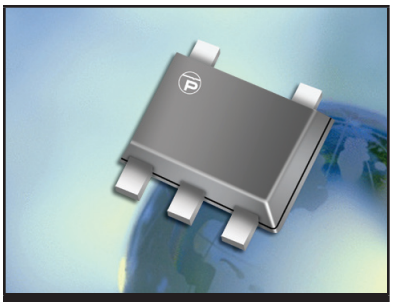
MULTI-LINE LOW CAPACITANCE TVS ARRAY



SOT-953 PACKAGE

DESCRIPTION

The VSMF05LC is a 5 Volt, low capacitance, multi-line TVS array. This device is designed to protect wireless telecommunications and portable electronic applications from the damaging effects of ESD and EFT. The VSMF05LC is available in a 4 line unidirectional configuration with a working voltage of 5 Volts and a minimum breakdown voltage of 6 Volts. This device is rated at 25 Watts peak pulse power, which is sufficient protection for tertiary type lightning threats at key interface locations.

Packaged in a miniature SOT-953, the VSMF05LC meets IEC 61000-4-2 (ESD) and 61000-4-4 (EFT) immunity requirements. Each device should be placed near a connector to provide the best protection against transients.

FEATURES

- Compatible with IEC 61000-4-2 (ESD): Air 15kV, Contact 8kV
- Compatible with IEC 61000-4-4 (EFT): 40A, 5/50ns
- 25 Watts Peak Pulse Power per Line(tp = 8/20µs)
- Monolithic Design
- Available in 5 Volts
- Low Clamping Voltage
- ESD Protection > 25 kilovolts
- Low Leakage Current
- Low Capacitance: 9pF
- Protects 4 Unidirectional Lines
- RoHS Compliant
- REACH Compliant

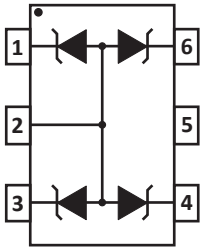
APPLICATIONS

- Communication Systems
- SMART Phones
- Portable Electronics
- Video Interfaces

MECHANICAL CHARACTERISTICS

- Molded JEDEC SOT-953Package
- Approximate Weight: 3 milligrams
- Lead-Free Nickel Paladium Gold Plating
- Solder Reflow Temperature - 260-270°C
- Flammability Rating UL 94V-0
- 8mm Tape and Reel per EIA Standard 481

PIN CONFIGURATION



TYPICAL DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified			
PARAMETER	SYMBOL	VALUE	UNITS
Peak Pulse Power (tp = 8/20µs) - See Figure 1	P_{PP}	25	Watts
Operating Temperature	T_L	-55 to 150	°C
Storage Temperature	T_{STG}	-55 to 150	°C
Maximum Forward Voltage @ 10mA	V_F	1.0	V

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified						
PART NUMBER	DEVICE MARKING	RATED STAND-OFF VOLTAGE V_{WM} VOLTS	MINIMUM BREAKDOWN VOLTAGE @ 1mA $V_{(BR)}$ VOLTS	MAXIMUM CLAMPING VOLTAGE (Fig. 2) @ I_P = 2A V_C VOLTS	MAXIMUM LEAKAGE CURRENT @V_{WM} I_D µA	TYPICAL CAPACITANCE (Note 1) @0V, 1MHz C pF
VSMF05LC	5A	5.0	6.0	12.0	1	9

NOTES
1. Pins 1, 3, 4, 5 to pin 2.

TYPICAL DEVICE CHARACTERISTICS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

