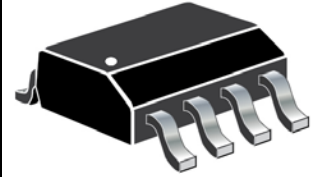




# Unidirectional Low Capacitance TVSarray

## DESCRIPTION


This USB50803 – USB50824 family of Transient Voltage Suppressor (TVS) arrays is packaged in an SO-8 configuration giving protection to 2 unidirectional data or interface lines. It is designed for use in applications where very low capacitance protection is required at the board level from voltage transients caused by electrostatic discharge (ESD) as defined in IEC 61000-4-2, electrical fast transients (EFT) per IEC 61000-4-4 and secondary effects of lightning. Using the [schematic](#) on the last page, pins 7 & 8 are tied together for the first protected positive line, and pins 1 & 2 are tied together to the ground. The same would then occur where pins 5 & 6 are tied together for a second protected positive line and pins 2 & 3 are tied together to the ground. If protecting a negative line with respect to ground, these may be switched in polarity connections where the pins are tied together in this manner for unidirectional protection. These TVS arrays have a peak power rating of 500 watts for an 8/20  $\mu$ sec pulse. This array is suitable for protection of sensitive circuitry such as TTL, CMOS DRAM's, SRAM's, HCMOS, HSIC microprocessors, Universal Serial Bus (USB) and I/O transceivers.



## SO-8 Package

Also available:

**Bidirectional version**  
(with opposite polarity in each leg)

 [USB50803C\(-A\) – USB50824C\(-A\)](#)

**Important:** For the latest information, visit our website <http://www.microsemi.com>.

## FEATURES

- Provides electrically isolated protection for up to 2 unidirectional lines.
- Surge protection per IEC 61000-4-2 and IEC 61000-4-4.
- UL 94V-0 flammability classification.
- Ultra low capacitance; 3 pF per line pair.
- Ultra low leakage current.
- RoHS compliant versions available.

## APPLICATIONS / BENEFITS

- EIA-RS485 data rates: 5 Mbs
- 10 Base T Ethernet.
- USB data rate: 900 Mbs

## MAXIMUM RATINGS

Parameters/Test Conditions	Symbol	Value	Unit
Junction and Storage Temperature	$T_J$ and $T_{STG}$	-55 to +150	$^{\circ}C$
Peak Pulse Power @ 8/20 $\mu$ s (see <a href="#">figure 1</a> )	$P_{PP}$	500	W
Impulse Repetition Rate	df	< .01	%
Capacitance (f = 1 MHz) @ 0 V	C	3	pF
Solder Temperature @ 10 s	$T_{SP}$	260	$^{\circ}C$

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Lawrence, MA 01841  
Tel: 1-800-446-1158 or  
(978) 620-2600  
Fax: (978) 689-0803

