

3000 WATT TVS COMPONENT



DO-214AB PACKAGE

APPLICATIONS

- Power Supply
- AC/DC Applications
- Telecom

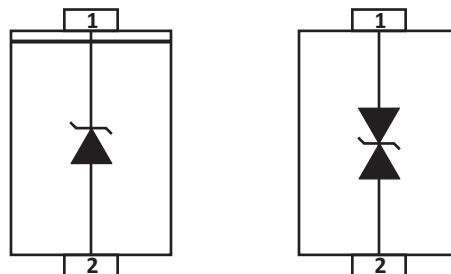
FEATURES

- UL Registered
- IEC Compatibility 61000-4-2 (ESD)
- IEC Compatibility 61000-4-4 (EFT)
- IEC Compatibility 61000-4-5 (Surge)
- Glass Passivated Chip
- 3000 Watts Peak Pulse Power per Line ($t_p = 10/1000\mu s$)
- Low Leakage Current
- Unidirectional and Bidirectional Configurations
- Excellent Clamping Capability
- Very Fast Response Time
- Available in Multiple Voltages
- RoHS Compliant
- REACH Compliant

MECHANICAL CHARACTERISTICS

- Molded JEDEC DO-214AB Package
- Approximate Weight: 0.248 grams
- Lead-Free Pure-Tin Plating (Annealed)
- Solder Reflow Temperature:
Pure-Tin - Sn, 100: 260-270°C
- 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 2	P_{PP}	3000	Watts
Power Dissipation on Infinite Heatsink at $T_L = 75^\circ\text{C}$	P_D	6.0	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	V

NOTE

1. Non-repetitive current pulse per Figure 2 and derated above $T_A = 25^\circ\text{C}$ per Figure 2.
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 (Notes 1-2)	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				
SMDJ5.0A	RDE	DDE	5.0	6.40	7.00	50	9.2	326	5000
SMDJ6.0A	RDG	DDG	6.0	6.67	7.37	50	10.3	291	5000
SMDJ6.5A	RDK	DDK	6.5	7.22	7.98	50	11.2	268	2000
SMDJ7.0A	PDM	DDM	7.0	7.78	8.60	50	12.0	250	1000
SMDJ7.5A	PDP	DDP	7.5	8.33	9.21	5	12.9	233	250
SMDJ8.0A	PDR	DDR	8.0	8.89	9.83	5	13.6	221	150
SMDJ8.5A	PDT	DDT	8.5	9.44	10.40	5	14.4	208	50
SMDJ9.0A	PDV	DDV	9.0	10.00	11.10	5	15.4	195	20
SMDJ10A	PDX	DDX	10.0	11.10	12.30	5	17.0	176	15
SMDJ11A	PDZ	DDZ	11.0	12.20	13.50	5	18.2	165	2
SMDJ12A	PEE	DEE	12.0	13.30	14.70	5	19.9	151	2
SMDJ13A	PEG	DEG	13.0	14.40	15.90	5	21.5	140	2
SMDJ14A	PEK	DEK	14.0	15.60	17.20	5	23.2	129	2
SMDJ15A	PEM	DEM	15.0	16.70	18.50	5	24.4	123	2
SMDJ16A	PEP	DEP	16.0	17.80	19.70	5	26.0	115	2
SMDJ17A	PER	DER	17.0	18.90	20.90	5	27.6	109	2
SMDJ18A	PET	DET	18.0	20.00	22.10	5	29.2	103	2
SMDJ19A	PEB	DEB	19.0	21.10	23.30	5	30.8	97.5	2
SMDJ20A	PEV	DEV	20.0	22.20	24.50	5	32.4	92.6	2
SMDJ22A	PEX	DEX	22.0	24.40	26.90	5	35.5	84.5	2
SMDJ24A	PEZ	DEZ	24.0	26.70	29.50	5	38.9	77.1	2
SMDJ26A	PFE	DFE	26.0	28.90	31.90	5	42.1	71.3	2