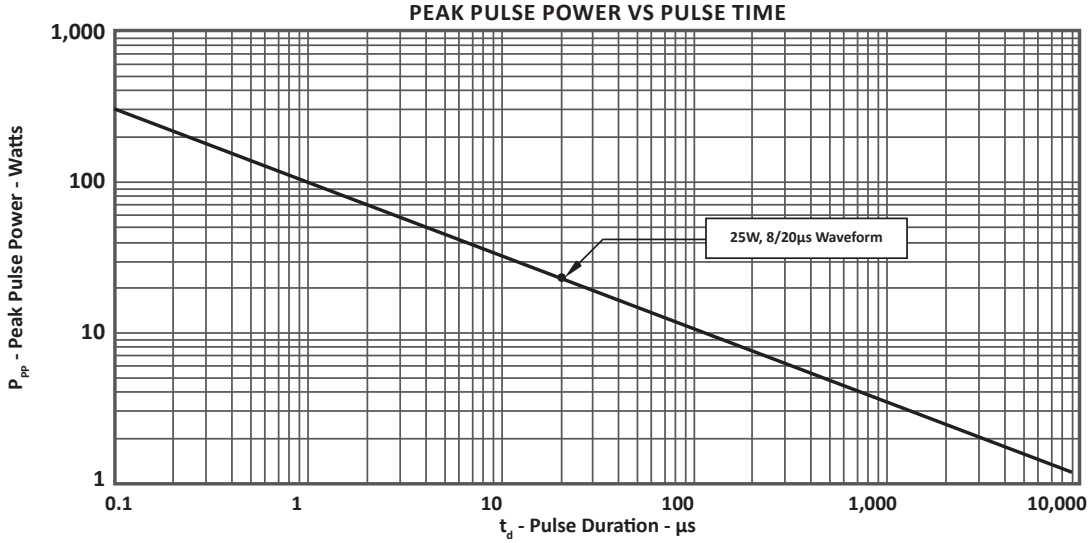


FIGURE 2
PULSE WAVE FORM

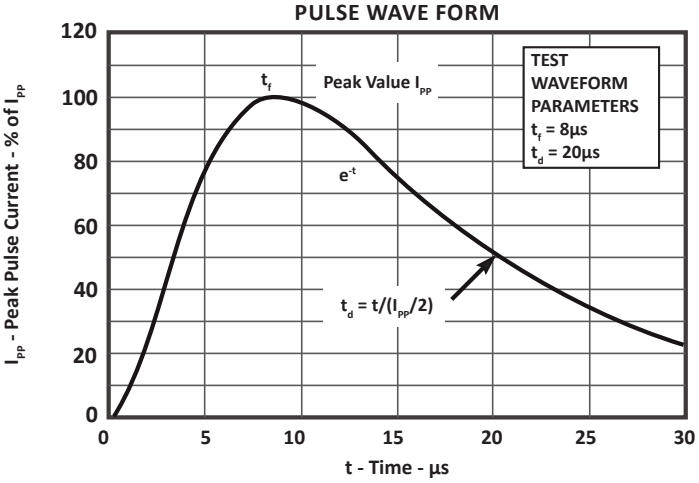
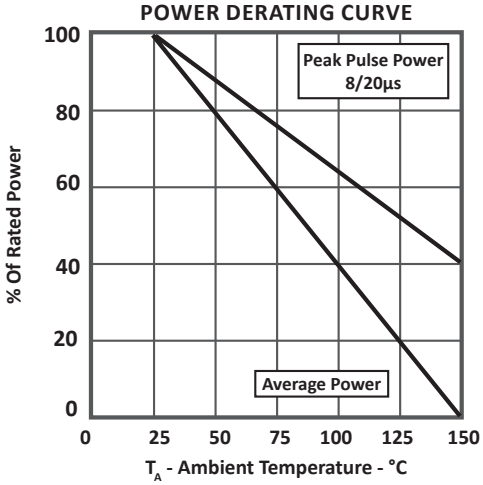


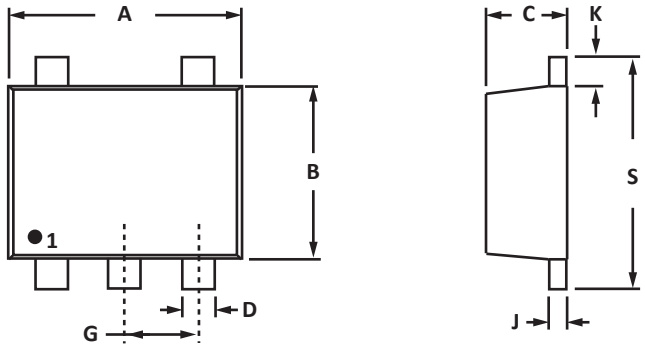
FIGURE 3
POWER DERATING CURVE



SOT-953 PACKAGE INFORMATION

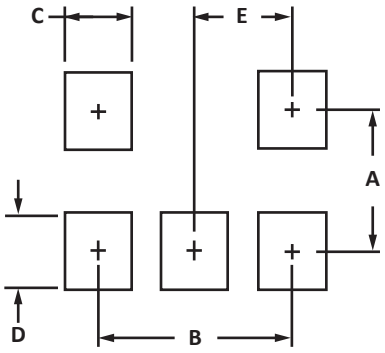
OUTLINE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.95	1.05	0.037	0.041
B	0.75	0.85	0.029	0.034
C	0.40	0.50	0.016	0.020
D	0.10	0.20	0.004	0.008
G	0.35	0.40	0.014	0.016
J	0.05	0.15	0.002	0.006
K	0.10	0.15	0.004	0.006
S	0.95	1.05	0.037	0.041

