5000 WATT TVS COMPONENT

RTCA DO-160G COMPLIANT PRODUCT



DO-214AB PACKAGE

APPLICATIONS

- Power Supply
- AC/DC Applications
- Telecom

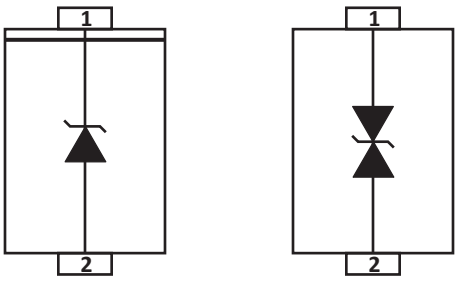
FEATURES

- **RTCA DO-160G COMPLIANT PRODUCT**
- UL Registered
- IEC Compatibility 61000-4-2 (ESD)
- IEC Compatibility 61000-4-4 (EFT)
- IEC Compatibility 61000-4-5 (Surge)
- Glass Passivated Chip
- 5000 Watts Peak Pulse Power per Line (tp = 10/1000µs)
- 28,000 Watts Peak Pulse Power per Line (tp = 8/20µs)
- Low Leakage Current
- Unidirectional & Bidirectional Configurations
- Available in Multiple Voltages
- Excellent Clamping Capability
- Very Fast Response Time
- 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

RTCA DO-160G COMPLIANT PRODUCT

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}	5000	Watts
Peak Pulse Power (tp =8/20µs) - See Figure 1 and Note 2	P_{PP}	28000	Watts
Power Dissipation on Infinite Heatsink at T_L = 75°C	P_D	6.5	Watts
Peak Forward Surge Current, 8.3ms single half sinewave - Unidirectional Only (Note 2)	I_{FSM}	500	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 TA = 25°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 (Note 1)	DEVICE MARKING		REVERSE STAND-OFF VOLTAGE	BREAKDOWN VOLTAGE $V_{(BR)}$ @ I_T VOLTS		TEST CURRENT	MAXIMUM CLAMPING VOLTAGE (Fig. 2)	MAXIMUM REVERSE SURGE CURRENT	MAXIMUM REVERSE LEAKAGE CURRENT
	UNI	BI	V_{RWM} VOLTS	MIN	MAX	@ I_T mA	@ I_P V_C VOLTS	@I_{PP} AMPS	@V_{RWM} I_R µA
5.0SMDJ6.0CA		5DDG	6.0	6.67	7.37	50	10.3	485	2000
5.0SMDJ11A	5PDX	5BDX	11.0	12.20	13.50	1	18.2	278	800
5.0SMDJ12A	5PDZ	5BDZ	12.0	13.30	14.70	1	19.9	254	800
5.0SMDJ13A	5PEE	5BEE	13.0	14.40	15.90	1	21.5	235	500
5.0SMDJ14A	5PEG	5BEG	14.0	15.60	17.20	1	23.2	218	200
5.0SMDJ15A	5PEK	5BEK	15.0	16.70	18.50	1	24.4	207	100
5.0SMDJ16A	5PEM	5BEM	16.0	17.80	19.70	1	26.0	194	50
5.0SMDJ17A	5PEP	5BEP	17.0	18.90	20.90	1	27.6	183	20
5.0SMDJ18A	5PER	5BER	18.0	20.00	22.10	1	29.2	173	10
5.0SMDJ19A	5PET	5BET	19.0	21.10	23.30	1	30.8	164	10
5.0SMDJ20A	5PEV	5BEV	20.0	22.20	24.50	1	32.4	156	5
5.0SMDJ22A	5PEX	5BEX	22.0	24.40	26.90	1	35.5	142	5
5.0SMDJ24A	5PEZ	5BEZ	24.0	26.70	29.50	1	38.9	130	5
5.0SMDJ26A	5PFE	5BFE	26.0	28.90	31.90	1	42.1	120	5
5.0SMDJ28A	5PFG	5BFG	28.0	31.10	34.40	1	45.4	111	5
5.0SMDJ30A	5PFK	5BFK	30.0	33.30	36.80	1	48.4	104	5
5.0SMDJ33A	5PFM	5BFM	33.0	36.70	40.60	1	53.3	94.8	5
5.0SMDJ36A	5PFP	5BFP	36.0	40.00	44.20	1	58.1	86.9	5
5.0SMDJ40A	5PFR	5BFR	40.0	44.40	49.10	1	64.5	78.3	5
5.0SMDJ43A	5PFT	5BFT	43.0	47.80	52.80	1	69.4	72.8	5
5.0SMDJ45A	5PFV	5BFV	45.0	50.00	55.30	1	72.7	69.5	5

