

Features

- Low capacitance for high speed interfaces
- Ultra low leakage: nA level
- Low operating voltage: 3.3V
- Ultra low clamping voltage
- Protects two lines in common and differential mode
- JEDEC SO-8 package
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
Air discharge: $\pm 30\text{kV}$
Contact discharge: $\pm 30\text{kV}$
 - IEC61000-4-5 (Lightning) 55A (8/20 μs)
- RoHS Compliant

Mechanical Characteristics

- Package: SO-8
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound.
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below

RoHS



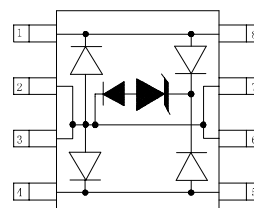
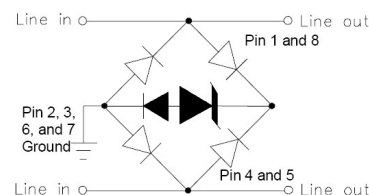
Applications

- T1/E1 Line Cards
- T3/E3 and DS3 Interfaces
- STS-1 Interfaces
- 10/100/1000 BaseT Ethernet
- Set Top Box
- ISDN Interfaces
- Low Voltage Interfaces

Ordering Information

| Part Number | Qty per Reel | Reel Size |
|--------------|--------------|-----------|
| TPLC03-3.3LC | 2500 | 13Inch |

Dimensions and Pin Configuration



Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|---|------------------|-------------|------------------|
| Peak Pulse Power(8/20 μs) | Ppk | 1500 | W |
| Peak Pulse Current(8/20 μs) | I _{PP} | 55 | A |
| ESD per IEC 61000-4-2 (Air) | V _{ESD} | ± 30 | kV |
| ESD per IEC 61000-4-2 (Contact) | | ± 30 | |
| Operating Temperature Range | T _J | -40 to +125 | $^\circ\text{C}$ |
| Storage Temperature Range | T _{stg} | -55 to +150 | $^\circ\text{C}$ |

Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Min | Typ | Max | Unit | Test Condition |
|-------------------------|------------------|-----|-----|-----|---------------|---|
| Reverse Working Voltage | V _{RWM} | | | 3.3 | V | |
| Punch-Through Voltage | V _{PT} | 3.5 | | | V | I _T = 2 μA |
| Snap-Back Voltage | V _{SB} | 2.8 | | | V | I _T = 50mA |
| Reverse Leakage Current | I _R | | | 0.5 | μA | V _{RWM} = 3.3V |
| Clamping Voltage | V _C | | | 7 | V | I _{PP} = 1A (8 x 20 μs pulse), any I/O pin to ground |
| Clamping Voltage | V _C | | | 22 | V | I _{PP} = 50A (8 x 20 μs pulse), between I/O pins |
| Clamping Voltage | V _C | | | 25 | V | I _{PP} = 55A (8 x 20 μs pulse), any I/O pin to ground |
| Junction Capacitance | C _J | | 3 | 5 | pF | V _R = 0V, f = 1MHz, between I/O pins and ground |
| Junction Capacitance | C _J | | 1.5 | 2.5 | pF | V _R = 0V, f = 1MHz, between I/O pins |

