Absolute Maximum Rating

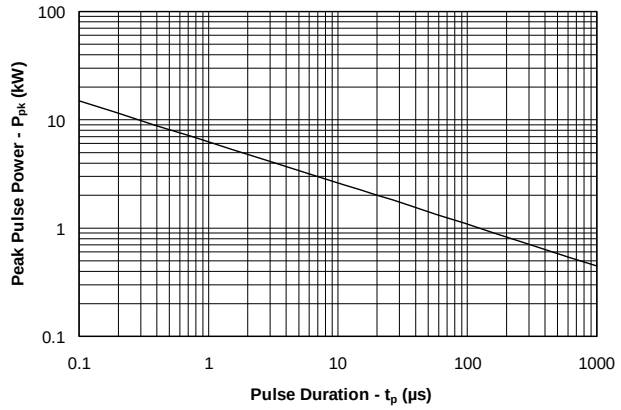
Rating	Symbol	Value	Units
Peak Pulse Power (t_p = 8/20µs)	P_{pk}	2000	Watts
Peak Pulse Current (t_p = 8/20µs)	I_{PP}	100	A
Lead Soldering Temperature	T_L	260 (10 sec.)	°C
Operating Temperature	T_J	-55 to +125	°C
Storage Temperature	T_{STG}	-55 to +150	°C

Electrical Characteristics

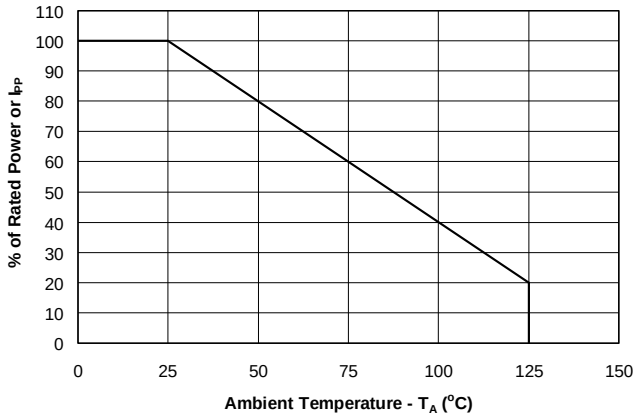
LC05-6						
Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	V_{RWM}				6	V
Reverse Breakdown Voltage	V_{BR}	I_t = 1mA	6.8			V
Reverse Leakage Current	I_R	V_{RWM} = 6V, T=25°C V_{RWM} = 3V, T=25°C			15 2	µA µA
Clamping Voltage	V_C	I_{PP} = 10A, t_p = 10/1000µs			12.5	V
Clamping Voltage	V_C	I_{PP} = 50A, t_p = 8/20µs			15	V
Clamping Voltage	V_C	I_{PP} = 100A, t_p = 8/20µs			20	V
Junction Capacitance	C_j	Each Line V_R = 0V, f = 1MHz			15	pF

Typical Characteristics

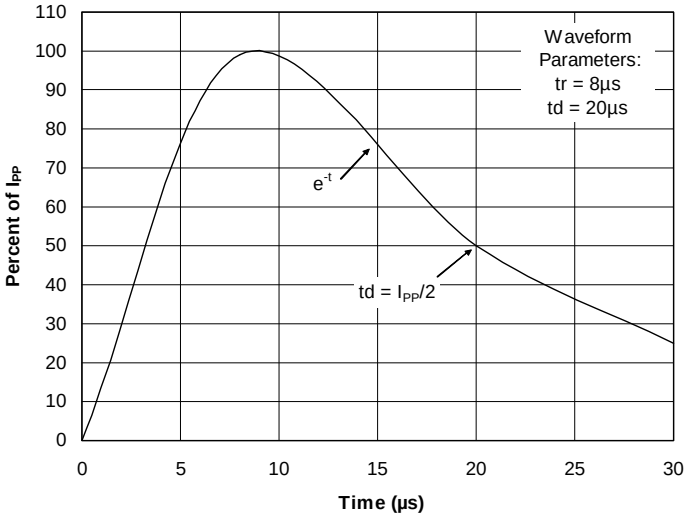
Non-Repetitive Peak Pulse Power vs. Pulse Time