TYPICAL DEVICE CHARACTERISTICS

RTCA DO-160G COMPLIANT PRODUCT

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER (Note 1)	DEVICE MARKING		REVERSE STAND-OFF VOLTAGE	BREAKDOWN VOLTAGE $V_{(BR)}$ @ I_T VOLTS		TEST CURRENT	MAXIMUM CLAMPING VOLTAGE (Fig. 2)	MAXIMUM REVERSE SURGE CURRENT	MAXIMUM REVERSE LEAKAGE CURRENT
	UNI	BI	V_{RWM} VOLTS	MIN	MAX	@ I_T mA	@ I_P V_C VOLTS	@I_{PP} AMPS	@V_{RWM} I_R µA
5.0SMDJ48A	5PFX	5BFX	48.0	53.30	58.90	1	77.4	65.3	5
5.0SMDJ51A	5PFZ	5BFZ	51.0	56.70	62.70	1	82.4	61.3	5
5.0SMDJ54A	5PGE	5BGE	54.0	60.00	66.30	1	87.1	58.0	5
5.0SMDJ58A	5PGG	5BGG	58.0	64.40	71.20	1	93.6	54.0	5
5.0SMDJ60A	5PGK	5BGK	60.0	66.70	73.70	1	96.8	52.2	5
5.0SMDJ64A	5PGM	5BGM	64.0	71.10	78.60	1	103.0	49.0	5
5.0SMDJ70A	5PGP	5BGP	70.0	77.80	86.00	1	113.0	44.7	5
5.0SMDJ75A	5PGR	5BGR	75.0	83.30	92.10	1	121.0	41.7	5
5.0SMDJ78A	5PGT	5BGT	78.0	86.70	95.80	1	126.0	40.1	5
5.0SMDJ80A	5PGB	5BGB	80.0	88.80	97.60	1	129.6	39.0	5
5.0SMDJ85A	5PGV	5BGV	85.0	94.40	104.00	1	137.0	36.9	5
5.0SMDJ90A	5PGX	5BGX	90.0	100.00	111.00	1	146.0	34.6	5
5.0SMDJ100A	5PGZ	5BGZ	100.0	111.0	123.00	1	162.0	31.2	5
5.0SMDJ110A	5PHE	5BHE	110.0	122.00	135.00	1	177.0	28.5	5
5.0SMDJ120A	5PHG	5BHG	120.0	133.00	147.00	1	193.0	26.2	5
5.0SMDJ130A	5PHK	5BHK	130.0	144.00	159.00	1	209.0	24.2	5
5.0SMDJ140A	5PHB	5BHB	140.0	155.00	171.00	1	226.8	22.3	5
5.0SMDJ150A	5PHM	5BHM	150.0	167.0	185.00	1	243.0	20.8	5
5.0SMDJ160A	5PHP	5BHP	160.0	178.00	197.00	1	259.0	19.5	5
5.0SMDJ170A	5PHR	5BHR	170.0	189.00	209.00	1	275.0	18.4	5
5.0SMDJ180A	5PHT	5BHT	180.0	200.00	220.0	1	291.6	17.3	5
5.0SMDJ190A	5PHV	5BHV	190.0	211.00	232.00	1	307.8	16.4	5
5.0SMDJ200A	5PHW	5BHW	200.0	224.00	247.00	1	324.0	15.4	5
5.0SMDJ220A	5PHX	5BHX	220.0	246.00	272.00	1	356.0	14.0	5
5.0SMDJ250A	5PHZ	5BHZ	250.0	279.00	309.00	1	405.0	12.4	5
5.0SMDJ300A	5PJE	5BJE	300.0	335.00	371.00	1	486.0	10.3	5
5.0SMDJ350A	5PJG	5BJG	350.0	391.00	432.00	1	567.0	8.8	5
5.0SMDJ400A	5PJK	5BJK	400.0	447.00	494.00	1	648.0	7.7	5
5.0SMDJ440A	5PJM	5BJM	440.0	492.00	543.00	1	713.0	7.0	5

NOTE
1. Add suffix 'C' or 'CA' after part number to specify a bidirectional device.

