

## APPLICATIONS

- ✓ Computer Notebooks
- ✓ Communication Systems & Cellular Phones
- ✓ Printers
- ✓ Personal Digital Assitant(PDA)
- ✓ Video Equipment

## IEC COMPATIBILITY (EN61000-4)

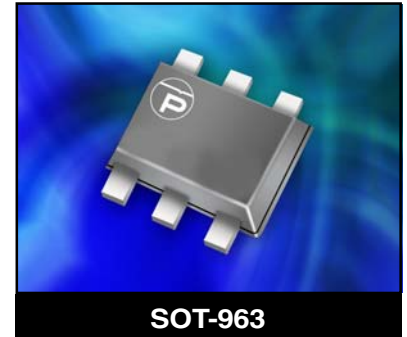
- ✓ 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- ✓ 61000-4-4 (EFT): 40A - 5/50ns

## FEATURES

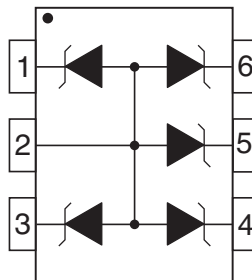
- ✓ 25 Watts Peak Pulse Power per Line ( $t_p=8/20\mu s$ )
- ✓ Monolithic Structure
- ✓ Available in 5 Volts
- ✓ Low Clamping Voltage
- ✓ ESD Protection > 40 kilovolts
- ✓ Low Leakage Current
- ✓ Low Capacitance: 9pF
- ✓ Protects 5 Unidirectional and 4 Bidirectional Lines
- ✓ RoHS Compliant

## MECHANICAL CHARACTERISTICS

- ✓ Molded JEDEC SOT-963 Package
- ✓ Weight 3 milligrams (Approximate)
- ✓ Available in Lead-Free Nickel-Paladium-Gold Plating
- ✓ Solder Reflow Temperature:  
Nickel-Paladium-Gold (Ni/Pd/Au) Sn/Ag/Cu: 260-270°C
- ✓ Consult Factory for Leaded Device Availability
- ✓ Flammability Rating UL 94V-0
- ✓ 8mm Tape and Reel Per EIA Standard 481
- ✓ Marking: Marking Code & Pin One Defined By Dot on Top of Package



## PIN CONFIGURATION



# VSMF05LCC

## DEVICE CHARACTERISTICS

### MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

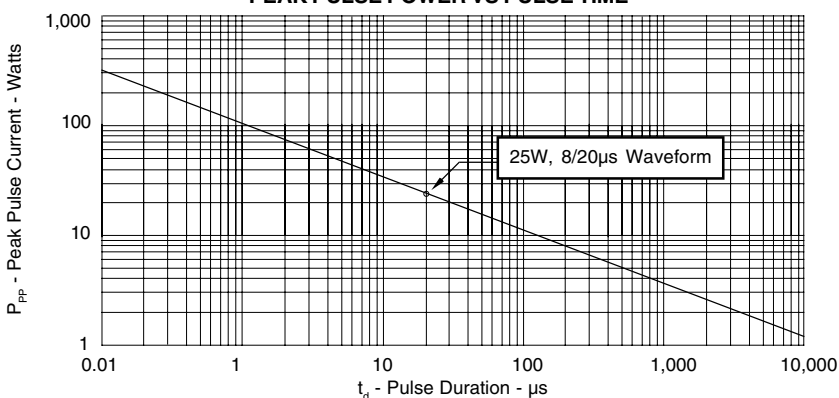
PARAMETER	SYMBOL	VALUE	UNITS
Peak Pulse Power ( $t_p = 8/20\mu s$ ) - See Figure 1	$P_{PP}$	25	Watts
Operating Temperature	$T_J$	-55°C to 150°C	°C
Storage Temperature	$T_{STG}$	-55°C to 150°C	°C
Maximum Forward Voltage @ 10mA	$V_F$	1.0	V

### ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

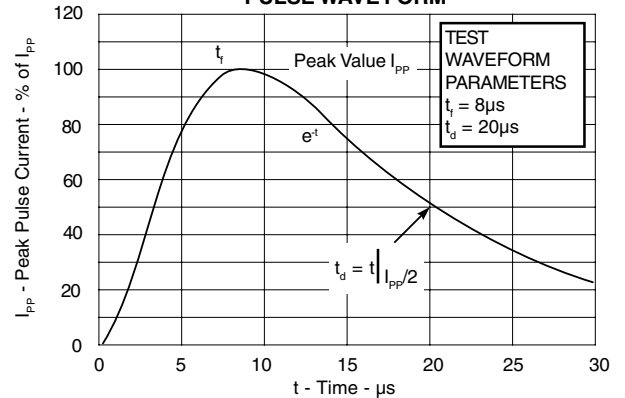
PART NUMBER	DEVICE MARKING	RATED STAND-OFF VOLTAGE	MINIMUM BREAKDOWN VOLTAGE	MAXIMUM CLAMPING VOLTAGE (See Fig. 2)	MAXIMUM LEAKAGE CURRENT	TYPICAL CAPACITANCE (See Note 1)
		$V_{WM}$ VOLTS	@ 1mA $V_{(BR)}$ VOLTS	@ 8/20 $\mu s$ $V_C @ I_{PP}$	@ $V_{WM}$ $I_b$ $\mu A$	0V @ 1 MHz C pF
VSMF05LCC	5B	5.0	6.0	12.0V @ 2.0A	1	9

