

STANDARD CAPACITANCE TVS ARRAY

APPLICATIONS

- ✓ Parallel Port
- ✓ RS-232, RS-422 & RS-423 Data Lines
- ✓ Industrial & Instrumentation Equipment
- ✓ Board Level Interface Protection
- ✓ I/O Port Protection

IEC COMPATIBILITY (EN61000-4)

- ✓ 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- ✓ 61000-4-4 (EFT): 40A - 5/50ns
- ✓ 61000-4-5 (Surge): 24A, 8/20 μ s - Level 2(Line-Gnd) & Level 3(Line-Line)

FEATURES

- ✓ 1500 Watts Peak Pulse Power per Line (tp=8/20 μ s)
- ✓ ESD Protection > 40 kilovolts
- ✓ Protection for 8 or 9 Bidirectional Data Lines
- ✓ Externally Low Clamping Voltage
- ✓ Available in 4 Voltage Types Ranging From 5V to 24V
- ✓ Bidirectional Configuration
- ✓ Monolithic Design
- ✓ RoHS Compliant in Lead-Free Versions

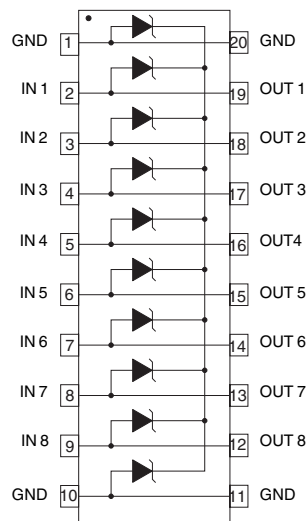
MECHANICAL CHARACTERISTICS

- ✓ Molded JEDEC SO-20WB (Wide Body) Package
- ✓ Weight 0.5 grams (Approximate)
- ✓ Available in Tin-Lead or Lead-Free Pure-Tin Plating(Annealed)
- ✓ Solder Reflow Temperature:
 - Tin-Lead - Sn/Pb, 85/15: 240-245°C
 - Pure-Tin - Sn, 100: 260-270°C
- ✓ Flammability rating UL 94V-0
- ✓ 24mm Tape and Reel Per EIA Standard 481
- ✓ Marking: Logo, Part Number, Date Code & Pin One Defined By Dot on Top of Package

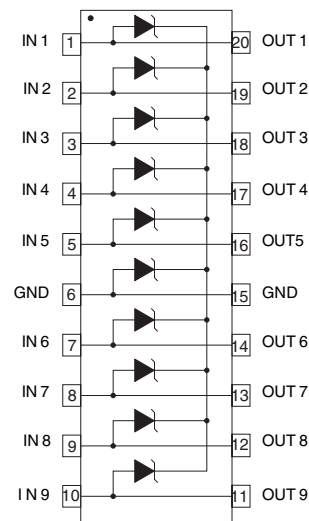


PIN CONFIGURATIONS

EQUAL TO 8 BIDIRECTIONAL TVS DEVICES



EQUAL TO 9 BIDIRECTIONAL TVS DEVICES



SM20MT05C thru SM20MT24C

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}	1500	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 (See Note 1)	RATED STAND-OFF VOLTAGE V_{WM} VOLTS	MINIMUM BREAKDOWN VOLTAGE @ 1mA $V_{(BR)}$ VOLTS	MAXIMUM CLAMPING VOLTAGE (See Fig. 2) @ $I_{PP} = 10A$ V_C VOLTS	MAXIMUM CLAMPING VOLTAGE (See Fig. 2) @ $I_{PP} = 25A$ V_C VOLTS	MAXIMUM LEAKAGE CURRENT @ V_{WM} I_D μA	MAXIMUM CAPACITANCE @ V_{WM} , 1 MHz C pF
SM20MT05C	5.0	6.5	9.5	11.0	50	700
SM20MT08C	8.0	10.0	13.0	17.0	10	360
SM20MT15C	15.0	18.0	23.0	26.0	4	250
SM20MT24C	24.0	25.0	31.0	36.0	4	140

Note 1: These devices are bidirectional only. Electrical characteristics apply in both directions. The monolithic TVS array is based on 10 unidirectional P/N junctions with a common cathode and can be configured to offer 8 to 9 bidirectional lines of protection. The inputs are symmetrical and can be reversed for specific application layout requirements.