TYPICAL DEVICE CHARACTERISTICS

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FIGURE 1
PEAK PULSE POWER VS PULSE TIME

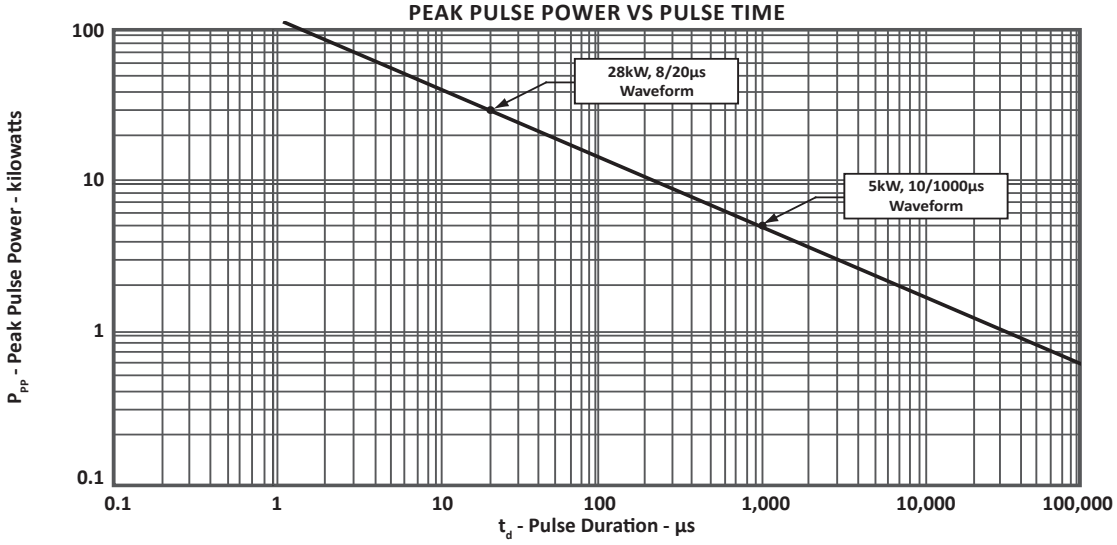


FIGURE 2
PULSE WAVEFORM

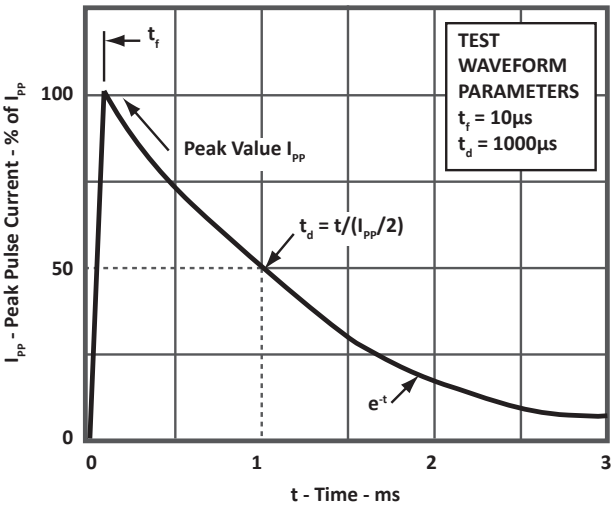
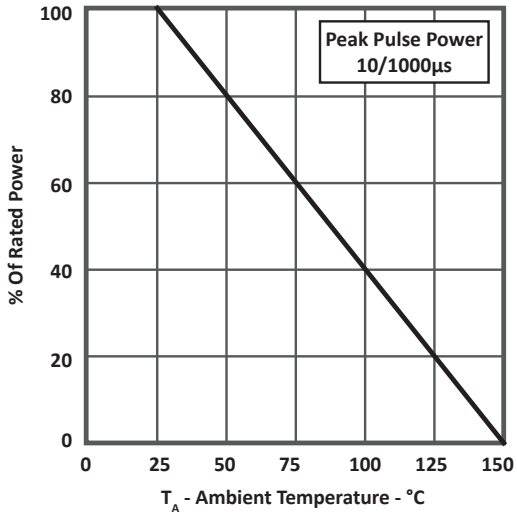