TYPICAL DEVICE CHARACTERISTICS

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER (Notes 1-2)	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				
SMDJ28A	PFG	DFG	28.0	31.10	34.40	5	45.4	66.1	2
SMDJ30A	PFK	DFK	30.0	33.30	36.80	5	48.4	62.0	2
SMDJ33A	PFM	DFM	33.0	36.70	40.60	5	53.3	56.3	2
SMDJ36A	PFP	DFP	36.0	40.00	44.20	5	58.1	51.6	2
SMDJ40A	PFR	DFR	40.0	44.40	49.10	5	64.5	46.5	2
SMDJ43A	PFT	DFT	43.0	47.80	52.80	5	69.4	43.2	2
SMDJ45A	PFV	DFV	45.0	50.0	55.30	5	72.7	41.3	2
SMDJ48A	PFX	DFX	48.0	53.30	58.90	5	77.4	38.8	2
SMDJ51A	PFZ	DFZ	51.0	56.70	62.70	5	82.4	36.4	2
SMDJ54A	RGE	DGE	54.0	60.00	66.30	5	87.1	34.4	2
SMDJ58A	RGG	DGG	58.0	64.40	71.20	5	93.6	32.1	2
SMDJ60A	PGK	DGK	60.0	66.70	73.70	5	96.8	31.0	2
SMDJ64A	PGM	DGM	64.0	71.10	78.60	5	103.0	29.1	2
SMDJ70A	PGP	DGP	70.0	77.80	86.00	5	113.0	26.6	2
SMDJ75A	PGR	DGR	75.0	83.30	92.10	5	121.0	24.8	2
SMDJ78A	PGT	DGT	78.0	86.70	95.80	5	126.0	23.8	2
SMDJ80A	PGB	DGB	80.0	88.80	97.60	5	129.6	23.2	2
SMDJ85A	PGV	DGV	85.0	94.40	104.00	5	137.0	21.9	2
SMDJ90A	PGX	DGX	90.0	100.00	111.00	5	146.0	20.6	2
SMDJ100A	PGZ	DGZ	100.0	111.00	123.00	5	162.0	18.5	2
SMDJ110A	PHE	DHE	110.0	122.00	135.00	5	177.0	17.0	2
SMDJ120A	PHG	DHG	120.0	133.00	147.00	5	193.0	15.5	2
SMDJ130A	PHK	DHK	130.0	144.00	159.00	5	209.0	14.4	2

TYPICAL DEVICE CHARACTERISTICS

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER (Notes 1-2)	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				
	SMDJ140A	PHB	DHB	140.0	155.00	171.00	5	226.8	13.2
SMDJ150A	PHM	DHM	150.0	167.00	185.00	5	243.0	12.4	2
SMDJ160A	PHP	DHP	160.0	178.00	197.00	5	259.0	11.6	2
SMDJ170A	PHR	DHR	170.0	189.00	209.00	5	275.0	10.9	2
SMDJ180A	PHT	DHT	180.0	200.00	220.00	5	291.6	10.3	2
SMDJ190A	PHV	DHV	190.0	211.00	232.00	5	307.8	9.8	2
SMDJ200A	PHW	DHW	200.0	224.00	247.00	5	324.0	9.3	2
SMDJ220A	PHX	DHX	220.0	246.00	272.00	5	356.0	8.4	2
SMDJ250A	PHZ	DHZ	250.0	279.00	309.00	5	405.0	7.4	2
SMDJ300A	PJE	DJE	300.0	335.00	371.00	5	486.0	6.2	2
SMDJ350A	PJG	DJG	350.0	391.00	432.00	5	567.0	5.3	2
SMDJ400A	PJK	DJK	400.0	447.00	494.00	5	648.0	4.6	2
SMDJ440A	PJM	DJM	440.0	492.00	543.00	5	713.0	4.2	2

NOTE

- Suffix 'A' denotes 5% tolerance.
- Add suffix 'CA' after part number to specify a bidirectional device.

