

3000 WATT TVS COMPONENT**DO-214AB PACKAGE****DESCRIPTION**

The SMDJ-S 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 SMDJ-S Series has a peak pulse power rating of 3000 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

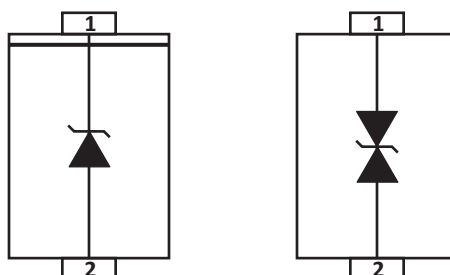
- IEC Compatibility 61000-4-2 (ESD): $\pm 30\text{kV}$ Air, $\pm 30\text{kV}$ Contact
- IEC Compatibility 61000-4-4 (EFT)
- IEC Compatibility 61000-4-5 (Surge)
- Glass Passivated Chip
- 3000 Watts Peak Pulse Power per Line ($t_p = 10/1000\mu\text{s}$)
- Low Leakage Current: $< 2\mu\text{A}$ (Min. $V_{BR} > 12\text{V}$)
- Unidirectional & Bidirectional Configurations
- Available in Multiple Voltages
- Excellent Clamping Capability
- Very Fast Response Time
- Low Incremental Surge Resistance
- Low Profile Package
- RoHS & Halogen-free Compliant

APPLICATIONS

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

MECHANICAL CHARACTERISTICS

- Molded JEDEC DO-214AB Package
- Approximate Weight: 0.21 grams
- 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}	3000	Watts
Peak Power Dissipation on Infinite Heatsink at $T_L = 50^\circ\text{C}$	P_D	6.5	Watts
Peak Forward Surge Current, 8.3ms single half sinewave - Unidirectional Only (Note 2)	I_{FSM}	300	Amps
Maximum Instantaneous Forward Voltage at 100A - Unidirectional Only	V_F	3.5/5.0	V
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 (Note 3)		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 (Note 2) $@ V_{RWM}$ I_R µA
	UNI	BI		MIN	MAX				
SMDJ5.0A-S	RDE	DDE	5.0	6.40	7.00	10	9.2	326.1	800
SMDJ6.0A-S	RDG	DDG	6.0	6.67	7.37	10	10.3	291.3	800
SMDJ6.5A-S	RDK	DDK	6.5	7.22	7.98	10	11.2	267.9	500
SMDJ7.0A-S	PDM	DDM	7.0	7.78	8.60	10	12.0	250.0	200
SMDJ7.5A-S	PDP	DDP	7.5	8.33	9.21	1	12.9	232.6	100
SMDJ8.0A-S	PDR	DDR	8.0	8.89	9.83	1	13.6	220.6	50
SMDJ8.5A-S	PDT	DDT	8.5	9.44	10.40	1	14.4	208.3	20
SMDJ9.0A-S	PDV	DDV	9.0	10.00	11.10	1	15.4	194.8	10
SMDJ10A-S	PDX	DDX	10.0	11.10	12.30	1	17.0	176.5	5
SMDJ11A-S	PDZ	DDZ	11.0	12.20	13.50	1	18.2	164.8	2
SMDJ12A-S	PEE	DEE	12.0	13.30	14.70	1	19.9	150.8	2
SMDJ13A-S	PEG	DEG	13.0	14.40	15.90	1	21.5	139.5	2
SMDJ14A-S	PEK	DEK	14.0	15.60	17.20	1	23.2	129.3	2
SMDJ15A-S	PEM	DEM	15.0	16.70	18.50	1	24.4	123.0	2
SMDJ16A-S	PEP	DEP	16.0	17.80	19.70	1	26.0	115.4	2
SMDJ17A-S	PER	DER	17.0	18.90	20.90	1	27.6	108.7	2
SMDJ18A-S	PET	DET	18.0	20.00	22.10	1	29.2	102.7	2
SMDJ20A-S	PEV	DEV	20.0	22.20	24.50	1	32.4	92.6	2
SMDJ22A-S	PEX	DEX	22.0	24.40	26.90	1	35.5	84.5	2

