

STANDARD TVS ARRAY

APPLICATIONS

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

IEC COMPATIBILITY (EN61000-4)

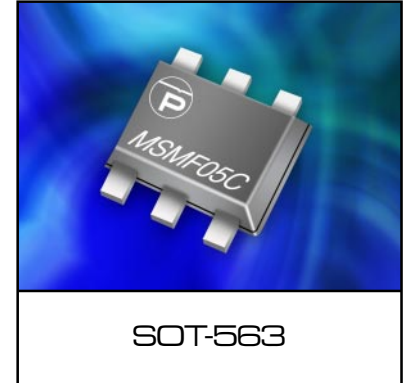
- ✓ 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- ✓ 61000-4-4 (EFT): 40A - 5/50ns

FEATURES

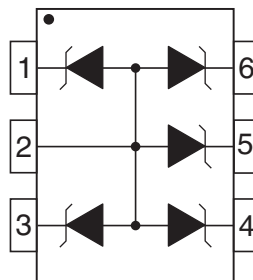
- ✓ 100 Watts Peak Pulse Power per Line ($t_p=8/20\mu s$)
- ✓ Monolithic Structure
- ✓ Available in 4 Voltage Types: 5V to 24V
- ✓ Low Clamping Voltage
- ✓ ESD Protection > 40 kilovolts
- ✓ Low Leakage Current
- ✓ Protects Four (4) Bidirectional Lines and Five (5) Unidirectional Lines
- ✓ RoHS Compliant on Lead-Free Versions

MECHANICAL CHARACTERISTICS

- ✓ Molded JEDEC SOT-563 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, 96/3.5/0.5: 260-270°C
- ✓ 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}	100	Watts
Operating Temperature	T_J	-55°C to 150°C	°C
Storage Temperature	T_{STG}	-55°C to 150°C	°C

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 CLAMPING VOLTAGE (See Fig. 2)	MAXIMUM LEAKAGE CURRENT	TYPICAL CAPACITANCE (See Note 1)
		V_{WM} VOLTS	@ 1mA $V_{(BR)}$ VOLTS	@ $I_p = 5A$ V_C VOLTS	@ 8/20 μs $V_C @ I_{PP}$	@ V_{WM} I_D μA	0V @ 1 MHz C pF
MSMF05C	B	5.0	6.0	9.8	12.0V @ 9.0A	1	40
MSMF12C	D	12.0	13.3	-	23.8V @ 4.2A	1	20
MSMF15C	F	15.0	16.7	-	33.3V @ 3.0A	1	15
MSMF24C	H	24.0	26.7	-	55.5V @ 1.8A	1	10

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

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

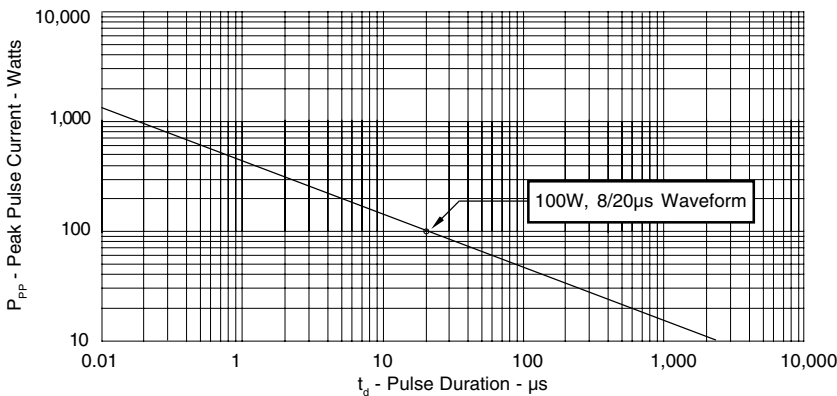
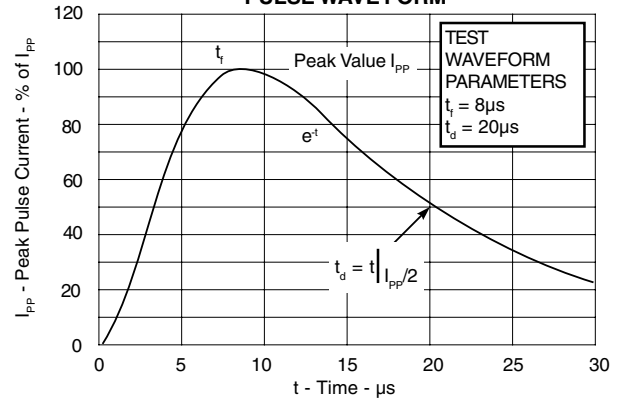
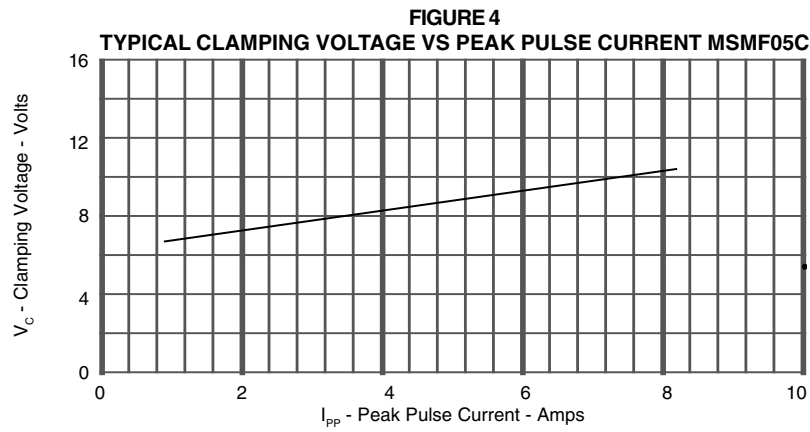
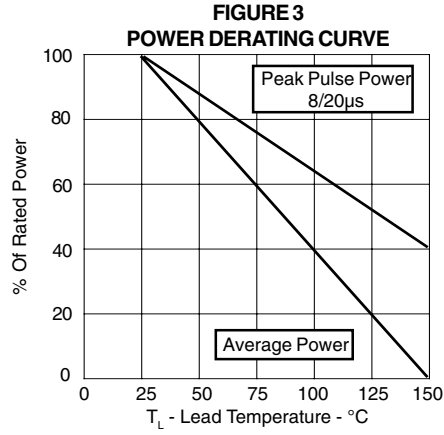