TYPICAL DEVICE CHARACTERISTICS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

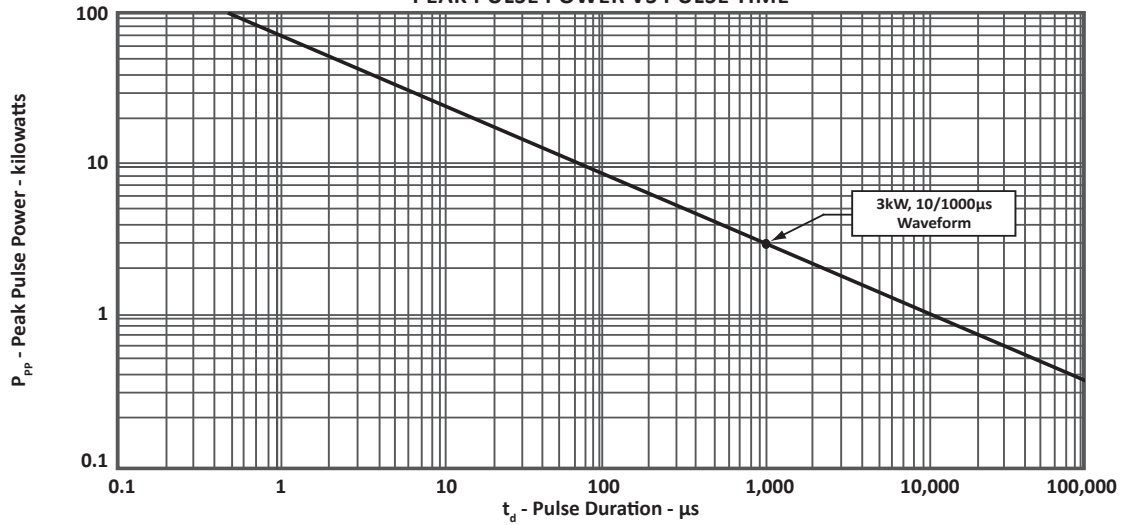


FIGURE 2
PULSE WAVEFORM

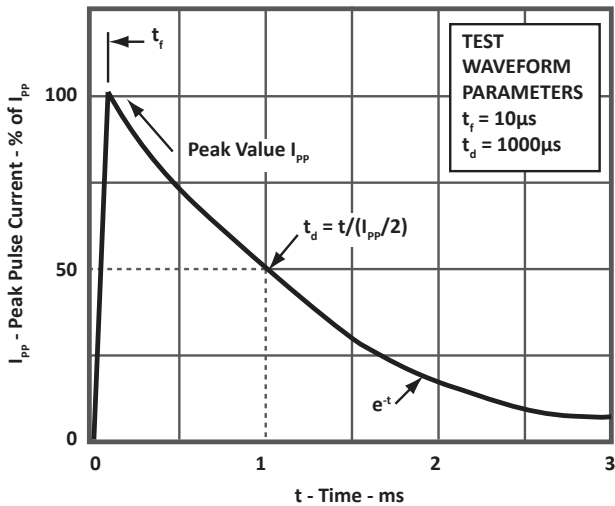
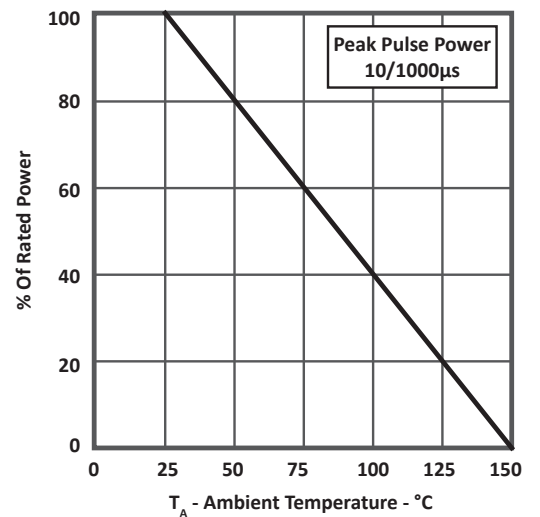
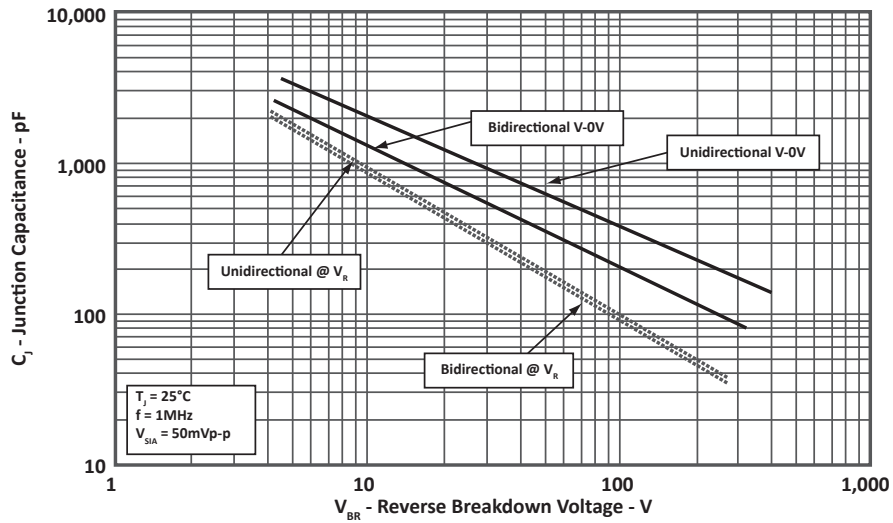


