

**APPLICATIONS**

- ✓ Wireless Communication Circuits
- ✓ RS-422, RS-432 & RS-485
- ✓ Low Voltage ASICs
- ✓ Portable Electroincs

**IEC COMPATIBILITY (EN61000-4)**

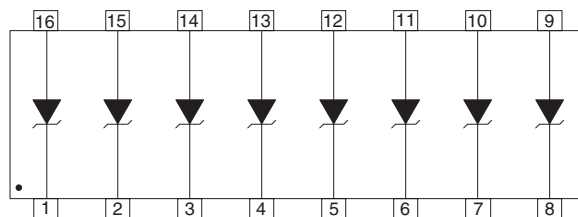
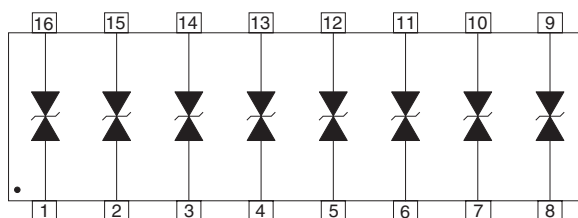
- ✓ 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- ✓ 61000-4-4 (EFT): 40A - 5/50ns
- ✓ 61000-4-5 (Surge): 12A, 8/20 $\mu$ s Level 1 (Line-Ground) & Level 2 (Line-Line)

**FEATURES**

- ✓ 500 Watts Peak Pulse Power per Line (tp=8/20 $\mu$ s)
- ✓ Unidirectional & Bidirectional Configurations
- ✓ ESD Protection > 40 kilovolts
- ✓ Available in Multiple Voltage Types: 3.3V to 24V
- ✓ Protects up to Eight (8) Lines
- ✓ RoHS Compliant

**MECHANICAL CHARACTERISTICS**

- ✓ Molded JEDEC SO-16 Package
- ✓ Weight 0.15 grams (Approximate)
- ✓ Available in Lead-Free Pure-Tin Plating(Annealed)
- ✓ Solder Reflow Temperature:  
Pure-Tin - Sn, 100: 260-270°C
- ✓ Consult Factory for Leaded Device Availability
- ✓ Flammability Rating UL 94V-0
- ✓ 16mm Tape and Reel per EIA Standard 481
- ✓ Packaging: 25 Pieces Per Tube
- ✓ Marking: Logo, Part Number, Date Code & Pin One Defined By Dot on Top of Package


**SO-16**
**PIN CONFIGURATIONS**
**UNIDIRECTIONAL CONFIGURATION**

**BIDIRECTIONAL CONFIGURATION**


# SM1603 thru SM1624C

## 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	$P_{PP}$	500	Watts
Operating Temperature	$T_L$	-55 to 150	°C
Storage Temperature	$T_{STG}$	-55 to 150	°C

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

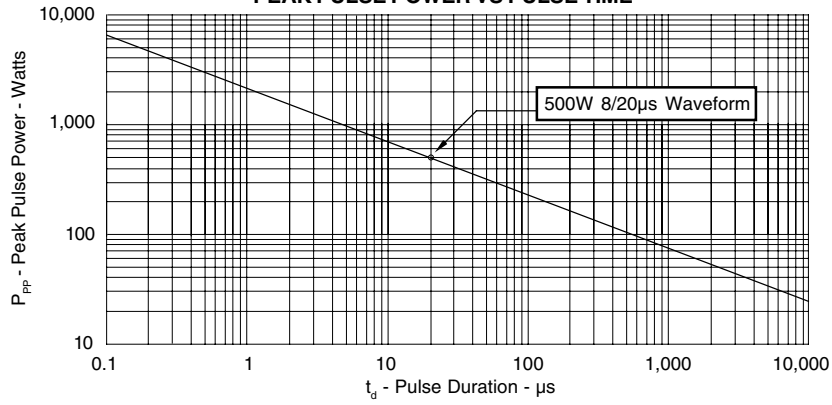
PART NUMBER (See Note 1)	RATED STAND-OFF VOLTAGE  $V_{WM}$ VOLTS	MINIMUM BREAKDOWN VOLTAGE  @ 1mA $V_{(BR)}$ VOLTS	MAXIMUM CLAMPING VOLTAGE (See Fig. 2)  @ $I_P = 1A$ $V_C$ VOLTS	MAXIMUM CLAMPING VOLTAGE (See Fig. 2)  @ 8/20 $\mu s$ $V_C @ I_{PP}$	MAXIMUM LEAKAGE CURRENT  @ $V_{WM}$ $I_b$ $\mu A$	MAXIMUM CAPACITANCE  0V @ 1 MHz C pF	TEMPERATURE COEFFICIENT OF $V_{(BR)}$  $qV_{(BR)}$ mV/°C
SM1603	3.3	4.0	7.0	10.9V @ 43A	125	800	-3
SM1603C	3.3	4.0	7.0	10.9V @ 43A	125	450	-3
SM1605	5.0	6.0	9.8	13.5V @ 42A	10	550	3
SM1605C	5.0	6.0	9.8	13.5V @ 42A	10	310	3
SM1608	8.0	8.5	13.4	16.9V @ 34A	10	500	9
SM1608C	8.0	8.5	13.4	16.9V @ 34A	10	280	9
SM1612	12.0	13.3	19.0	25.9V @ 21A	2	185	16
SM1612C	12.0	13.3	19.0	25.9V @ 21A	2	105	16
SM1615	15.0	16.7	25.5	30.0V @ 17A	2	140	17
SM1615C	15.0	16.7	25.5	30.0V @ 17A	2	80	17
SM1624	24.0	26.7	40.0	49.0V @ 12A	2	88	26
SM1624C	24.0	26.7	40.0	49.0V @ 12A	2	50	26

