

## LOW CAPACITANCE TVS ARRAY

### APPLICATIONS

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

### IEC COMPATIBILITY (EN61000-4)

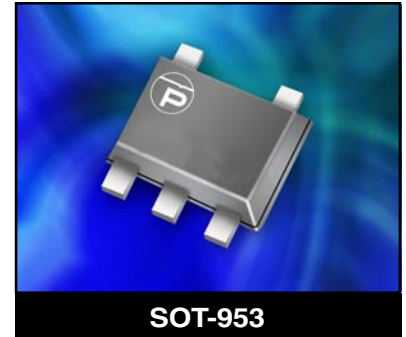
- ✓ 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- ✓ 61000-4-4 (EFT): 40A - 5/50ns

### FEATURES

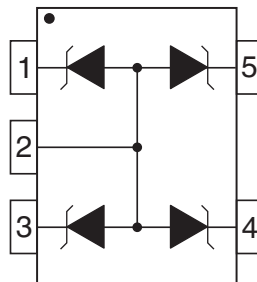
- ✓ 25 Watts Peak Pulse Power per Line ( $t_p=8/20\mu s$ )
- ✓ Monolithic Structure
- ✓ Available in 5 Volts
- ✓ Low Clamping Voltage
- ✓ ESD Protection > 40 kilovolts
- ✓ Low Leakage Current
- ✓ Low Capacitance: 9pF
- ✓ Protects Four (4) Unidirectional Lines
- ✓ RoHS Compliant

### MECHANICAL CHARACTERISTICS

- ✓ Molded JEDEC SOT-953 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



## DEVICE CHARACTERISTICS

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

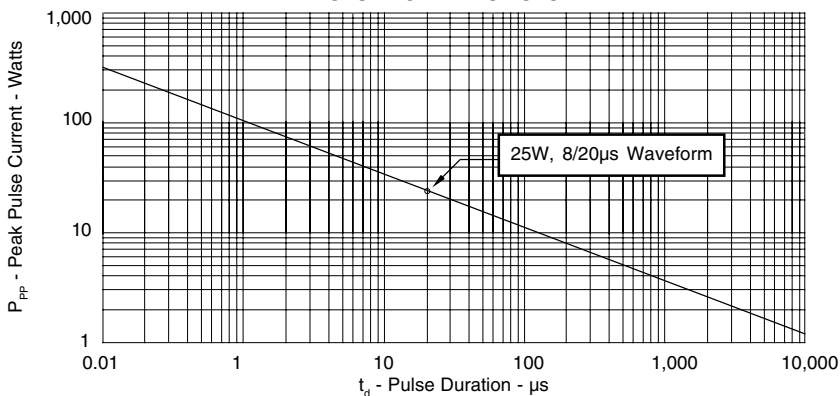
| PARAMETER                                             | SYMBOL    | VALUE          | UNITS |
|-------------------------------------------------------|-----------|----------------|-------|
| Peak Pulse Power ( $t_p = 8/20\mu s$ ) - See Figure 1 | $P_{PP}$  | 25             | Watts |
| Operating Temperature                                 | $T_J$     | -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

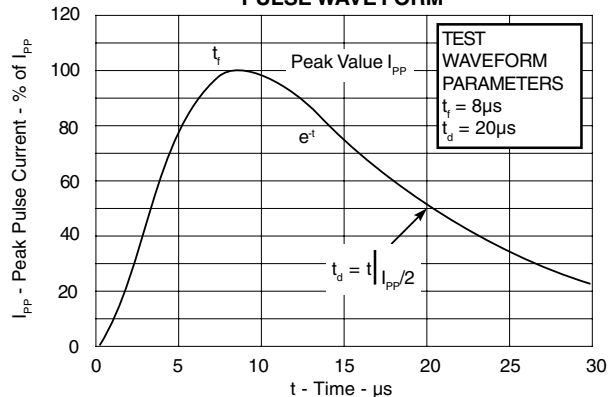
| PART NUMBER | DEVICE MARKING | RATED STAND-OFF VOLTAGE | MINIMUM BREAKDOWN VOLTAGE    | MAXIMUM CLAMPING VOLTAGE (See Fig. 2) | MAXIMUM LEAKAGE CURRENT        | TYPICAL CAPACITANCE (See Note 1) |
|-------------|----------------|-------------------------|------------------------------|---------------------------------------|--------------------------------|----------------------------------|
|             |                | $V_{WM}$<br>VOLTS       | @ 1mA<br>$V_{(BR)}$<br>VOLTS | @ 8/20 $\mu s$<br>$V_C$ @ $I_{PP}$    | @ $V_{WM}$<br>$I_b$<br>$\mu A$ | 0V @ 1 MHz<br>C<br>pF            |
| VSMF05LC    | 5A             | 5.0                     | 6.0                          | 12.0V @ 2.0A                          | 1                              | 9                                |