TYPICAL DEVICE CHARACTERISTICS**ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified**

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	UNI	BI		MIN	MAX				
SMDJ24A-S	PEZ	DEZ	24.0	26.70	29.50	1	38.9	77.1	2
SMDJ26A-S	PFE	DFE	26.0	28.90	31.90	1	42.1	71.3	2
SMDJ28A-S	PFG	DFG	28.0	31.10	34.40	1	45.4	66.1	2
SMDJ30A-S	PFK	DFK	30.0	33.30	36.80	1	48.4	62.0	2
SMDJ33A-S	PFM	DFM	33.0	36.70	40.60	1	53.3	56.3	2
SMDJ36A-S	PFP	DFP	36.0	40.00	44.20	1	58.1	51.6	2
SMDJ40A-S	PFR	DFR	40.0	44.40	49.10	1	64.5	46.5	2
SMDJ43A-S	PFT	DFT	43.0	47.80	52.80	1	69.4	43.2	2
SMDJ45A-S	PFV	DFV	45.0	50.00	55.30	1	72.7	41.3	2
SMDJ48A-S	PFX	DFX	48.0	53.30	58.90	1	77.4	38.8	2
SMDJ51A-S	PFZ	DFZ	51.0	56.70	62.70	1	82.4	36.4	2
SMDJ54A-S	RGE	DGE	54.0	60.00	66.30	1	87.1	34.4	2
SMDJ58A-S	PGG	DGG	58.0	64.40	71.20	1	93.6	32.1	2
SMDJ60A-S	PGK	DGK	60.0	66.70	73.70	1	96.8	31.0	2
SMDJ64A-S	PGM	DGM	64.0	71.10	78.60	1	103.0	29.1	2
SMDJ70A-S	PGP	DGP	70.0	77.80	86.00	1	113.0	26.5	2
SMDJ75A-S	PGR	DGR	75.0	83.30	92.10	1	121.0	24.8	2
SMDJ78A-S	PGT	DGT	78.0	86.70	95.80	1	126.0	23.8	2
SMDJ85A-S	PGV	DGV	85.0	94.40	104.00	1	137.0	21.9	2
SMDJ90A-S	PGX	DGX	90.0	100.00	111.00	1	146.0	20.5	2
SMDJ100A-S	PGZ	DGZ	100.0	111.00	123.00	1	162.0	18.5	2
SMDJ110A-S	PHE	DHE	110.0	122.00	135.00	1	177.0	16.9	2
SMDJ120A-S	PHG	DHG	120.0	133.00	147.00	1	193.0	15.5	2
SMDJ130A-S	PHK	DHK	130.0	144.00	159.00	1	209.0	14.4	2

TYPICAL DEVICE CHARACTERISTICS

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

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	UNI	BI		MIN	MAX				
SMDJ150A-S	PHM	DHM	150.0	167.00	185.00	1	243.0	12.3	2
SMDJ160A-S	PHP	DHP	160.0	178.00	197.00	1	259.0	11.6	2
SMDJ170A-S	PHR	DHR	170.0	189.00	209.00	1	275.0	10.9	2
SMDJ180A-S	PHT	DHT	180.0	200.00	221.0	1	292.0	10.3	2
SMDJ200A-S	PHV	DHV	200.0	224.00	247.00	1	324.0	9.3	2
SMDJ220A-S	PKE	DKE	220.0	244.0	270.00	1	356.0	8.4	2
SMDJ250A-S	PKG*	DKG*	250.0	279.00	309.00	1	405.0	7.4	2
SMDJ300A-S	PKI*	DKI*	300.0	335.00	371.00	1	486.0	6.2	2
SMDJ350A-S	PKJ*	DKJ*	350.0	391.00	432.00	1	567.0	5.3	2
SMDJ400A-S	PKL*	DKL*	400.0	447.00	494.00	1	648.0	4.6	2
SMDJ440A-S	PKN*	DKN*	440.0	492.00	543.00	1	713.0	4.2	2

NOTE

1. Add suffix 'CA-S' after part number to specify a bidirectional device. For example: SMDJ78CA-S.
2. V_R less than or equal to 20V, the I_R should be doubled - bidirectional only.
3. * denotes stacked die component.