### MSC – Ireland

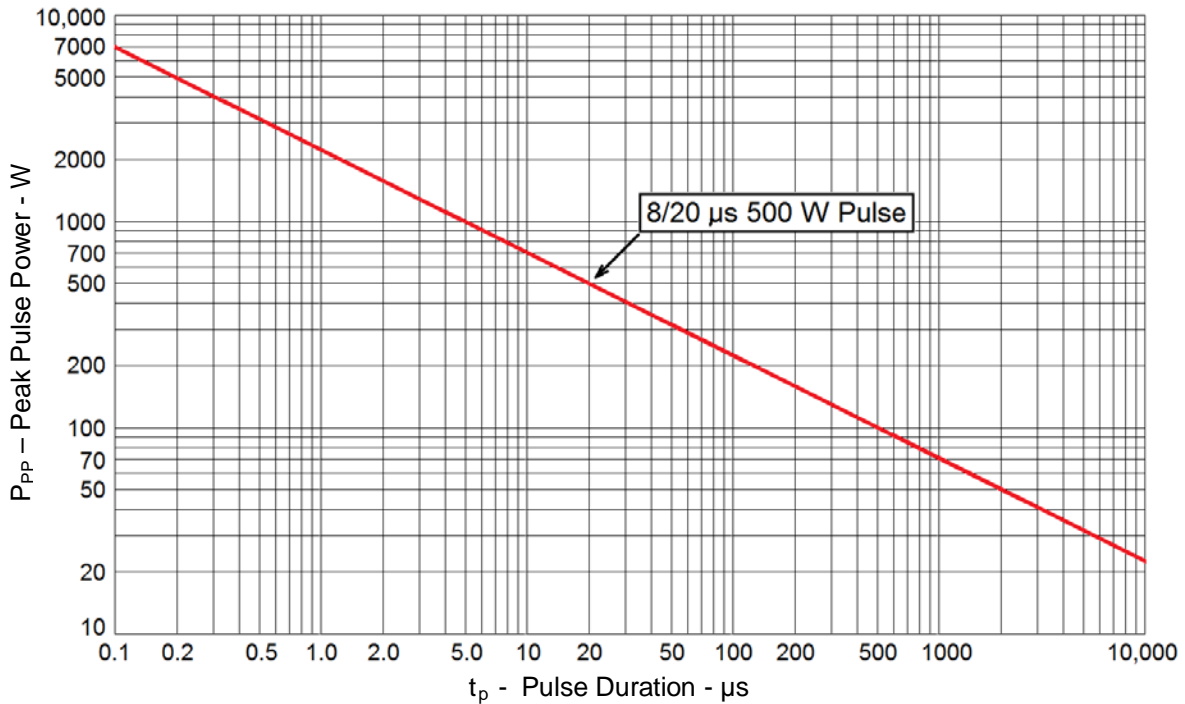
Gort Road Business Park,  
Ennis, Co. Clare, Ireland  
Tel: +353 (0) 65 6840044  
Fax: +353 (0) 65 6822298

**Website:**

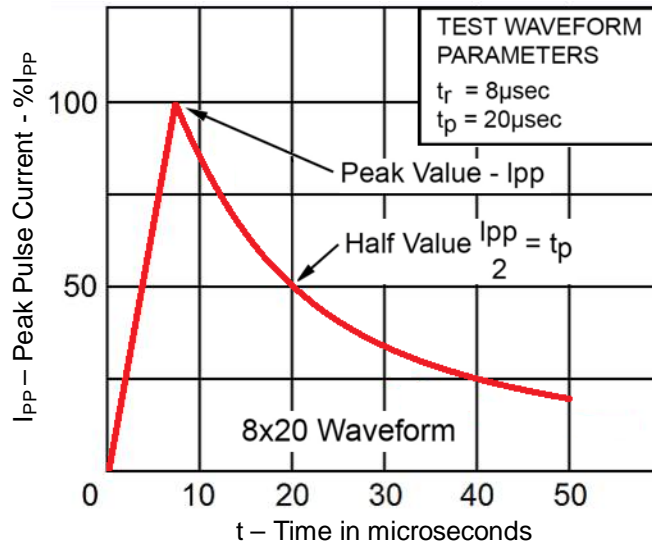
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GRAPHS

