

1500 WATT TVS COMPONENT



APPLICATIONS

- I/O Interfaces
- VCC Bus Telecom
- Industrial Controls
- Computing
- Consumer Electronics

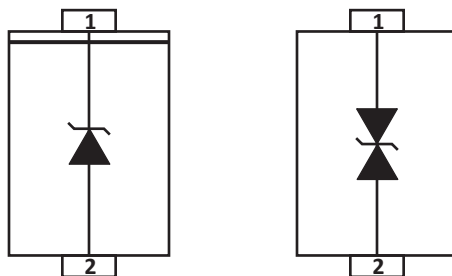
FEATURES

- UL Registered
- IEC Compatibility 61000-4-2 (ESD)
- IEC Compatibility 61000-4-4 (EFT)
- IEC Compatibility 61000-4-5 (Surge)
- 1500 Watts Peak Pulse Power per Line ($t_p = 10/1000\mu s$)
- Halogen-Free
- Low Profile Package
- Built-in Strain Relief
- Glass Passivated Junction
- Excellent Clamping Capability
- Repetition Rate (Duty Cycle): 0.05%
- Fast Response Time: Typically less than 1.0ps from 0 Volts to BV Min
- Typical IR < 1 μA above 12V
- High Temperature Soldering: 260°C/40 seconds at Terminals
- Available in Multiple Voltages
- Bidirectional and Unidirectional Configurations
- RoHS Compliant
- REACH Compliant

MECHANICAL CHARACTERISTICS

- Molded JEDEC DO-214AB Package
- Approximate Weight: 0.21 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_L	-55 to 150	°C
Storage Temperature	T_{STG}	-55 to 150	°C
Peak Pulse Power (tp =10/1000µs) - See Figure 1	P_{PP}	1500	Watts

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

UNIDIRECTIONAL PART NUMBER	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	PEAK PULSE CURRENT $@ I_{PP}$ AMPS	REVERSE LEAKAGE CURRENT $@ V_{RWM}$ I_R µA
			MIN	MAX				
			1.5SMC6.8A	6V8A				
1.5SMC7.5A	7V5A	6.40	7.13	7.88	10	11.3	134.5	500
1.5SMC8.2A	8V2A	7.02	7.79	8.61	10	12.1	125.6	200
1.5SMC9.1A	9V1A	7.78	8.65	9.50	1	13.4	113.4	50
1.5SMC10A	10A	8.55	9.50	10.50	1	14.5	104.8	10
1.5SMC11A	11A	9.40	10.50	11.60	1	15.6	97.4	5
1.5SMC12A	12A	10.20	11.40	12.60	1	16.7	91.0	5
1.5SMC13A	13A	11.10	12.40	13.70	1	18.2	83.5	1
1.5SMC15A	15A	12.80	14.30	15.80	1	21.2	71.7	1
1.5SMC16A	16A	13.60	15.20	16.80	1	22.5	67.6	1
1.5SMC18A	18A	15.30	17.10	18.90	1	25.2	60.3	1
1.5SMC20A	20A	17.10	19.00	21.00	1	27.7	54.9	1
1.5SMC22A	22A	18.80	20.90	23.10	1	30.6	49.7	1
1.5SMC24A	24A	20.50	22.80	25.20	1	33.2	45.8	1
1.5SMC27A	27A	23.10	25.70	28.40	1	37.5	40.5	1
1.5SMC30A	30A	25.60	28.50	31.50	1	41.4	36.7	1
1.5SMC33A	33A	28.20	31.40	34.70	1	45.7	33.3	1
1.5SMC36A	36A	30.80	34.20	37.80	1	49.9	30.5	1
1.5SMC39A	39A	33.30	37.10	41.00	1	53.9	28.2	1
1.5SMC43A	43A	36.80	40.90	45.20	1	59.3	25.6	1
1.5SMC47A	47A	40.20	44.70	49.40	1	64.8	23.5	1
1.5SMC51A	51A	43.60	48.50	53.60	1	70.1	21.7	1
1.5SMC56A	56A	47.80	53.20	58.80	1	77.0	19.7	1
1.5SMC62A	62A	53.00	58.90	65.10	1	85.0	17.9	1
1.5SMC68A	68A	58.10	64.60	71.40	1	92.0	16.5	1
1.5SMC75A	75A	64.10	71.30	78.80	1	103.0	14.8	1
1.5SMC82A	82A	70.10	77.90	86.10	1	113.0	13.5	1