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

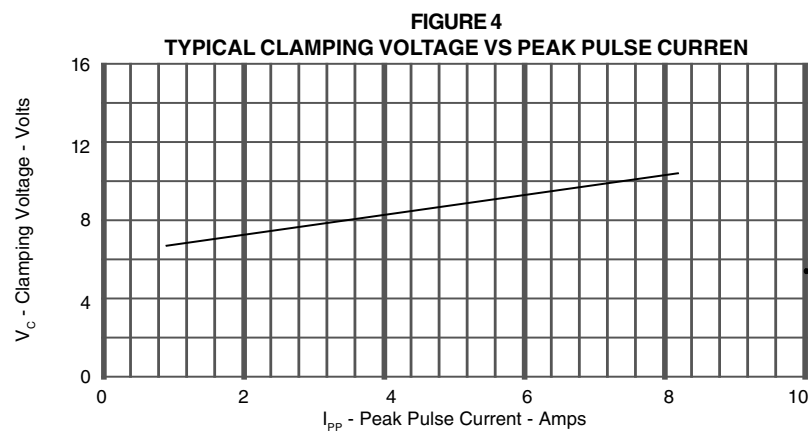
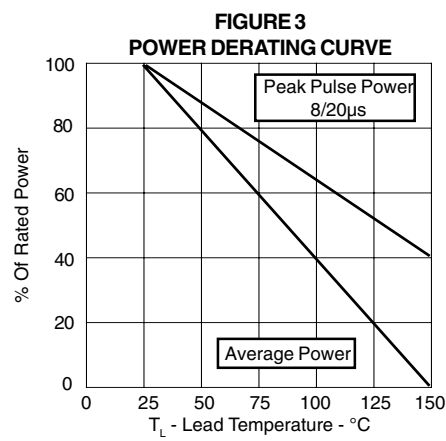
**FIGURE 1**  
**PEAK PULSE POWER VS PULSE TIME**



**FIGURE 2**  
**PULSE WAVE FORM**



GRAPHS



# VSMF05LC

## SOT-953 PACKAGE OUTLINE & DIMENSIONS

PACKAGE OUTLINE

SOT-953

PACKAGE DIMENSIONS

| DIM | MILLIMETERS |      | INCHES |       |
|-----|-------------|------|--------|-------|
|     | MIN         | MAX  | MIN    | MAX   |
| A   | 0.95        | 1.05 | 0.037  | 0.041 |
| B   | 0.75        | 0.80 | 0.029  | 0.034 |
| C   | 0.40        | 0.50 | 0.019  | 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

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

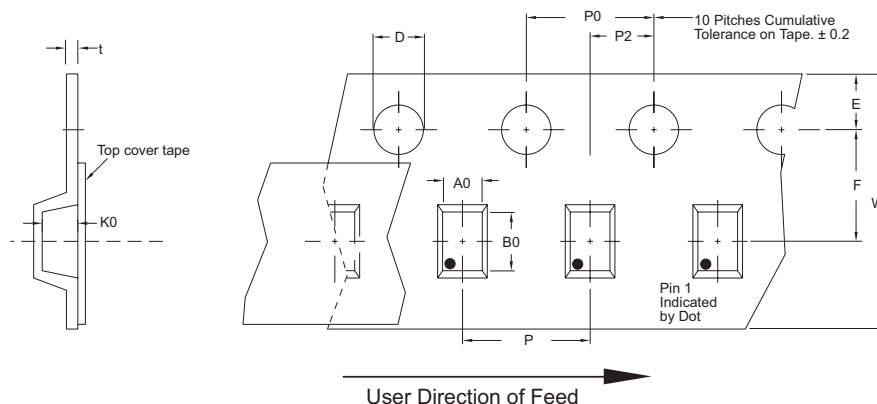
TAPE & REEL/BULK ORDERING NOMENCLATURE

1. Surface mount product is taped and reeled in accordance with EIA-481.
2. Suffix -T7 = 7 Inch Reel - 3,000 pieces per 8mm tape, i.e., *VSMF05LC-P-T7*.
3. Suffix -T13 = 13 Inch Reel - 10,000 pieces per 8mm tape, i.e., *VSMF05LC-P-T13*.
4. Suffix -P = Lead-Free, Nickel-Palladium-Gold Platin, i.e., *VSMF05LC-P-T7*.

Outline & Dimensions: Rev 0 - 9/06, 06061

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 |



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