TYPICAL DEVICE CHARACTERISTICS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

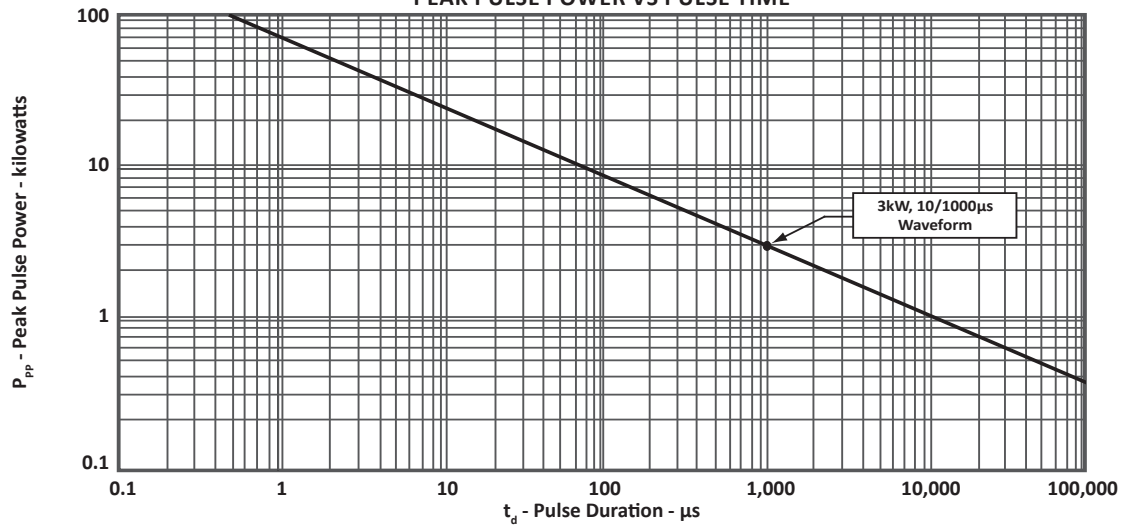


FIGURE 2
PULSE WAVEFORM

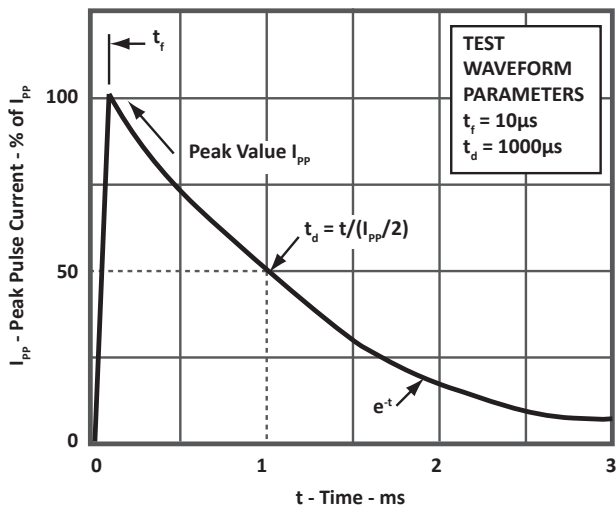
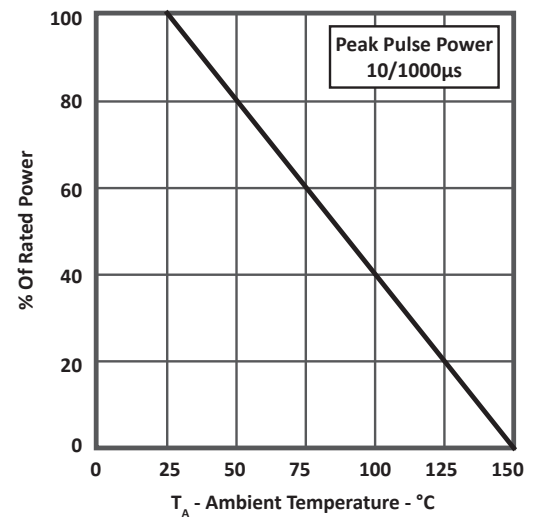


