-	0.008
G	7.75	8.13	0.305	0.320
H	0.152	0.305	0.006	0.012

NOTES

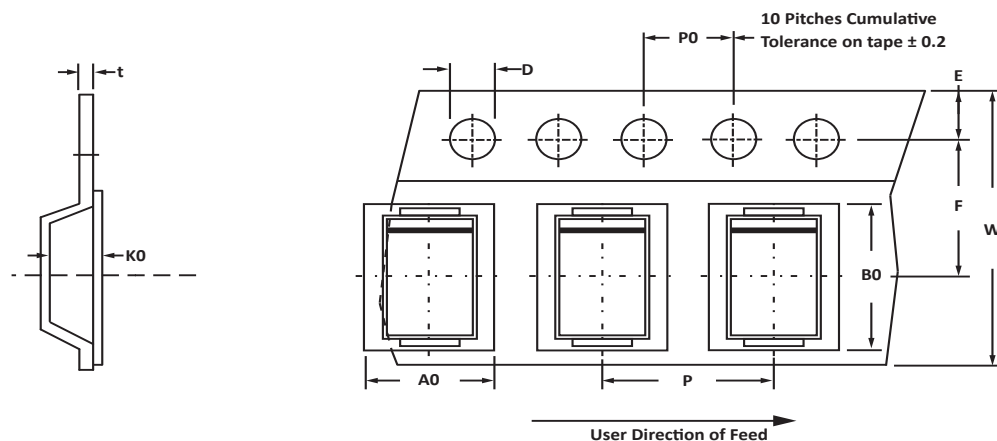
1. Dimensions are exclusive of mold flash and metal burrs.
2. Controlling dimensions in millimeters.


PAD LAYOUT DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	3.30	-	0.129	-
B	2.40	-	0.094	-
C	-	4.20	-	0.165
D	2.40	-	0.094	-



TAPE AND REEL



SPECIFICATIONS

REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P	tmax
330mm (13")	16mm	6.15 ± 0.10	8.30 ± 0.10	2.48 ± 0.10	1.55 ± 0.05	1.75 ± 0.10	7.50 ± 0.10	16.00 ± 0.30	4.00 ± 0.10	8.00 ± 0.10	0.30 ± 0.05

NOTES

1. Dimensions are in millimeters.
2. Surface mount product is taped and reeled in accordance with EIA-481.
3. Marking on Part - marking code (see page 2), date code, logo and cathode defined by polarity band.

ORDERING INFORMATION

BASE PART NUMBER (Voltage = xx)	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
8.0SMDJxxA	N/A	-T13	3,000	13"	N/A
8.0SMDJxxCA	N/A	-T13	3,000	13"	N/A

This device is only available in a Lead-Free (exemption 7a) 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

Web

www.protekdevices.com

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