



Semiconductor, Inc.

Ei8LC05 thru Ei8LC15

Low Capacitance, Bidirectional, Monolithic TVS Diode Network

FEATURES

- 500 watts Peak Pulse Power ($t_p = 8 \times 20 \mu s$)
- ESD and Transient protection for data, signal and V_{cc} bus to IEC 1000-4-2 (formerly IEC 801-2)
- Protects up to 4 bi-directional lines
- Standoff voltages from 5 to 15 V
- Low capacitance for high speed interfaces
- Low clamping voltage
- ESD protection $>8kV$

DESCRIPTION

The Ei8LC 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 TVS diodes are characterized by their high surge capability, extremely fast response time and low on-resistance.

The Ei8LC series consists of bi-directional diode arrays with low input capacitances and is specifically designed to protect multiple or single data lines with each channel being electrically

independent for multiple I/O port protection.

These monolithic diode array networks can be used to protect combinations of 8 unidirectional or bi-directional lines. They provide ESD and surge protection for sensitive power and I/O ports. The 8LC series TVS diode array will meet the surge and ESD per IEC 1000-4-2.

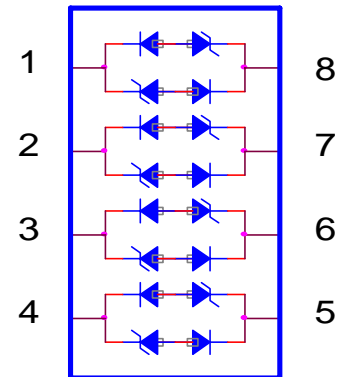
Applications

- ESD & surge protection for power lines & I/O ports
- TTL and MOS Bus Lines
- RS-232, Rs-422 and RS-485 data lines
- High speed logic
- High speed data & video transmission

MECHANICAL CHARACTERISTICS

- Available in 8 lead SOIC and PDIP
- Solder temperature : $265^{\circ}C$ for 10 seconds

Schematic



MAXIMUM RATINGS

RATING	SYMBOL	VALUE	UNIT
Peak Pulse Power ($t_p = 8 \times 20 \mu s$)	Ppk	300	Watts
Operating Temperature	Tj	-55 to +150	$^{\circ}C$
Storage Temperature	Tstg	-55 to +150	$^{\circ}C$

ELECTRICAL CHARACTERISTICS @ $25^{\circ}C$

	Reverse Stand-off Voltage	Min Vbr @ 1mA	Max Clamping Voltage @ $I_{pp}=1A$	Max Clamping Voltage @ $I_{pp} = 10A$	Leakage Current @ V_{RWM}	Max. Cap. @ 0V, 1Mhz
	V_{RWM}	BV(min)	V_c	V_c	I_R	C_j
	Volts	Volts	Volts	Volts	μA	pf
Ei8LC05CX	5	6	9.8	12.5	400	15
Ei8LC08CX	8	8.5	13.4	16.6	10	15
Ei8LC12CX	12	13.3	19.0	23.5	2	15
Ei8LC15CX	15	16.7	25.5	29.5	2	15

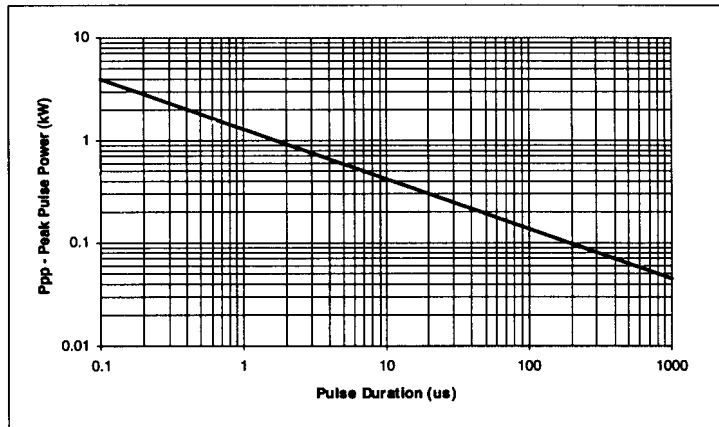
Note : Clamping voltage values are based upon an industry standard $8 \times 20\mu s$ peak pulse current (I_{pp}) waveform.

X= S for SOIC package, X= P for P-Dip Package

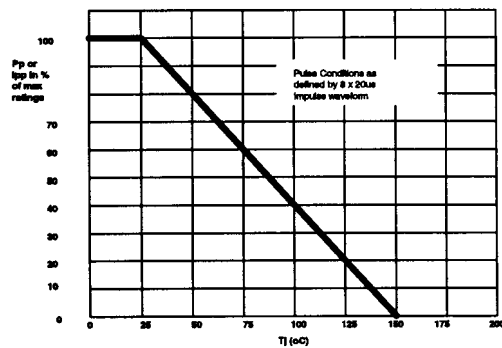
Ei8LC05 thru Ei8LC15

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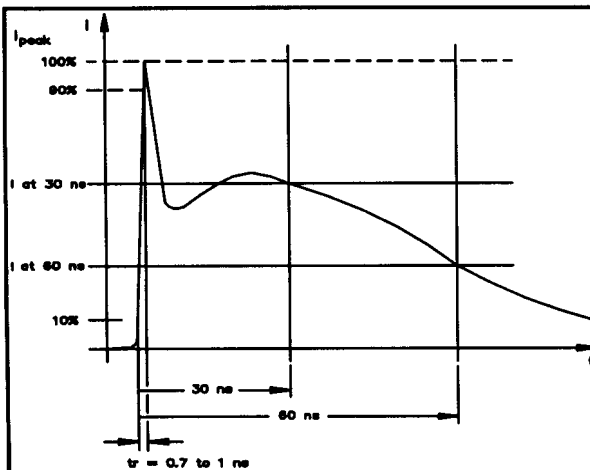
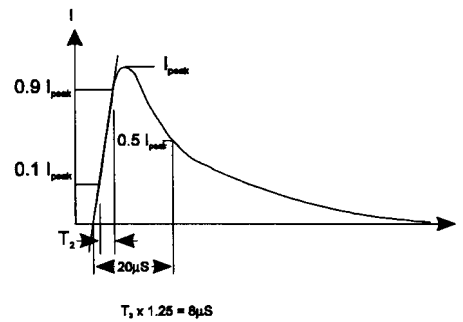
PEAK PULSE POWER vs. PULSE TIME



PULSE DERATING CURVE



8x20μs IMPULSE WAVEFORM



LEVEL	First Peak Current of Discharge (±10%) (A)	Peak Current (±30%) at 30ns (A)	Peak Current (±30%) at 60ns (A)	Test Voltage Contact Discharge (kV)	Test Voltage Air Discharge (kV)
1	7.5	4	2	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