**Note 1:** Part numbers with a "C" suffix are bidirectional devices.

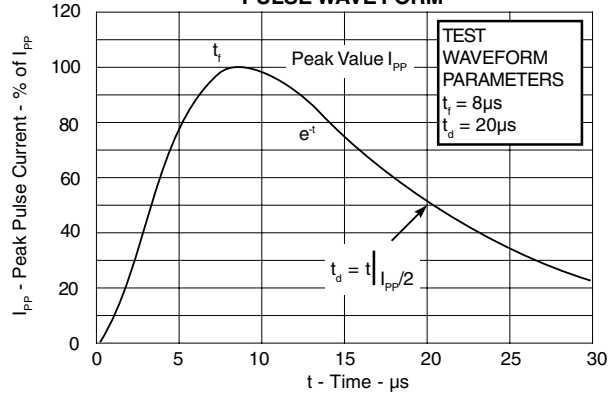
**Note 2:**  $V_F = 1.5$  Volts @ 100mA, 300 $\mu s$  (square wave) unidirectional devices only.

GRAPHS

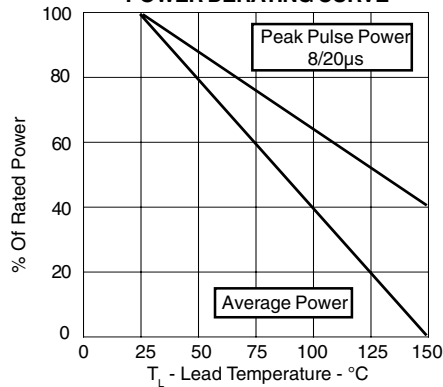
**FIGURE 1**  
**PEAK PULSE POWER VS PULSE TIME**



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

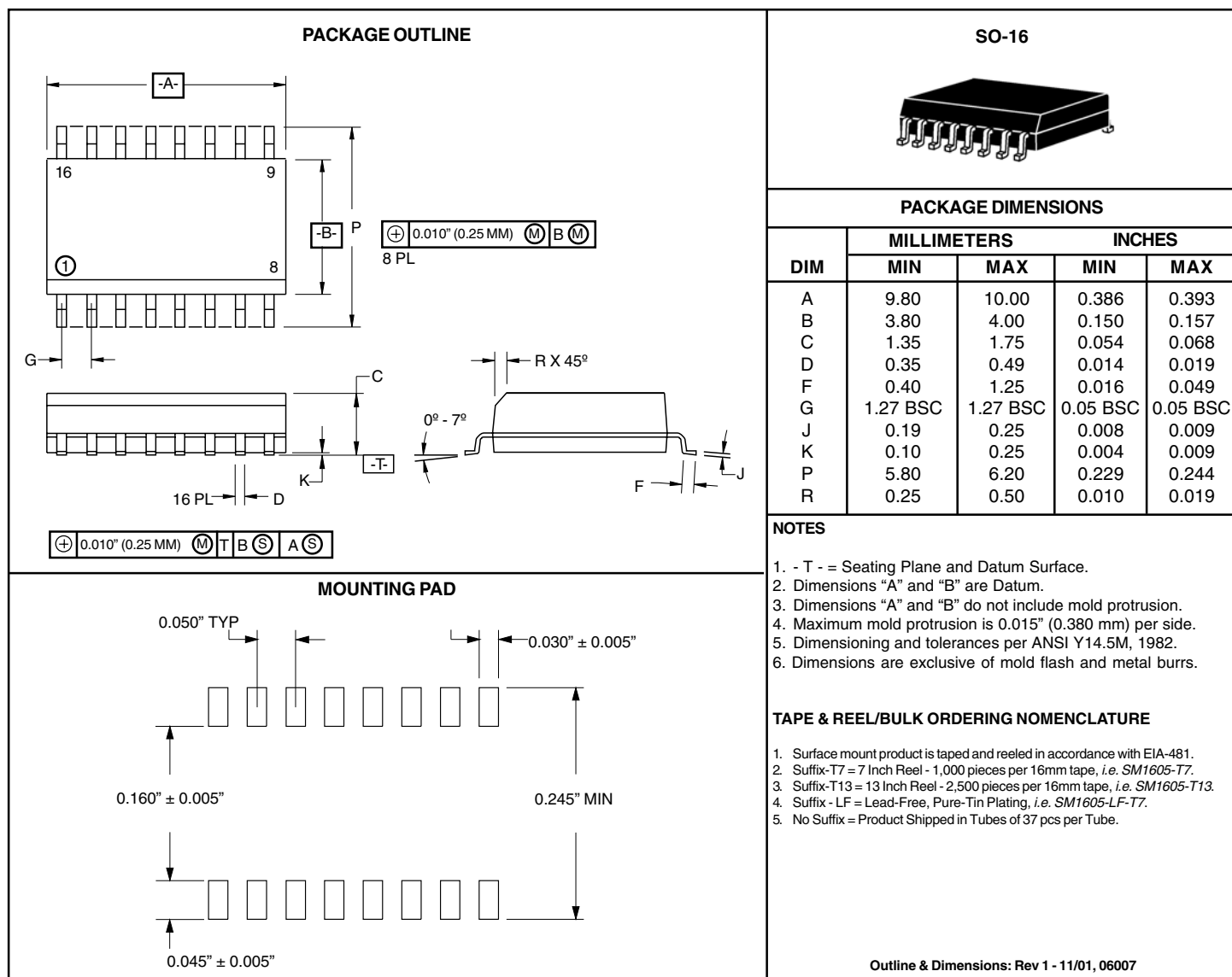


**FIGURE 3**  
**POWER DERATING CURVE**



# SM1603 thru SM1624C

## SO-16 PACKAGE OUTLINE & DIMENSIONS



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