TYPICAL DEVICE CHARACTERISTICS

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER	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	PEAK PULSE CURRENT @ I_{PP} AMPS	REVERSE LEAKAGE CURRENT @ V_{RWM} I_R μA
			MIN	MAX				
1.5SMC91A	91A	77.80	86.50	95.50	1	125.0	12.2	1
1.5SMC100A	100A	85.50	95.00	105.00	1	137.0	11.1	1
1.5SMC110A	110A	94.00	105.00	116.00	1	152.0	10.0	1
1.5SMC120A	120A	102.00	114.00	126.00	1	165.0	9.2	1
1.5SMC130A	130A	111.00	124.00	137.00	1	179.0	8.5	1
1.5SMC150A	150A	128.00	143.00	158.00	1	207.0	7.3	1
1.5SMC160A	160A	136.00	152.00	168.00	1	219.0	6.9	1
1.5SMC170A	170A	145.00	162.00	179.00	1	234.0	6.5	1
1.5SMC180A	180A	154.00	171.00	189.00	1	246.0	6.2	1
1.5SMC200A	200A	171.00	190.00	210.00	1	274.0	5.5	1
1.5SMC220A	220A	185.00	209.00	231.00	1	328.0	4.6	1
1.5SMC250A	250A	214.00	237.00	263.00	1	344.0	4.4	1
1.5SMC300A	300A	256.00	285.00	315.00	1	414.0	3.7	1
1.5SMC350A	350A	300.00	332.00	368.00	1	482.0	3.2	1
1.5SMC400A	400A	342.00	380.00	420.00	1	548.0	2.8	1
1.5SMC440A	440A	376.00	418.00	462.00	1	602.0	2.5	1
1.5SMC480A	480A	408.00	456.00	504.00	1	658.0	2.3	1
1.5SMC510A	510A	434.00	485.00	435.00	1	698.0	2.1	1
1.5SMC530A	530A	477.00	503.50	556.50	1	725.0	2.1	1
1.5SMC540A	540A	486.00	513.00	567.00	1	740.0	2.0	1
1.5SMC550A	550A	495.00	522.50	577.50	1	760.0	2.0	1

NOTE

1. Part numbers shown are unidirectional devices only. Add "C" to specify bidirectional when ordering, i.e., 1.5SMC16CA.
2. Marking code shown are for unidirectional devices only. Replace "A" with "C" for device marking, i.e., marking code for 1.5SMC16CA is 16C.
3. For bidirectional type having VRWM of 10 Volts and less, the IR limit is double.

TYPICAL DEVICE CHARACTERISTICS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

