

## APPLICATIONS

- ✓ Ethernet - 10/100 Base T
- ✓ FireWire, SCSI & USB
- ✓ RS-485
- ✓ xDSL Interfaces
- ✓ Cellular Phone Terminals

## IEC COMPATIBILITY (EN61000-4)

- ✓ 61000-4-2 (ESD): Air - 15kV, Contact - 8kV

## FEATURES

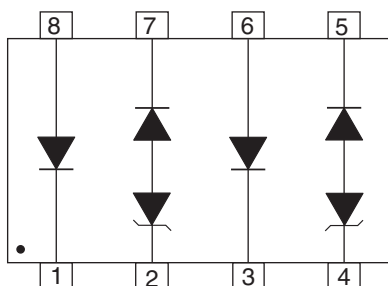
- ✓ 500 Watts Peak Pulse Power per Line (tp=8/20µs)
- ✓ Bidirectional and Unidirectional Configurations
- ✓ Available in Multiple Voltage Types Ranging From 3V to 24V
- ✓ Ultra Low Capacitance: 3pF
- ✓ RoHS Compliant

## MECHANICAL CHARACTERISTICS

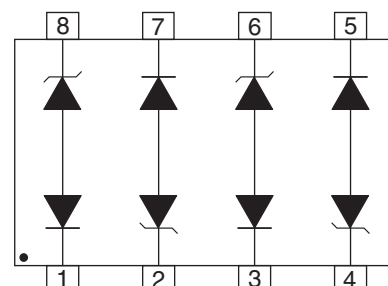
- ✓ Molded JEDEC SO-8
- ✓ Weight 70 milligrams (Approximate)
- ✓ Available in Lead-Free Pure-Tin Plating(Annealed)
- ✓ Solder Reflow Temperature:  
Pure-Tin - Sn, 100: 260-270°C
- ✓ Flammability Rating UL 94V-0
- ✓ 12mm Tape and Reel Per EIA Standard 481
- ✓ Marking: Marking Code, Logo, Date Code & Pin One Defined By Dot on Top of Package


**SO-8**

## PIN CONFIGURATIONS



Unidirectional



Bidirectional

# USB50803 thru USB50824C

## 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 Notes 1-4)	DEVICE MARKING	RATED STAND-OFF VOLTAGE	MINIMUM BREAKDOWN VOLTAGE	MAXIMUM CLAMPING VOLTAGE (See Fig. 2)	MAXIMUM CLAMPING VOLTAGE (See Fig. 2)	MAXIMUM LEAKAGE CURRENT	MAXIMUM CAPACITANCE
		$V_{WM}$ VOLTS	@ 1mA $V_{(BR)}$ VOLTS	@ $I_p = 1A$ $V_C$ VOLTS	@ 8/20 $\mu s$ $V_C @ I_{PP}$	@ $V_{WM}$ $I_b$ $\mu A$	@ 0V, 1 MHz C pF
USB50803	GA	3.3	4.5	8.0	11.0V @ 5.0A	125	3
USB50805	GB	5.0	6.0	10.8	13.0V @ 5.0A	20	3
USB50812	GC	12.0	13.3	19.0	26.0V @ 5.0A	1	3
USB50815	GD	15.0	16.7	24.0	32.0V @ 5.0A	1	3
USB50824	GE	24.0	26.7	43.0	57.0V @ 5.0A	1	3
USB50803C	UGA	3.3	4.5	8.0	11.0V @ 5.0A	125	3
USB50805C	UGB	5.0	6.0	10.8	13.0V @ 5.0A	20	3
USB50812C	UGC	12.0	13.3	19.0	26.0V @ 5.0A	1	3
USB50815C	UGD	15.0	16.7	24.0	32.0V @ 5.0A	1	3
USB50824C	UGE	24.0	26.7	43.0	57.0V @ 5.0A	1	3

**Note 1:** Do not apply surge in the "forward" direction of the TVS.

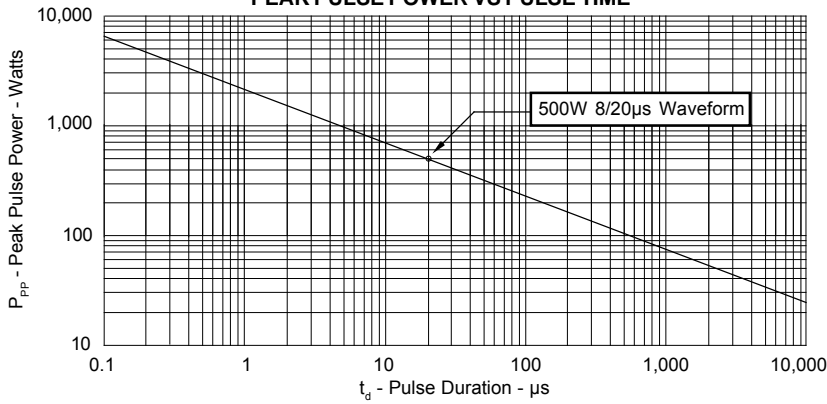
**Note 2:** PIV typically greater than 100V for each rectifier die.

**Note 3:** Electrical characteristics apply to pins 8 to 1, 2 to 7, 6 to 3 and 4 to 5 for the bidirectional configuration.