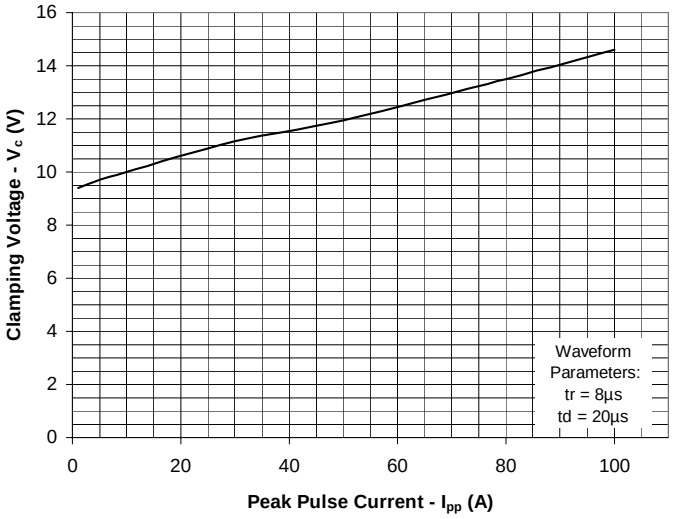
Power Derating Curve



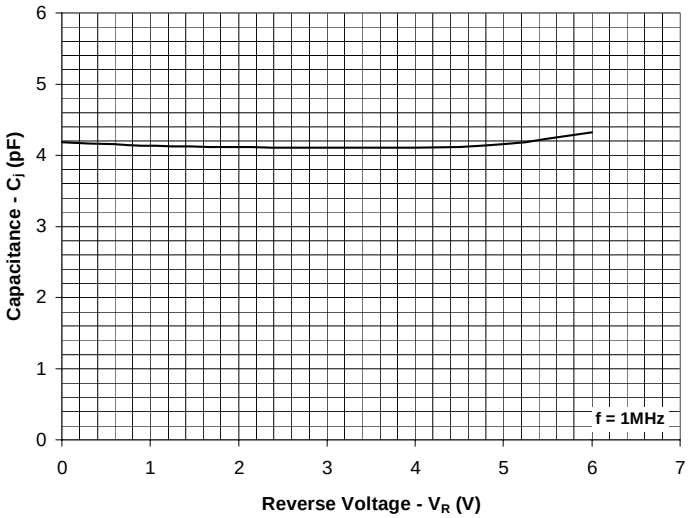
Pulse Waveform



Clamping Voltage vs. Peak Pulse Current



Capacitance vs. Reverse Voltage

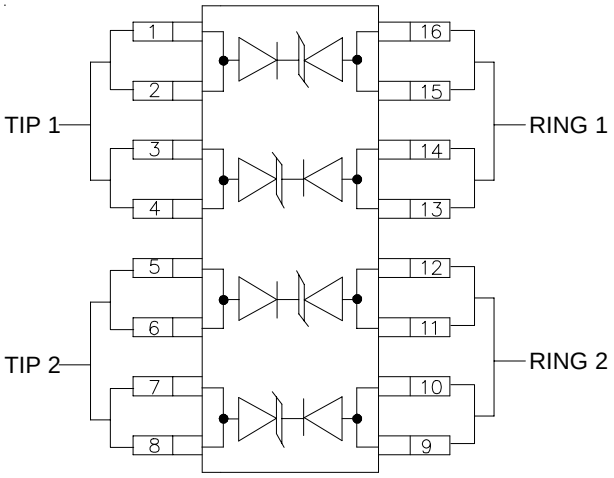


Applications Information

Device Connection Options for Protection of Two High-Speed Line Pairs

The LC05-6 is designed to protect four high-speed data lines (two differential pairs) from transient over-voltages which result from lightning and ESD. Protection of two line pairs is achieved by connecting the device as follows: Pins 1-4 are connected to line 1 of the first pair (i.e. Tip 1) and pins 13-16 are connected to line 2 of the first pair (i.e. Ring 1). Pins 5-8 are connected to line 1 of the second pair (i.e. Tip 2) and pins 9-12 are connected to line 2 of the second pair (i.e. Ring 2). All pins should be connected for best results. Minimize parasitic inductance in the protection circuit path by keeping the trace length between the protected line and the LC05-6 as short as possible.