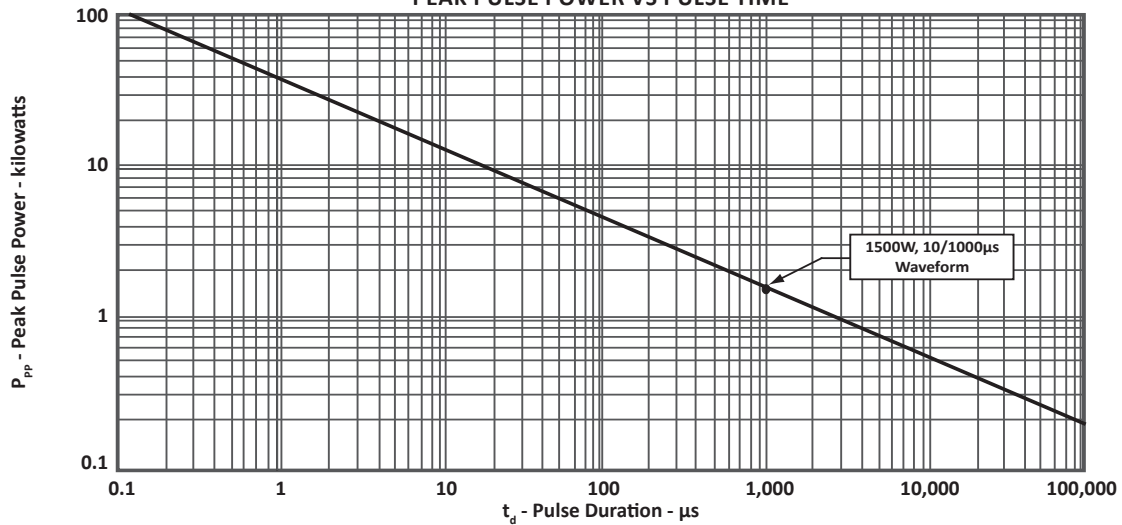


FIGURE 2
PULSE WAVEFORM

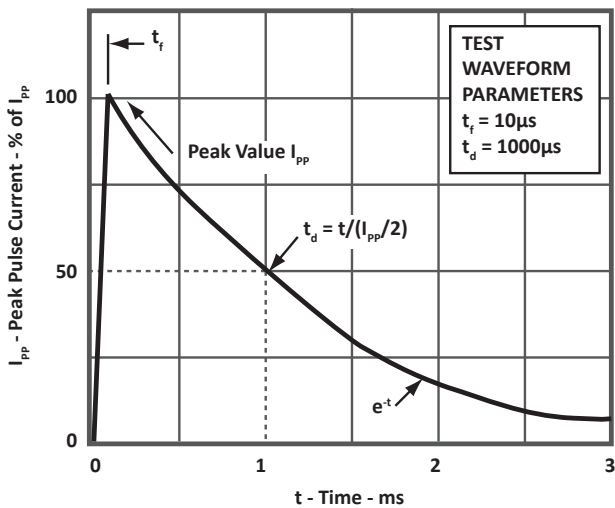
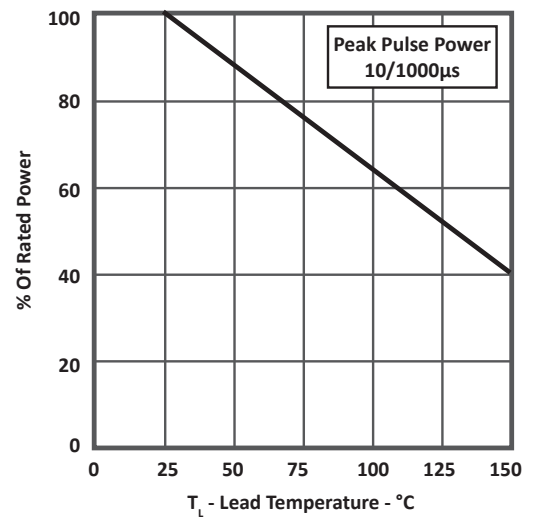
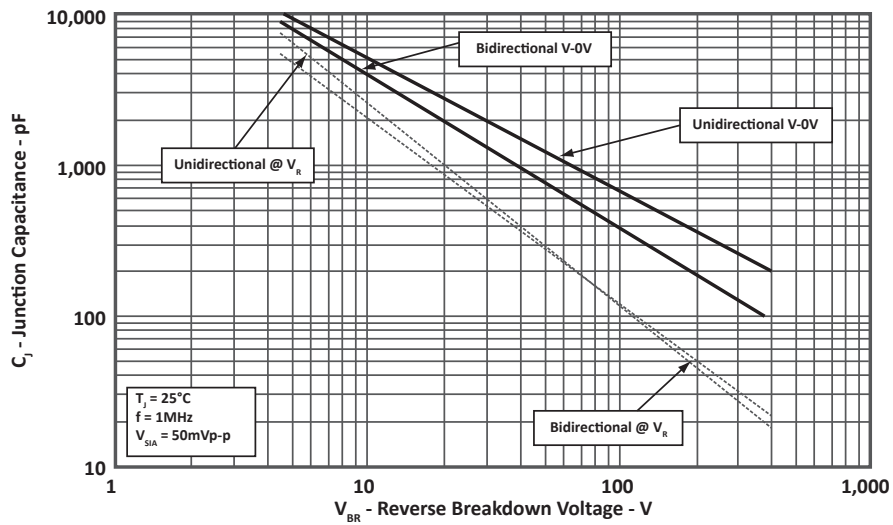