FIGURE 3
POWER DERATING CURVE

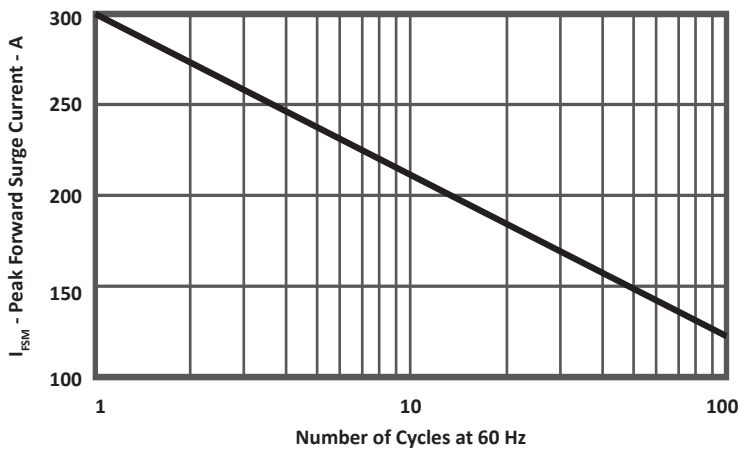


TYPICAL DEVICE CHARACTERISTICS

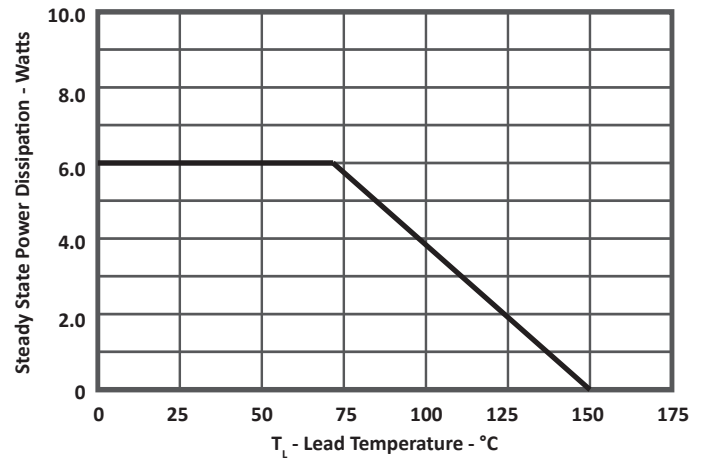
**FIGURE 4
TYPICAL JUNCTION CAPACITANCE**



