Semiconductor, Inc.

EiMD05C8 thru EiMD24C8

Compact, Bidirectional, Eight Line Monolithic TVS Diode Network

FEATURES

- Protects eight I/O lines
- Monolithic IC for higher reliability at lower cost
- Manufactured using Proprietary technology
- Transient protection for data lines to
  IEC 1000-4-2 (ESD) 15kV (air), 8kV (contact)
  IEC 1000-4-4 (EFT) 40A (tp = 5/50ns)
  IEC 1000-4-5 (Lightning) 12A (tp = 8/20µs)
- Available in SOIC-14 Package (Surface Mount)
- Operating Voltages: 5V, 12V, 15V, 24V
- Low leakage current, Low operating and clamping voltages

DESCRIPTION

The EiMDXXC8 series of monolithic transient voltage suppressors are designed for applications where voltage transients, caused by electrostatic discharge (ESD) and other induced voltage surges, can permanently damage voltage sensitive components. These monolithic TVS diodes are characterized by their high surge capability, extremely fast response time and low on-resistance.

The EiMDXXC8 is designed to provide transient suppression on multiple data lines and I/O ports. The low profile SO-14 design allows the user to protect up to eight data and I/O lines with one package. The bidirectional device and may be used on lines where the normal operating voltage is above and below ground (i.e. +12V to -12V). The EiMDXXC8 TVS diode network will meet the surge requirements of IEC 1000-4-2, Level 4, "Human Body Model" for air and contact discharge.

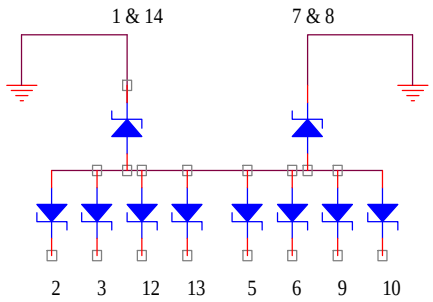
APPLICATIONS

- RS-232 & RS-422 Data Lines
- Microprocessor Based Equipment
- LAN/WAN Equipment
- Set-Top Box
- Notebooks, Desktops, & Servers
- Portable Instrumentation
- Peripherals

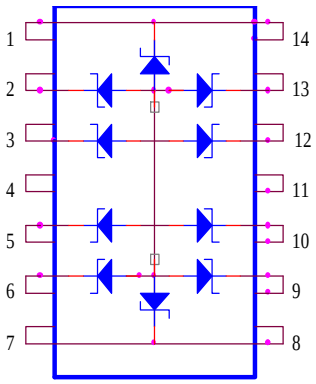
MECHANICAL CHARACTERISTICS

- Available in 14 lead SOIC
- Solder temperature : 265°C for 10 seconds

Schematic:



PinConfiguration:



Part Numbers May Be Marked With "IMP" or "Ei."

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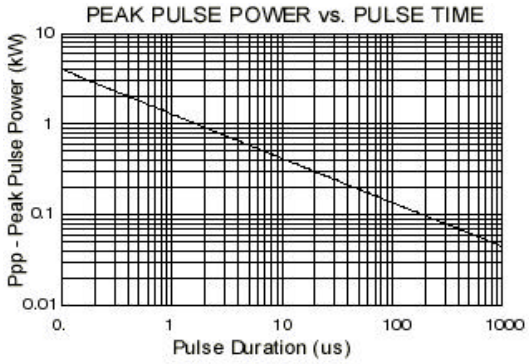
MAXIMUM RATINGS

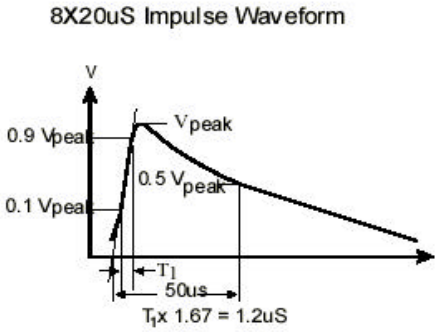
RATING	SYMBOL	VALUE	UNIT
Peak Pulse Power (tp = 8 x 20 µs)	Ppk	300	Watts
Operating Temperature	Tj	-55 to +150	°C
Storage Temperature	Tstg	-55 to +150	°C

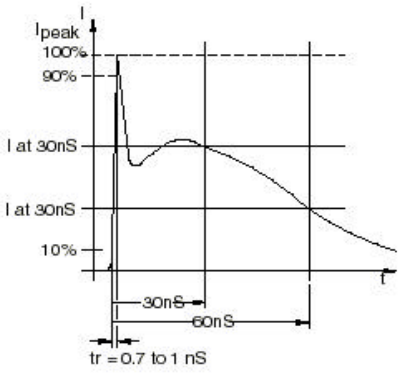
ELECTRICAL CHARACTERISTICS @ 25°C

Part Number	Reverse Stand-off Voltage	Min Vbr @ 1mA	Max Clamping Voltage @Ipp=1A	Peak Pulse Current @tp = 8/20µS	Leakage Current @ V_{RWM}	Max. Cap. @0V, 1Mhz I/O to Gnd
	V_{RWM}	BV(min)	Vc	Vc	I_R	Cj
	Volts	Volts	Volts	Volts	µA	pf
EiMD05C8	5	6	9.8	17	20	350
EiMD12C8	12	13.3	16	12	1	120
EiMD15C8	15	16.7	24	10	1	75
EiMD24C8	24	26.7	43	5	1	50

Note : Clamping voltage values are based upon an industry standard 8 x 20µs peak pulse current (Ipp) waveform.







Level	First Peak Current (A)	Peak Current at 30ns (A)	Peak Current at 60ns (A)	Test Voltage (Contact Discharge) (kV)	Test Voltage (Air Discharge) (kV)
1	7.5	4	8	2	2
2	15	8	4	4	4
3	22.5	12	6	6	8
4	30	16	8	8	15

IEC 1000-4-2 ESD WAVEFORM & DISCHARGE PARAMETERS

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Preliminary

Web Page: http://www.epicsemi.com