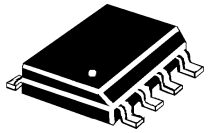
8700 E. Thomas Road
Scottsdale, AZ 85252
Tel: (480) 941-6300
Fax: (480) 947-1503

USB50803
thru
USB50824

TVSarrayÔ Series



DESCRIPTION (500 watt)

This TRANSIENT VOLTAGE SUPPRESSOR (TVS) array is packaged in an SO-8 configuration giving protection to 2 Unidirectional data or interface lines. It is designed for use in applications where protection is required at the board level from voltage transients caused by electrostatic discharge (ESD) as defined in IEC 1000-4-2, electrical fast transients (EFT) per IEC 1000-4-4 and effects of secondary lighting.

These TVS arrays have a peak power rating of 500 watts for an 8/20µsec pulse. This array is suitable for protection of sensitive circuitry consisting of TTL, CMOS DRAM's, SRAM's, HCMOS, HSIC microprocessors, **UNIVERSAL SERIAL BUS (USB)** and I/O transceivers. The USB508XX product provides board level protection from static electricity and other induced voltage surges that can damage or upset sensitive circuitry.

FEATURES

- Protects up to 2 unidirectional lines
- Surge protection Per IEC 1000-4-2, IEC 1000-4-4
- Provides electrically isolated protection
- SO-8 Packaging
- **ULTRA LOW CAPACITANCE 3 pF**
- **ULTRA LOW LEAKAGE**

MECHANICAL

- Molded SO-8 Surface Mount
- Weight: 0.066 grams (approximate)
- Marking: Logo, device number, date code
- Pin #1 defined by DOT on top of package

MAXIMUM RATINGS

- Operating Temperatures: -55^{0}C to +150^{0}C
- Storage Temperature: -55^{0}C to +150^{0}C
- Peak Pulse Power: 500 Watts (8/20 µsec, Figure 1)
- Pulse Repetition Rate: <.01%

PACKAGING

- Tape & Reel EIA Standard 481-1-A
- 13 inch reel 2,500, pieces (OPTIONAL)
- Carrier tubes 95 pcs per (STANDARD)

ELECTRICAL CHARACTERISTICS PER LINE @ 25^{0}C Unless otherwise specified

PART NUMBER	DEVICE MARKING	STAND OFF VOLTAGE V_{WM} VOLTS	BREAKDOWN VOLTAGE V_{BR} @1 mA VOLTS	CLAMPING VOLTAGE V_C @ 1 Amp (FIGURE 2) VOLTS	CLAMPING VOLTAGE V_C @ 5 Amp (FIGURE 2) VOLTS	LEAKAGE CURRENT I_D @ V_{WM} µA	CAPACITANCE (f=1 MHz) @0V C pF	TEMPERATURE COEFFICIENT OF V_{BR} á$_{VBR}$ mV/°C
		MAX	MIN	MAX	MAX	MAX	TYP	MAX
USB50803	AF	3.3	4	8	11	200	3	-5
USB50805	AG	5.0	6.0	10.8	13	20	3	1
USB50812	AH	12.0	13.3	19	26	1	3	8
USB50815	AJ	15.0	16.7	25	32	1	3	11
USB50824	AK	24.0	26.7	44	57	1	3	28

NOTE: TVS product is normally selected based on its stand off Voltage V_{WM}. Product selected voltage should be equal to or greater than the continuous peak operating voltage of the circuit to be protected.

Application: The USB508XX product is designed for transient voltage suppression protection of ESD sensitive components at the board level. It is an ideal product to be used for protection of I/O Transceivers.

WAVE FORMS

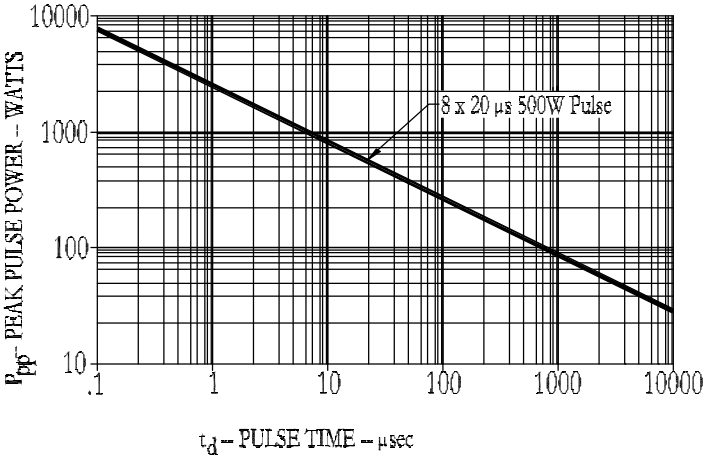


FIGURE 1
Peak Pulse Power Vs Pulse Time

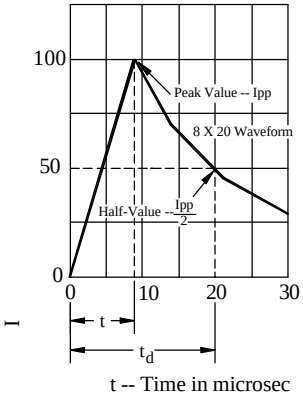
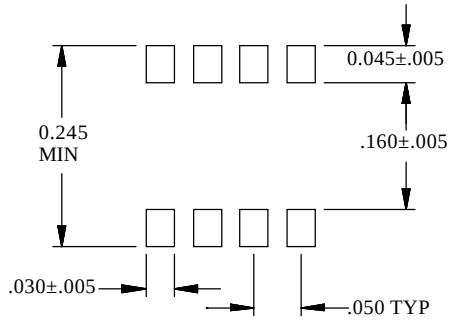
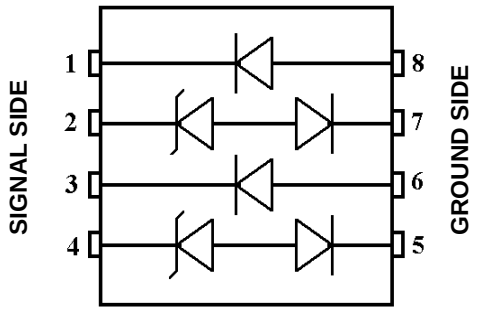


FIGURE 2
Pulse Wave Form

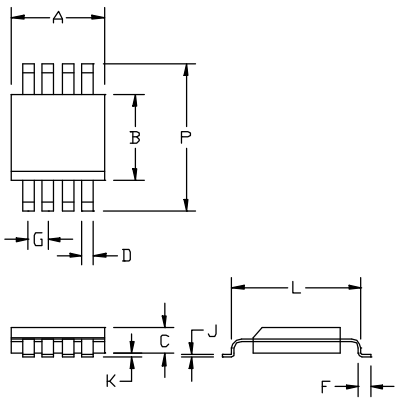
MOUNTING PAD SO-8



CIRCUIT DIAGRAM



SO-8 PACKAGE



	INCHES		MILLIMETERS	
DIM	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	0.016	0.050	0.41	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

ISO 9001 CERTIFIED