FIGURE 3
POWER DERATING CURVE



TYPICAL DEVICE CHARACTERISTICS

RTCA DO-160G COMPLIANT PRODUCT

FIGURE 4
TYPICAL JUNCTION CAPACITANCE

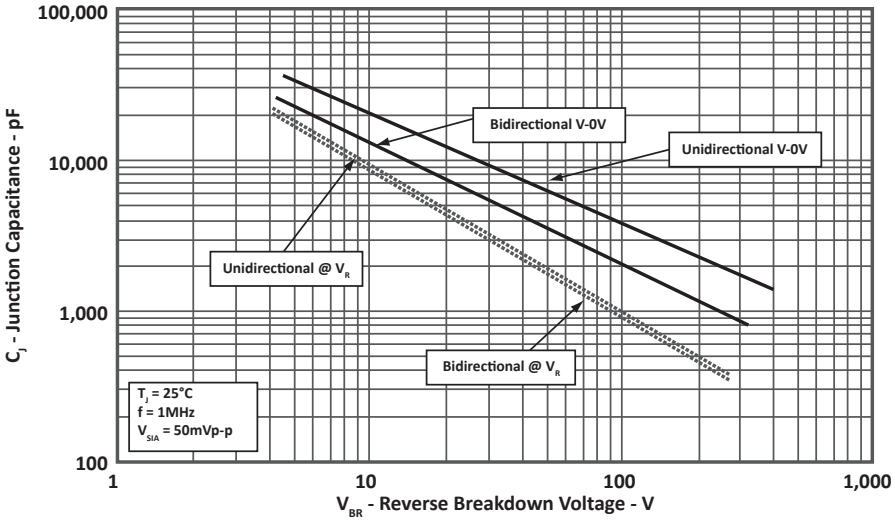


FIGURE 5
MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

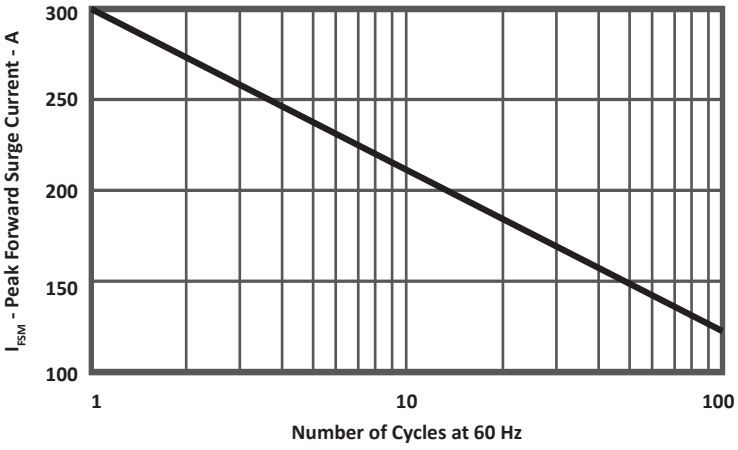
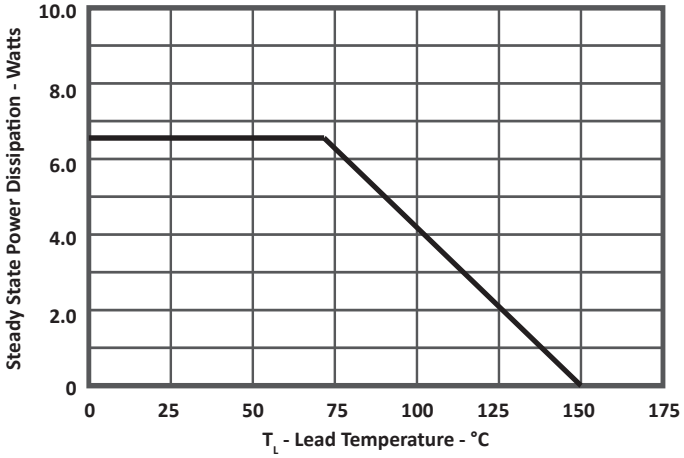