**Note 1:** Pins 1, 3, 4, 5, or 6 to pin 2.

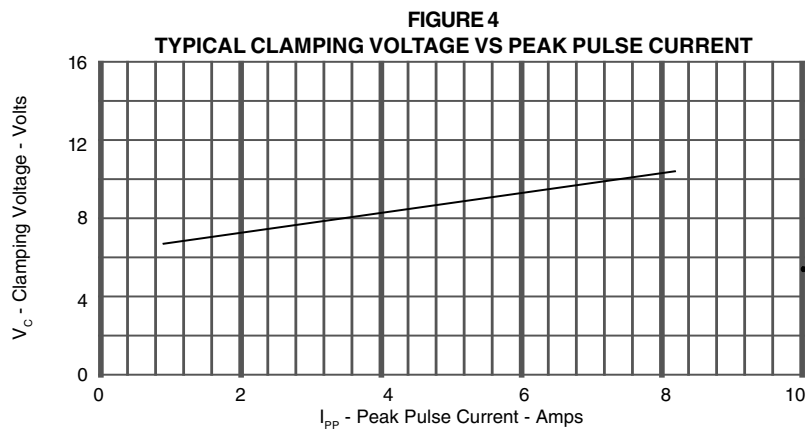
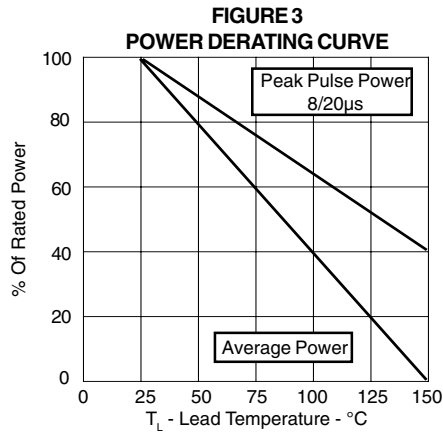
**FIGURE 1**  
PEAK PULSE POWER VS PULSE TIME



**FIGURE 2**  
PULSE WAVE FORM



## GRAPHS



# VSMF05LCC

## SOT-963 PACKAGE OUTLINE & DIMENSIONS

**PACKAGE OUTLINE**

**SOT-963**

**PACKAGE DIMENSIONS**

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.95	1.05	0.037	0.041
B	0.75	0.85	0.028	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	0.05	0.15	0.002	0.006
S	0.95	1.05	0.037	0.041

**MOUNTING PAD**

TYPICAL		
DIM	Millimeters	Inches
1	0.20	0.008
2	0.70	0.028
3	0.35	0.014
4	0.90	0.035
5	0.20	0.008

**NOTES**

- Dimensioning and tolerances per ANSI Y14.5M, 1985.
- Controlling Dimension: Inches
- Pin 3 is the cathode (Unidirectional Only).
- Dimensions are exclusive of mold flash and metal burrs.

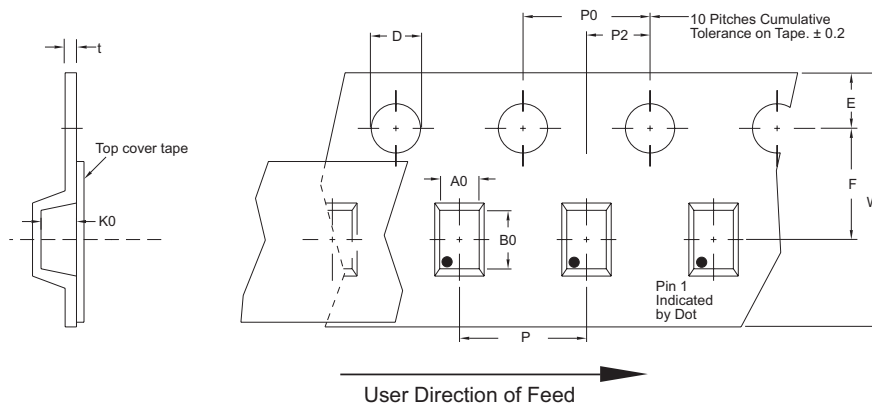
**TAPE & REEL/BULK ORDERING NOMENCLATURE**

- Surface mount product is taped and reeled in accordance with EIA-481.
- Suffix -T7 = 7 Inch Reel - 3,000 pieces per 8mm tape, i.e., *VSMF05LCC-P-T7*.
- Suffix -T13 = 13 Inch Reel - 10,000 pieces per 8mm tape, i.e., *VSMF05LCC-P-T13*.
- Suffix -P = Lead-Free, Nickel-Palladium-Gold Plating, i.e., *VSMF05LCC-P*.

**Outline & Dimensions: Rev 0 - 9/06, 06070**

Tape & Reel Specifications (Dimensions in millimeters)

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



**COPYRIGHT © ProTek Devices 2006**

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

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 Devices**  
 2929 South Fair Lane, Tempe, AZ 85282  
 Tel: 602-431-8101 Fax: 602-431-2288  
 E-Mail: [sales@protekdevices.com](mailto:sales@protekdevices.com)  
 Web Site: [www.protekdevices.com](http://www.protekdevices.com)