GRAPHS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

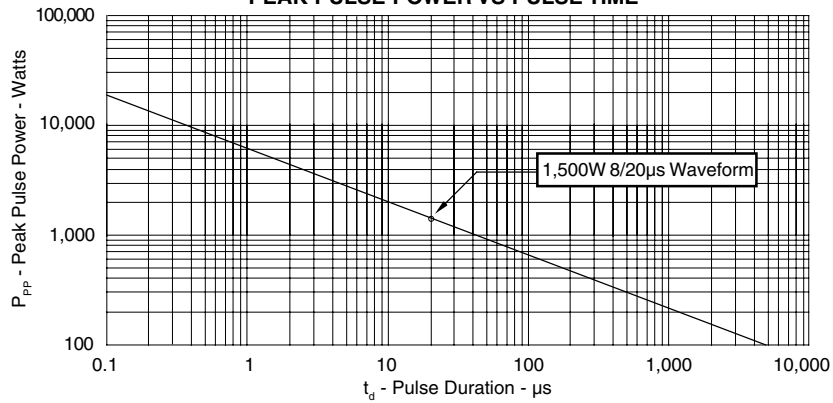


FIGURE 2
PULSE WAVE FORM

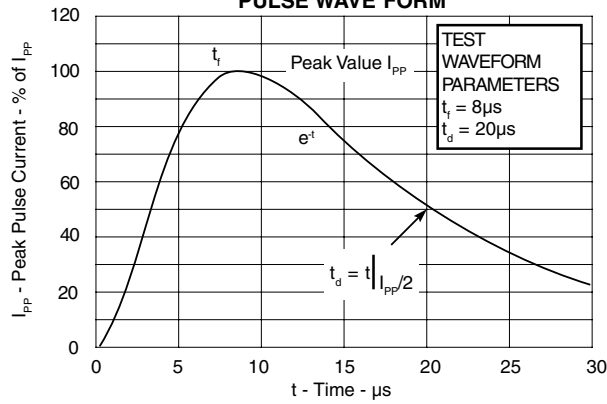
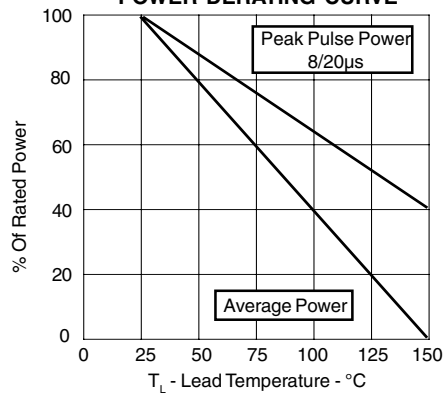
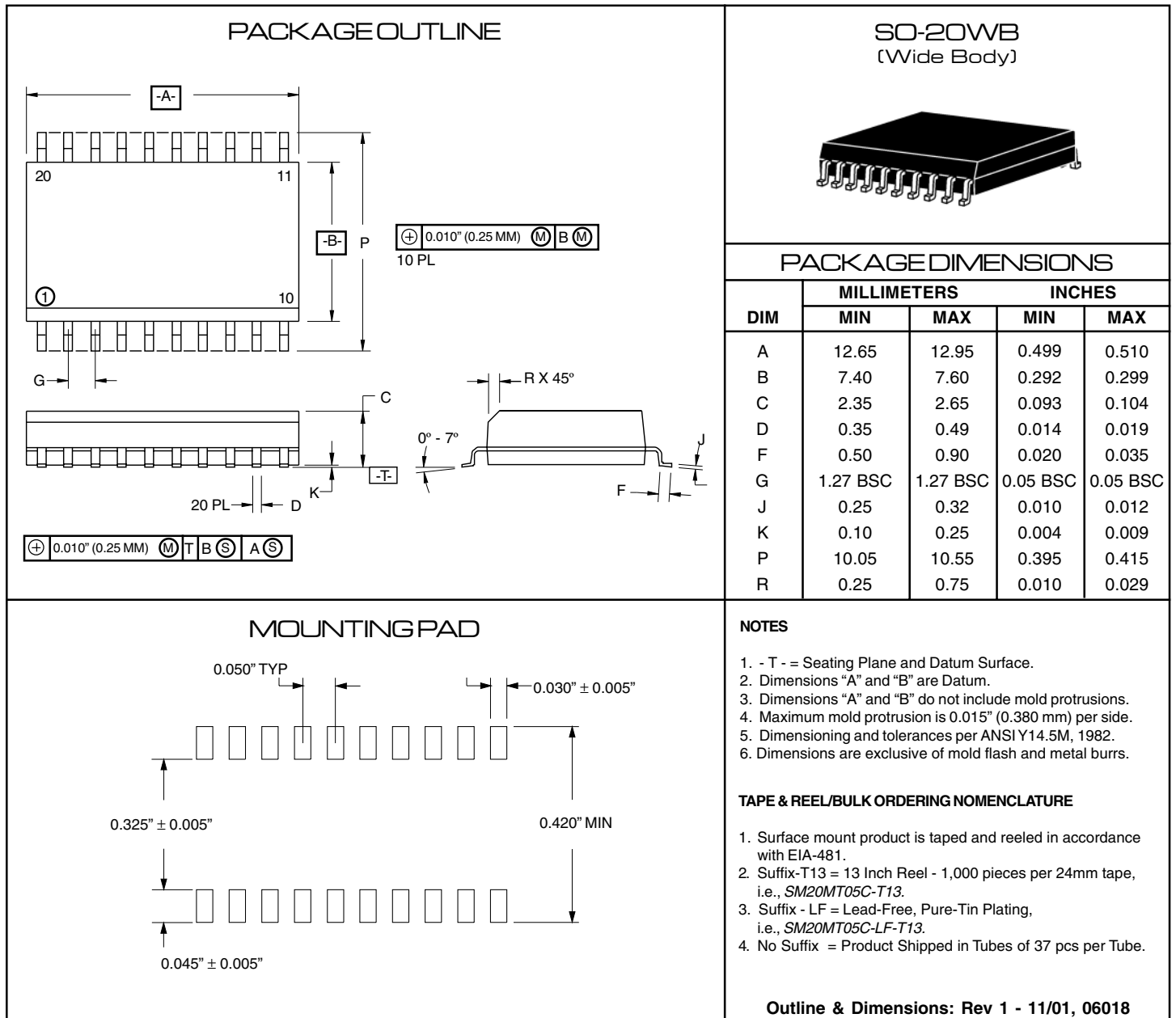


FIGURE 3
POWER DERATING CURVE



SM20MT05C thru SM20MT24C

PACKAGE OUTLINE & DIMENSIONS



MOUNTING PAD

NOTES

- T - = Seating Plane and Datum Surface.
- Dimensions "A" and "B" are Datum.
- Dimensions "A" and "B" do not include mold protrusions.
- Maximum mold protrusion is 0.015" (0.380 mm) per side.
- Dimensioning and tolerances per ANSI Y14.5M, 1982.
- 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-T13 = 13 Inch Reel - 1,000 pieces per 24mm tape, i.e., SM20MT05C-T13.
- Suffix - LF = Lead-Free, Pure-Tin Plating, i.e., SM20MT05C-LF-T13.
- No Suffix = Product Shipped in Tubes of 37 pcs per Tube.

Outline & Dimensions: Rev 1 - 11/01, 06018

COPYRIGHT © ProTek Devices 2005

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
 Web Site: www.protekdevices.com