FIGURE 6
STEADY STATE POWER DERATING CURVE

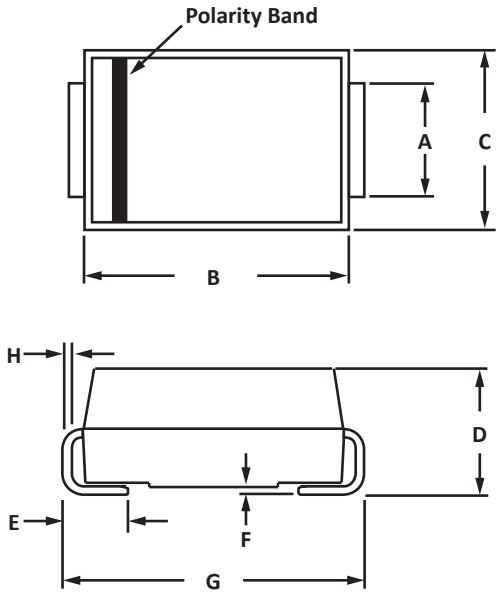


DO-214AB PACKAGE INFORMATION

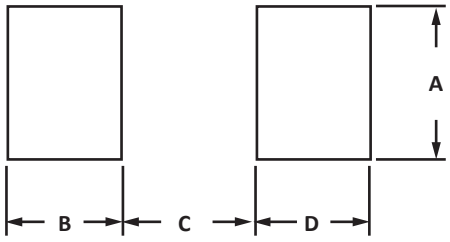
RTCA DO-160G COMPLIANT PRODUCT

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.

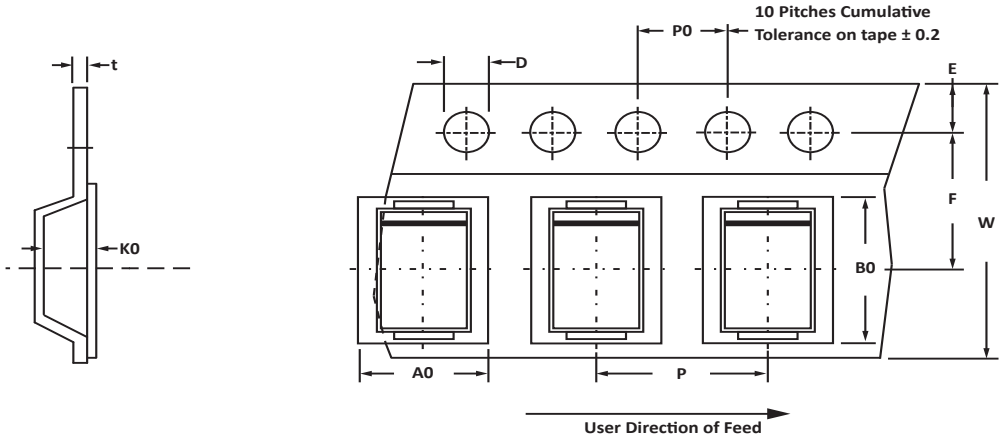


PAD LAYOUT DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	3.30	-	0.129	-
B	2.40	-	0.094	-
C	-	4.20	-	0.165
D	2.40	-	0.094	-



TAPE AND REEL

RTCA DO-160G COMPLIANT PRODUCT



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
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
5.0SMDJxxA	N/A	-T13	3,000	13”	N/A
5.0SMDJxxCA	N/A	-T13	3,000	13”	N/A
5.0SMDJxxA	N/A	-T500	500	7”	N/A
5.0SMDJxxCA	N/A	-T500	500	7”	N/A
This device is only available in a Lead-Free configuration.					

COMPANY INFORMATION

RTCA DO-160G COMPLIANT PRODUCT

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 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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