Figure 1 - Connection for Differential (Line-to-Line) Protection of two Tip/Ring Line Pairs



T1/E1 Linecard Protection

A typical T1/E1 linecard protection circuit is shown in Figure 2. The LC05-6 is connected between Tip & Ring on the transmit and receive line pairs. It provides protection to metallic (line-to-line) lightning and ESD surges. It is designed to meet the intra-building requirements of Bellcore GR-1089. This design takes advantage of the isolation of the transformer to suppress common mode surges. To complete the protection circuit, the SRDA05-4 (or SRDA3.3-4 for 3.3V supplies) is employed as the IC side protection element. This device helps prevent the transceiver from latching up by providing fine clamping of transients that are coupled through the transformer.

Typical Applications

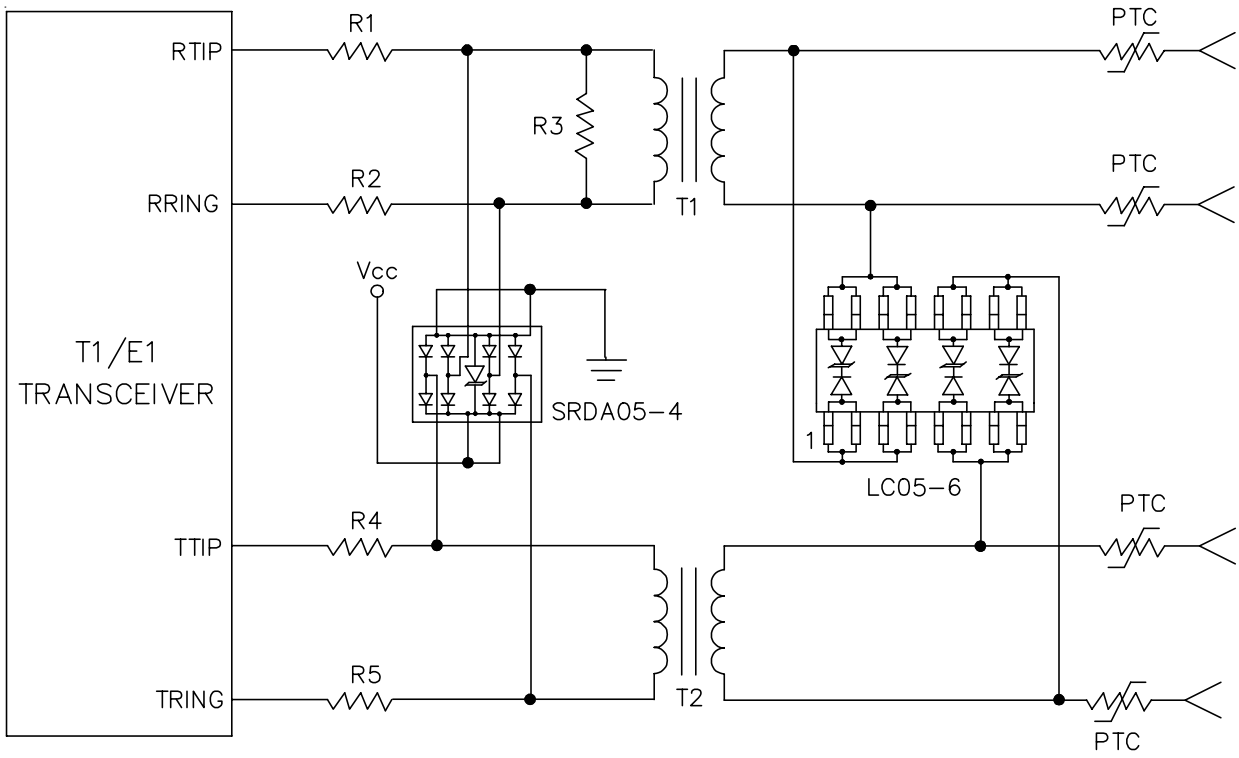
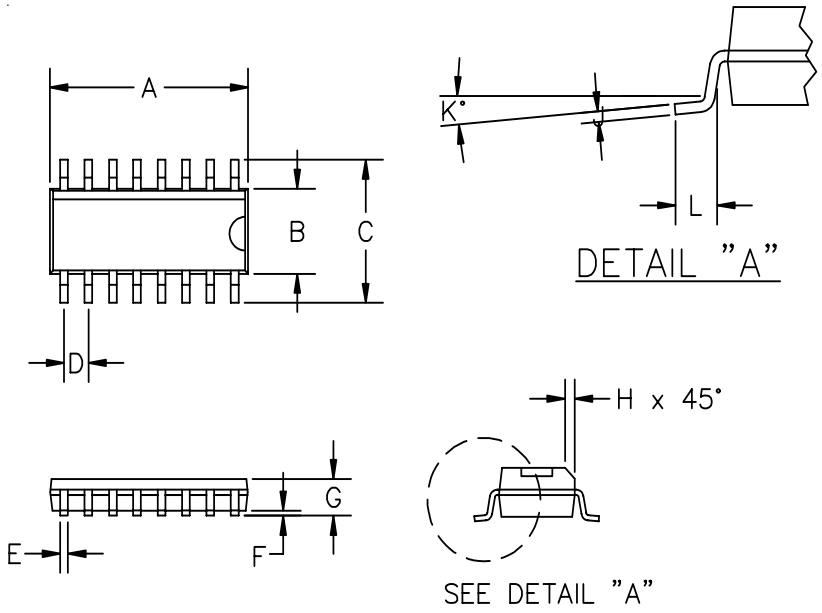