NOTES
1. Controlling dimension: inches.
2. Dimensioning and tolerances per ANSI Y14.5M, 1985.
3. Dimensions are exclusive of mold flash and metal burrs.

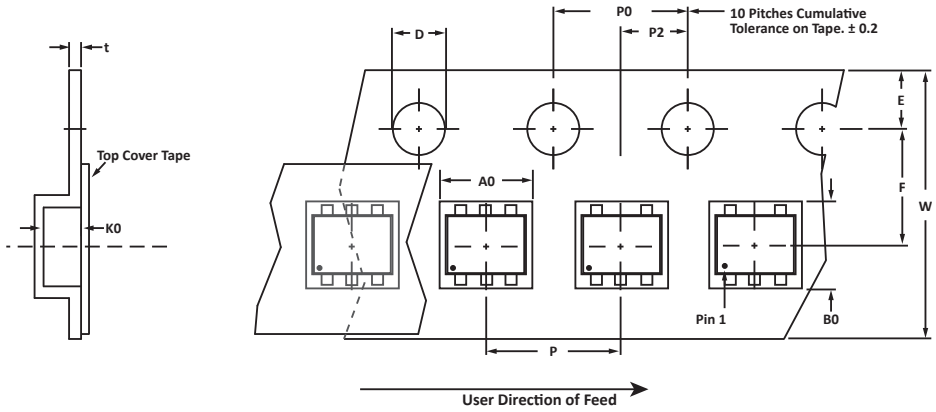


PAD LAYOUT DIMENSIONS		
DIM	MILLIMETERS	INCHES
	NOMINAL	NOMINAL
A	0.90	0.035
B	0.76	0.030
C	0.20	0.008
D	0.20	0.008
E	0.35	0.014

NOTES
1. Controlling dimension: inches.



TAPE AND REEL



SPECIFICATIONS												
REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P2	P	tmax
178mm (7")	8mm	1.17 ± 0.05	1.17 ± 0.05	0.66 ± 0.05	1.50 ± 0.10	1.75 ± 0.10	3.50 ± 0.05	8.00 ± 0.30	4.00 ± 0.10	2.00 ± 0.05	4.00 ± 0.10	0.25

NOTES
1. Dimensions are in millimeters.
2. Surface mount product is taped and reeled in accordance with EIA-481.
3. Suffix - T74 = 7" Reel - 4,000 pieces per 8mm tape.
4. Suffix - T13 = 13" Reel - 10,000 pieces per 8mm tape.
5. Marking on Part - marking code (see page 2) and pin one defined by dot on package.

Package outline, pad layout and tape specifications per document number 06061.R1 3/11.

ORDERING INFORMATION					
BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
VSMF05LC	-P	-T74	4,000	7"	n/a
VSMF05LC	-P	-T13	10,000	13"	n/a

COMPANY INFORMATION

COMPANY PROFILE

ProTek Devices, based in Tempe, Arizona USA, is a manufacturer of Transient Voltage Suppression (TVS) products designed specifically for the protection of electronic systems from the effects of lightning, Electrostatic Discharge (ESD), Nuclear Electromagnetic Pulse (NEMP), inductive switching and EMI/RFI. With over 25 years of engineering and manufacturing experience, ProTek designs TVS devices that provide application specific protection solutions for all electronic equipment/systems.

ProTek Devices Analog Products Division, also manufactures analog interface, control, RF and power management products.

CONTACT US

Corporate Headquarters
2929 South Fair Lane
Tempe, Arizona 85282
USA

By Telephone
General: 602-431-8101
Sales: 602-414-5109
Customer Service: 602-414-5114

By Fax
General: 602-431-2288

By E-mail:
Sales: sales@protekdevices.com
Customer Service: service@protekdevices.com
Technical Support: support@protekdevices.com

Web
www.protekdevices.com
www.protekanalog.com

COPYRIGHT © ProTek Devices 2007 - 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.