**FIGURE 5
MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT**



**FIGURE 6
STEADY STATE POWER DERATING CURVE**



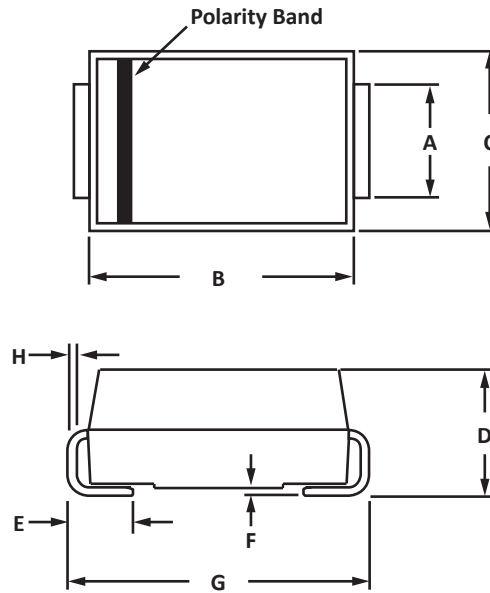
DO-214AB PACKAGE INFORMATION

OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.75	3.25	0.108	0.128
B	6.60	7.40	0.260	0.291
C	5.59	6.25	0.220	0.246
D	2.06	2.62	0.079	0.103
E	0.76	1.52	0.030	0.060
F	-	0.203	-	0.008
G	7.70	8.2	0.303	0.323
H	0.15	0.31	0.006	0.012

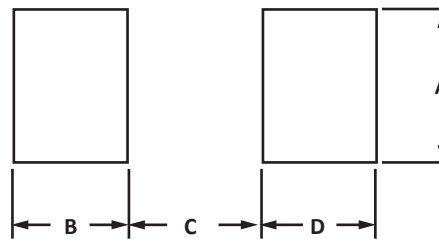
NOTES

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

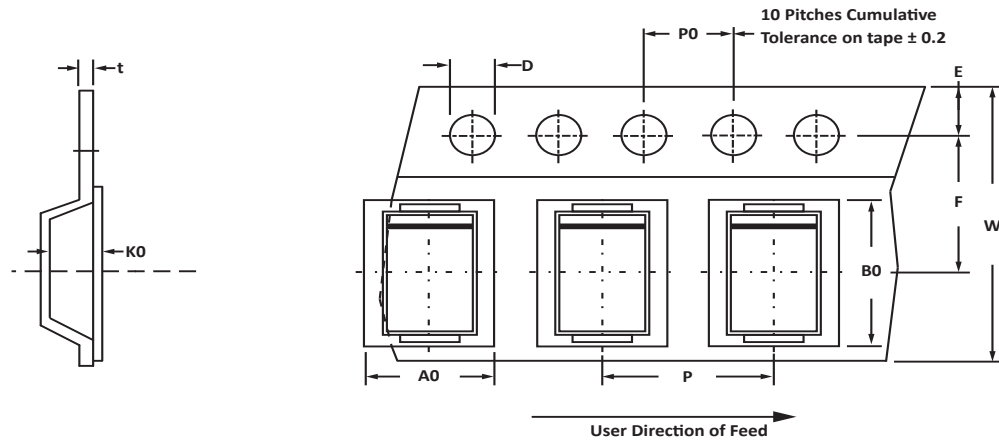


PAD LAYOUT DIMENSIONS

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	6.05 ± 0.10	8.31 ± 0.10	2.54 ± 0.10	1.55 ± 0.05	1.75 ± 0.10	7.5 ± 0.10	16.00 ± 0.30	4.00 ± 0.10	8.00 ± 0.10	0.4

NOTES

- Dimensions are in millimeters.
- Surface mount product is taped and reeled in accordance with EIA-481.
- 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	N/A	-T13	3,000	13"	N/A
SMDJxxCA	N/A	-T13	3,000	13"	N/A

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

COMPANY INFORMATION

COMPANY PROFILE

In business more than 25 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. ProTek Devices is 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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