FIGURE 2
PULSE WAVE FORM



GRAPHS



PACKAGE OUTLINE & DIMENSIONS

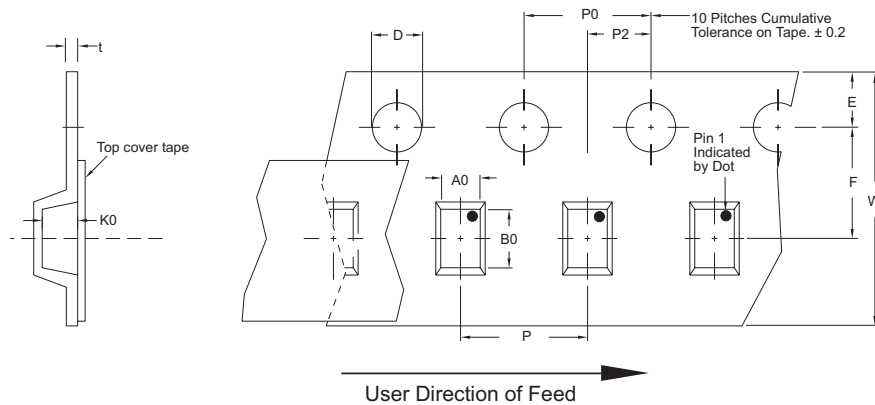
PACKAGE OUTLINE		SOT-563		
PACKAGE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.50	1.70	0.059	0.067
B	1.10	1.30	0.043	0.051
C	0.50	0.60	0.020	0.024
D	0.17	0.27	0.007	0.011
G	0.50 BSC	-	0.020 BSC	-
J	0.08	0.16	0.003	0.007
K	0.10	0.30	0.004	0.012
S	1.50	1.70	0.059	0.067

MOUNTING PAD																							
<table border="1" style="margin: auto;"> <thead> <tr> <th colspan="3">TYPICAL</th> </tr> <tr> <th>DIM</th> <th>Millimeters</th> <th>Inches</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">0.30</td> <td style="text-align: center;">0.012</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">1.02</td> <td style="text-align: center;">0.040</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">0.51</td> <td style="text-align: center;">0.020</td> </tr> <tr> <td style="text-align: center;">4</td> <td style="text-align: center;">1.40</td> <td style="text-align: center;">0.055</td> </tr> <tr> <td style="text-align: center;">5</td> <td style="text-align: center;">0.51</td> <td style="text-align: center;">0.020</td> </tr> </tbody> </table>			TYPICAL			DIM	Millimeters	Inches	1	0.30	0.012	2	1.02	0.040	3	0.51	0.020	4	1.40	0.055	5	0.51	0.020
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NOTES	
<ol style="list-style-type: none"> 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	
<ol style="list-style-type: none"> 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., <i>MSMF05C-T7</i>. 3. Suffix -T13 = 13 Inch Reel - 10,000 pieces per 8mm tape, i.e., <i>MSMF05C-T13</i>. 4. Suffix -P = Lead-Free, Nickel-Paladium-Gold Plating, i.e., <i>MSMF05C-P-T-7</i>. 	
Outline & Dimensions: Rev1 - 9/05, 06051	

Tape & Reel Specifications (Dimensions in millimeters)

Reel Dia.	Tape Width	A0	B0	K0	D	E	F	W	P0	P2	P	tmax
178mm (7")	8mm	1.78 ± 0.05	1.78 ± 0.05	0.69 ± 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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