Microsemi

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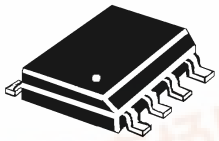
GBIT0803C
thru
GBIT0824C

TVSarray™ Series
For Gigabit Ethernet Applications



DESCRIPTION (500 watt)

This TRANSIENT VOLTAGE SUPPRESSOR (TVS) array is packaged in an SO-8 configuration giving protection to 2 Bidirectional 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, **GIGABIT (1000Mbs/sec)** transceiver chip sets. The GBIT08XXC product provides board level protection from static electricity and other induced voltage surges that can damage or upset sensitive circuitry without impeding data transmission speeds.

FEATURES

- Protects up to 2 Bidirectional lines
- Surge protection Per IEC 1000-4-2, IEC 1000-4-4
- Designed for IEEE 802.3ab Gigabit Ethernet protection
- Provides electrically isolated protection
- SO-8 Packaging
- **ULTRA LOW CAPACITANCE 5 pF per line pair**
- **ULTRA LOW LEAKAGE**

MECHANICAL

- Molded SO-8 Surface Mount
- 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)

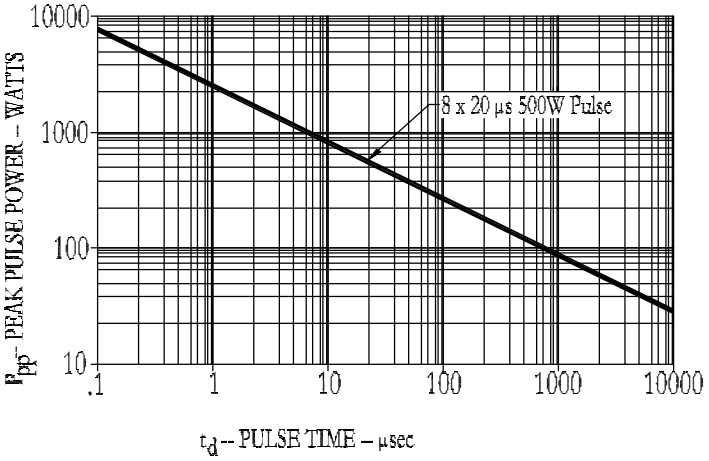
ELECTRICAL CHARACTERISTICS PER LINE @ 25^{0}C Unless otherwise specified

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
GBIT0803C	U3C	3.3	4	7	9	200	5	-5
GBIT0805C	U5C	5.0	6.0	9	11	100	5	3
GBIT0812C	U12C	12.0	13.3	19	24	1	5	10
GBIT0815C	U15C	15.0	16.7	24	30	1	5	13
GBIT0818C	U18C	18.0	20.0	32	41	1	5	22
GBIT0824C	U24C	24.0	26.7	43	55	1	5	30

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 GBIT08XXC 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



Peak Pulse Power Vs Pulse Time

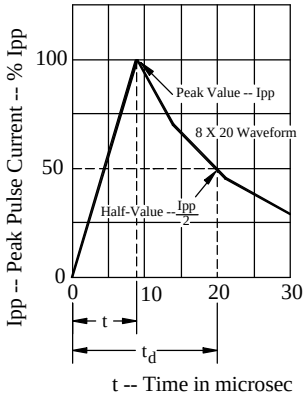
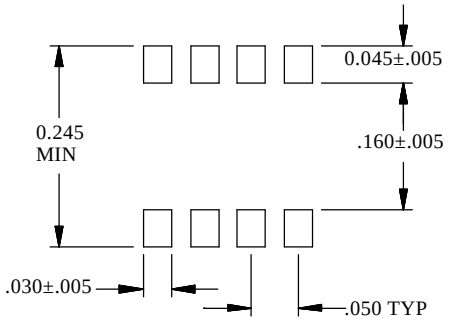


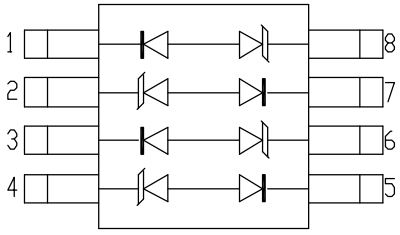
FIGURE 1

Pulse Wave Form

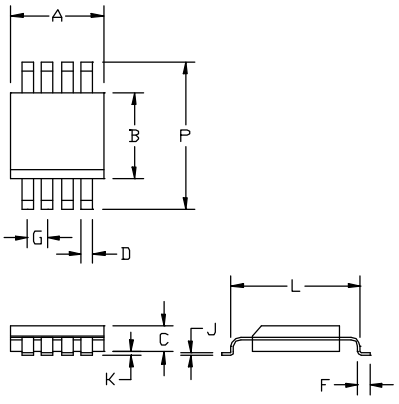
MOUNTING PAD SO-8



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