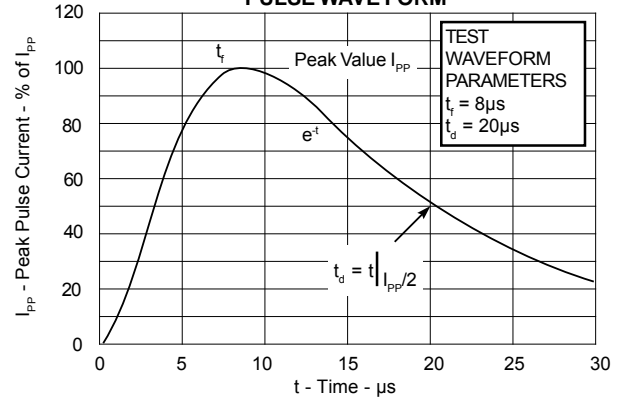
**Note 4:** Electrical characteristics apply to pin 7 to 2, and 5 to 4 for the unidirectional configuration.

**GRAPHS**

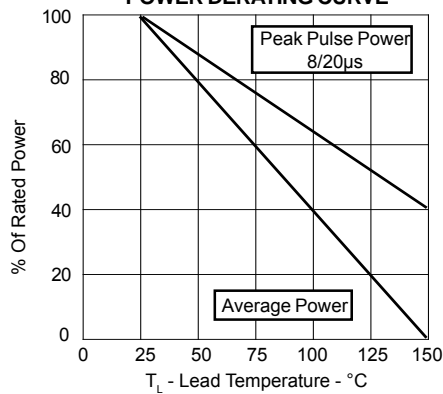
**FIGURE 1  
 PEAK PULSE POWER VS PULSE TIME**



**FIGURE 2  
 PULSE WAVE FORM**

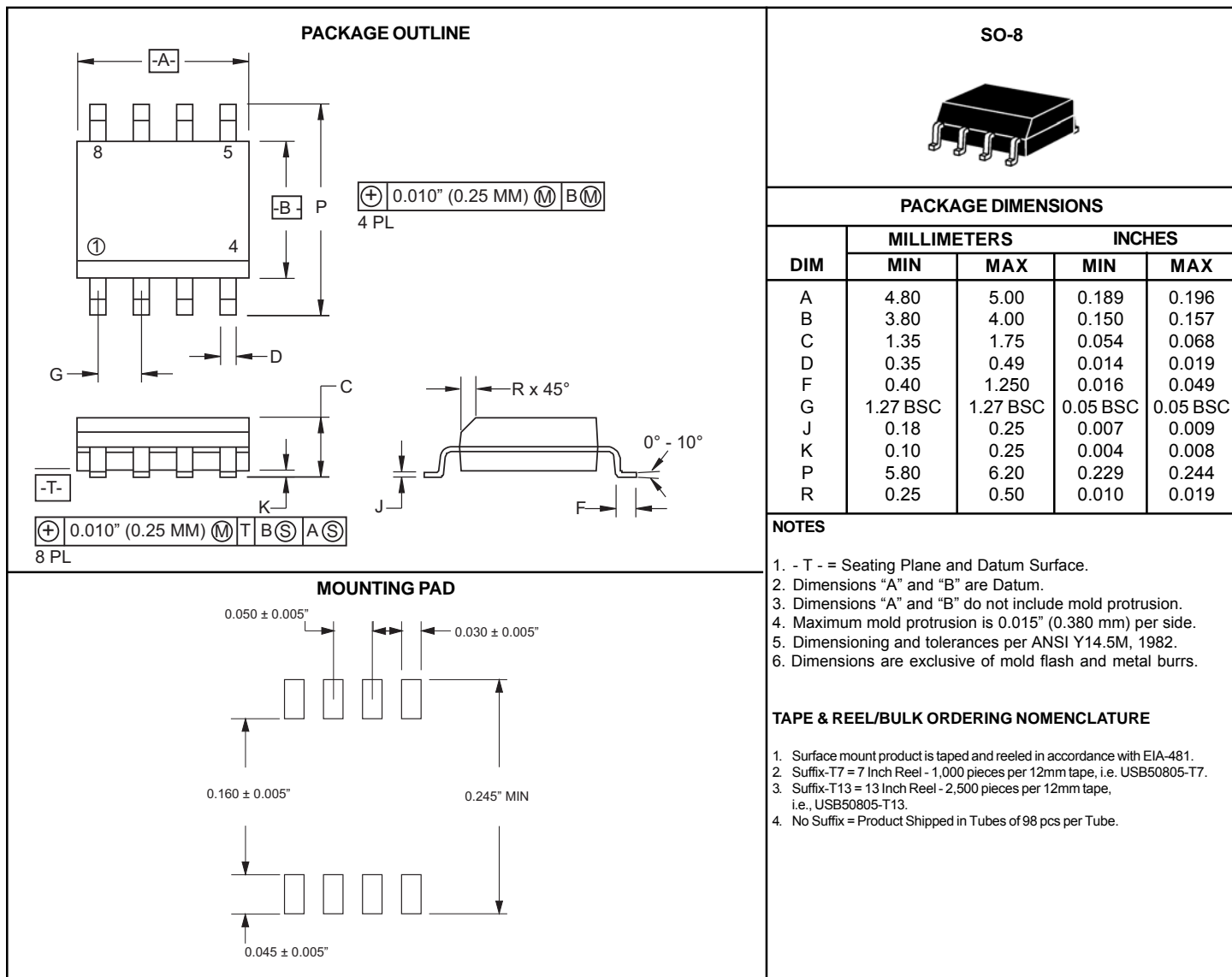


**FIGURE 3  
 POWER DERATING CURVE**



# USB50803 thru USB50824C

## SO-8 PACKAGE OUTLINE & DIMENSIONS



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