FIGURE 3
POWER DERATING CURVE

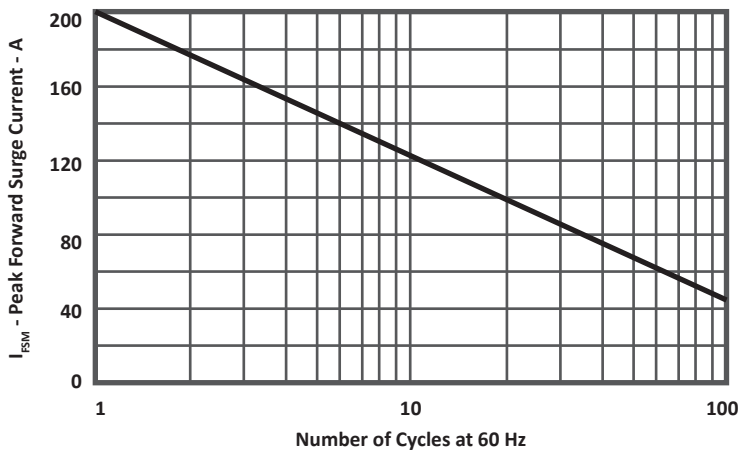


TYPICAL DEVICE CHARACTERISTICS

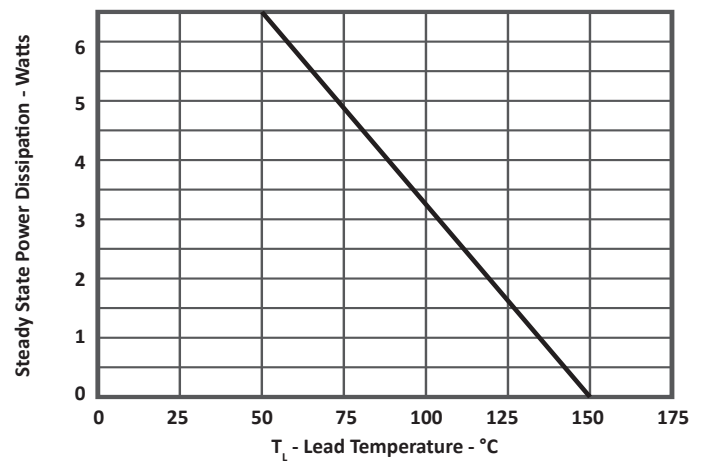
**FIGURE 4
TYPICAL JUNCTION CAPACITANCE**