Figure 2 - T1/E1 Line Card Protection

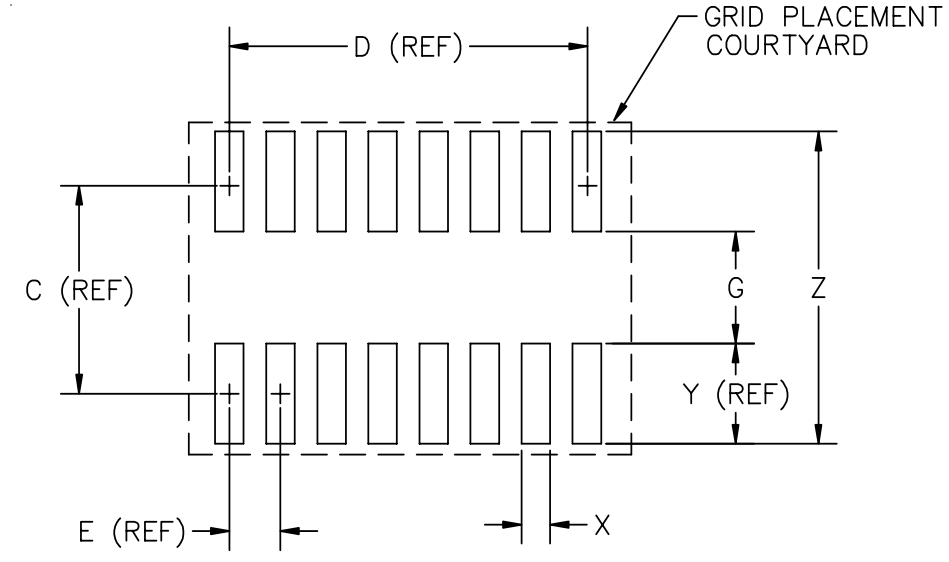
Outline Drawing - SO-16



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.386	.393	9.80	10.0	[2]
B	.150	.158	3.80	4.00	[2]
C	.228	.244	5.80	6.20	–
D	.050	BSC	1.27	BSC	–
E	.013	.020	0.33	0.51	–
F	.004	.010	.10	.25	–
G	.053	.069	1.35	1.75	–
H	.010	.020	.25	.50	–
J	.007	.010	.19	.25	–
K	0°	8°	0°	8°	–
L	.016	.050	.40	1.27	–

[2] DIMENSIONS A AND B DO NOT INCLUDE MOLD PROTUSIONS

Land Pattern - SO-16



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
C	–	.197	–	5.00	–
D	–	.35	–	8.89	–
E	–	.05	–	1.27	–
G	.102	.110	2.60	2.80	–
X	.02	.03	.60	.80	–
Y	–	.095	–	2.40	–
Z	.28	.29	7.20	7.40	–

[1] GRID PLACEMENT COURTYARD IS 22 X 16 ELEMENTS (11mm X 8mm) IN ACCORDANCE WITH THE INTERNATIONAL GRID DETAILED IN IEC PUBLICATION 97.

Ordering Information

Part Number	Working Voltage	Qty per Reel	Reel Size
LC05-6.TB	6V	500	7 Inch
LC05-6.TE	6V	2500	13 Inch

Note:
(1) No suffix indicates tube pack.

Contact Information

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