FIGURE 3
POWER DERATING CURVE



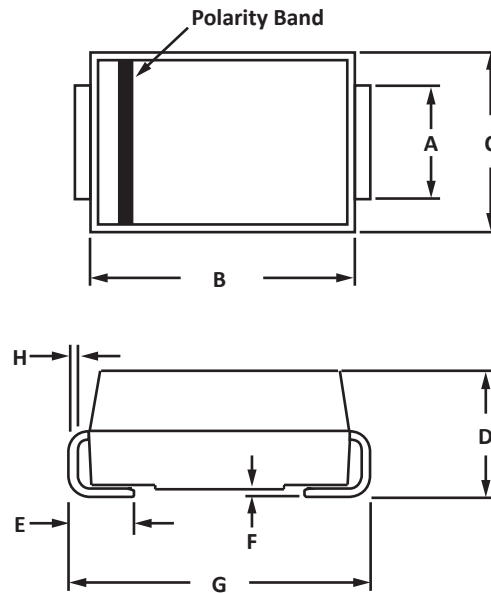
PACKAGE INFORMATION

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

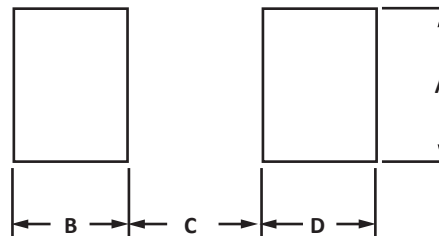
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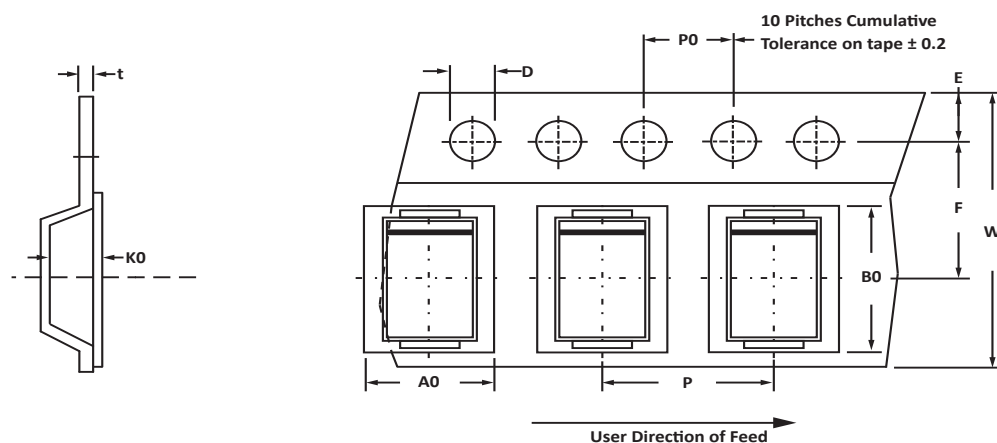
1. Dimensions are exclusive of mold flash and metal burrs.
2. Controlling dimensions in millimeters



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 ± 0.1	1.75 ± 0.20	7.5 ± 0.20	16.00 ± 0.30	4.00 ± 0.20	8.00 ± 0.20	0.30 ± 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 - 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
SMDJxxA-S	N/A	-T13	3,000	13"	N/A
SMDJxxCA-S	N/A	-T13	3,000	13"	N/A



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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