**FIGURE 5
MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT
(UNIDIRECTIONAL ONLY)**



**FIGURE 6
STEADY STATE POWER DERATING CURVE**



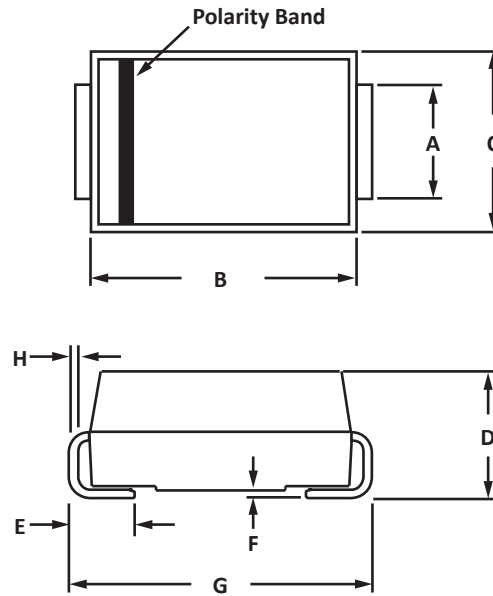
DO-214AB PACKAGE INFORMATION

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

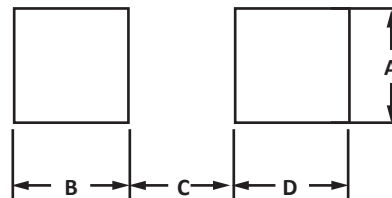
NOTES

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

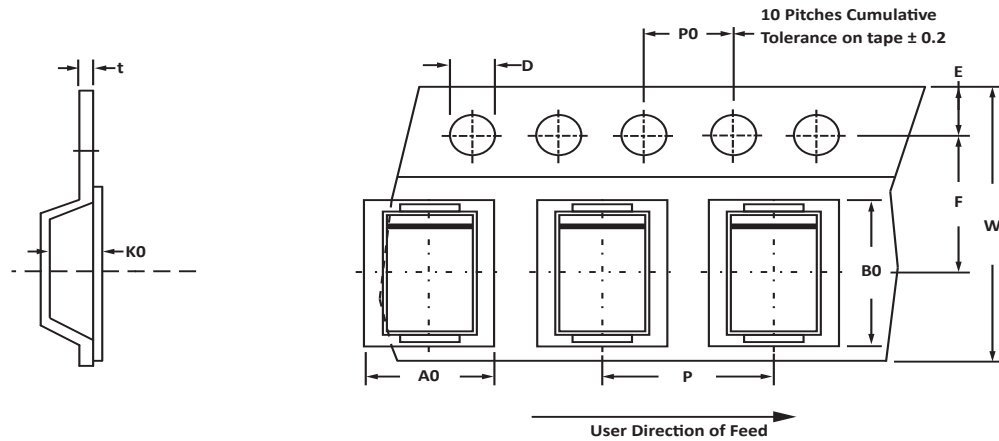


PAD LAYOUT DIMENSIONS

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	6.50 ± 0.20	8.25 ± 0.20	2.40 ± 0.30	1.55 ± 0.05	1.75 ± 0.10	7.5 ± 0.05	16.00 ± 0.30	4.00 ± 0.10	8.00 ± 0.10	0.4 ± 0.10

NOTES

- Dimensions are in millimeters.
- Surface mount product is taped and reeled in accordance with EIA-481.
- Suffix - T13 = 13" Reel - 3,000 pieces per 16mm tape.
- Marking on Part - marking code (see page 2), date code, logo and pin one defined by polarity band.

ORDERING INFORMATION

BASE PART NUMBER (xx = Voltage)	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
1.5SMCxxA/ 1.5SMCxxCA	-LF	-T13	3,000	13"	98

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 9001:2015 certified.

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

COPYRIGHT © ProTek Devices 2010 - This literature is subject to all applicable copyright laws and is not for resale in any manner.

SPECIFICATIONS: ProTek reserves the right to change the electrical and or mechanical characteristics described herein without notice.

DESIGN CHANGES: ProTek reserves the right to discontinue product lines without notice and that the final judgement concerning selection and specifications is the buyer's and that in furnishing engineering and technical assistance. ProTek assumes no responsibility with respect to the selection or specifications of such products. ProTek makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ProTek assume any liability arising out of the application or use of any product or circuit and specifically disclaims any and all liability without limitation special, consequential or incidental damages.

LIFE SUPPORT POLICY: ProTek Devices products are not authorized for use in life support systems without written consent from the factory.