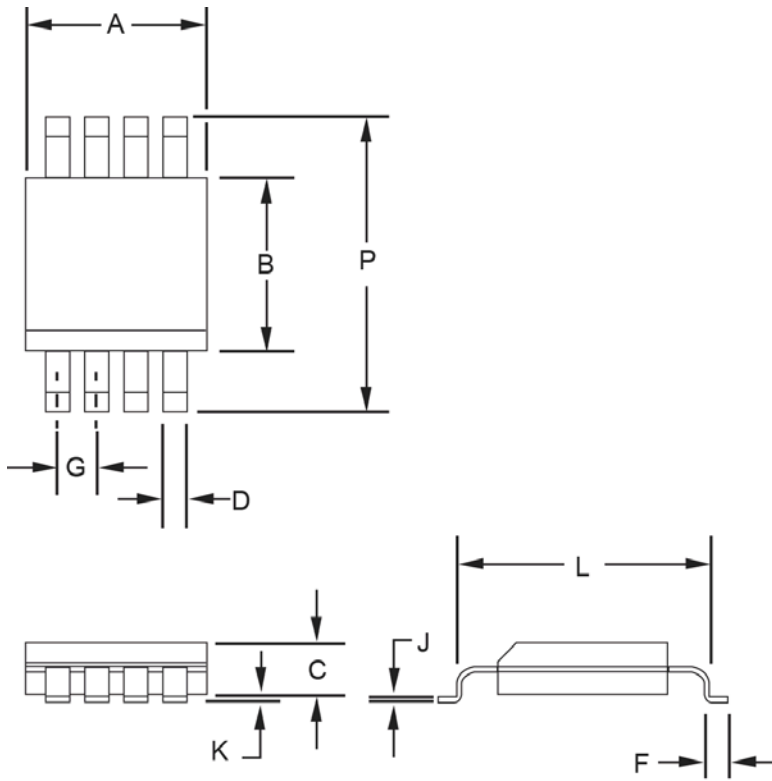


**FIGURE 1**  
Peak Pulse Power vs Pulse Time



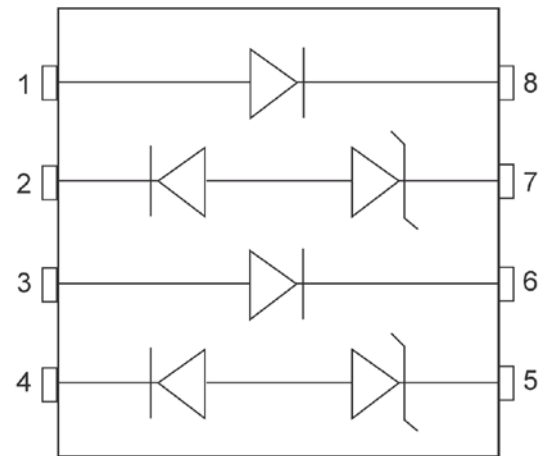
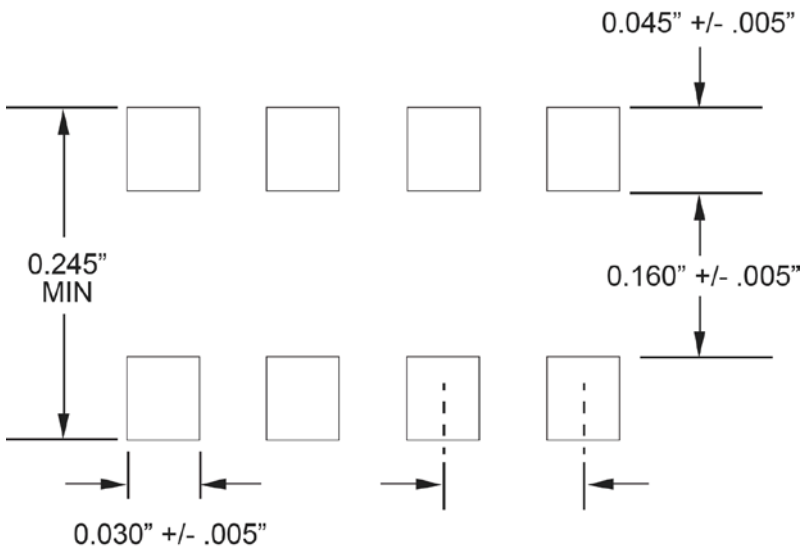
**FIGURE 2**  
Pulse Waveform

PACKAGE DIMENSIONS



Ltr	Dimensions			
	Inch		Millimeters	
	Min	Max	Min	Max
A	0.188	0.197	4.77	5.00
B	0.150	0.158	3.81	4.01
C	0.053	0.069	1.35	1.75
D	0.011	0.021	0.28	0.53
F	0.0160	0.050	0.041	1.27
G	0.050 BSC		1.27 BSC	
J	0.006	0.010	0.15	0.25
K	0.004	0.008	0.10	0.20
L	0.189	0.206	4.80	5.23
P	0.228	0.244	5.79	6.19

PAD LAYOUT / SCHEMATIC



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