Note 1: I/O pins are Pin 1, 4, 5 and 8

PROTECTION PRODUCTS
 Typical characteristics

Fig1. 8/20 μ s Pulse Waveform

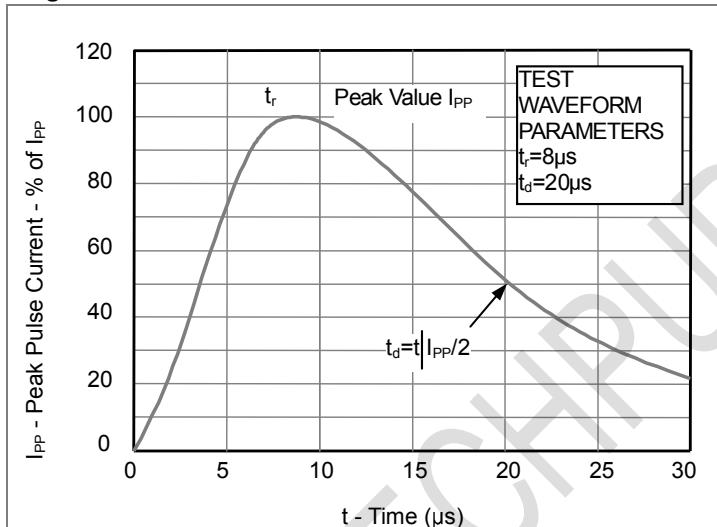


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

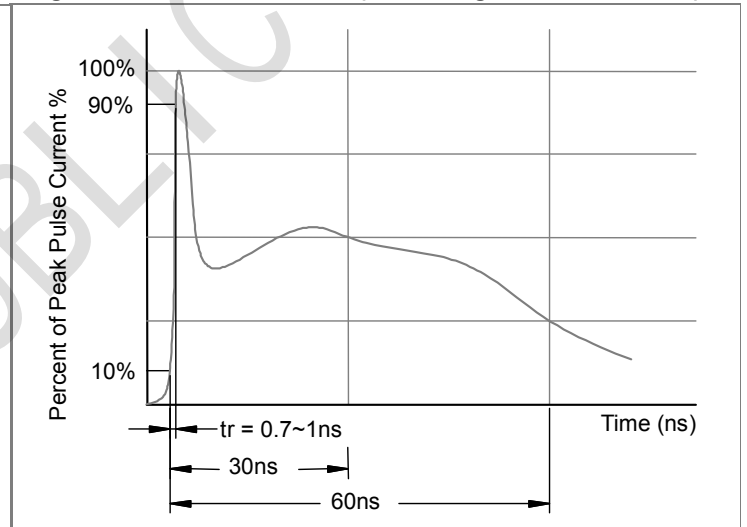
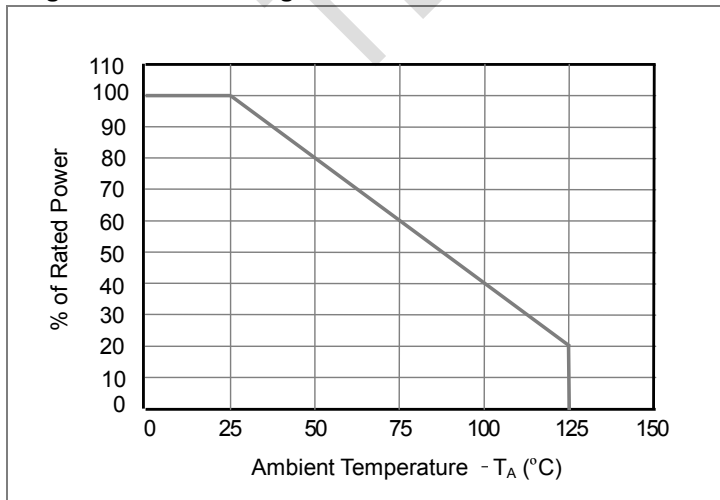
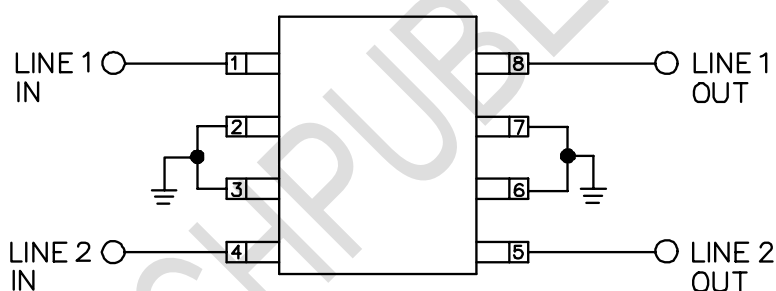


Fig3. Power Derating Curve

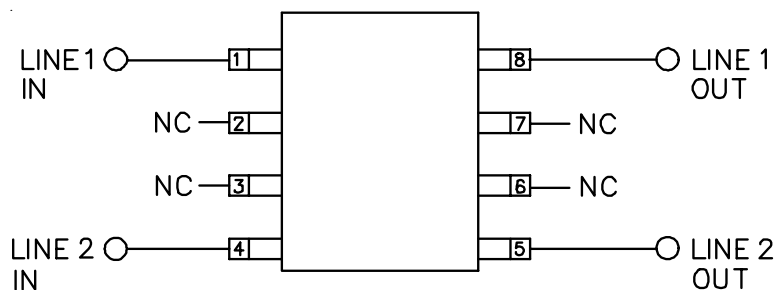


Typical Application

The TPLC03-3.3LC is designed to protect two high speed data lines (one differential pair) from transient over - voltages which result from lightning and ESD. The device can be configured to protect in differential (Line to Line) and common (Line to Ground) mode. Data line inputs/outputs are connected at pins 1 to 8, and 4 to 5 as shown below. Pins 2, 3, 6, 7 are connected to ground. These pins should be connected directly to a ground plane on the board for the best results, the path length is kept as short as possible to minimize parasitic inductance. In applications where high common voltages are present, differential protection is achieved by leaving pins 2, 3, 6, and 7 not connected.

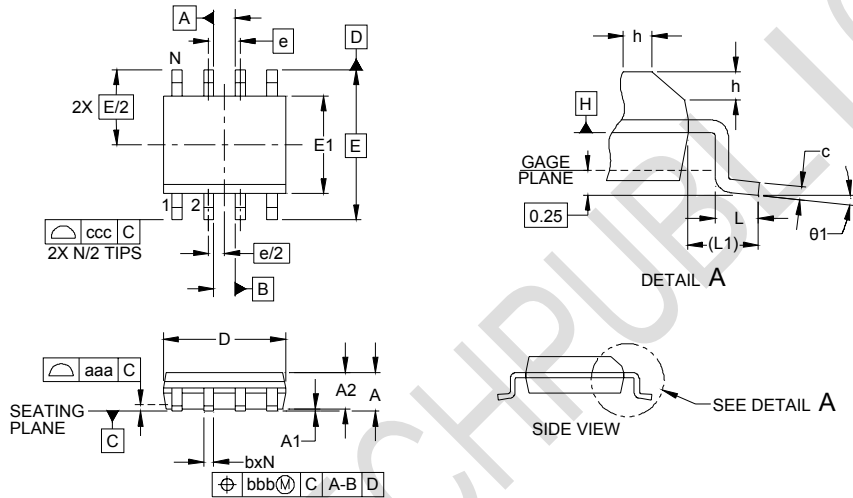


Connection for differential (Line to Line) and common mode protection (Line to Ground)



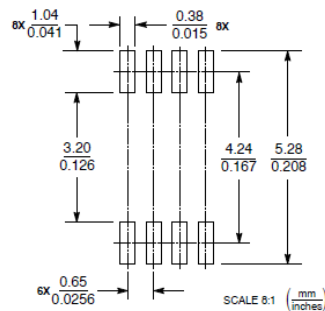
Connection for differential protection (Line to Line)

Outline Drawing - SOP-8(SO-8)



| DIM | INCHES | | | MILLIMETERS | | |
|-----|----------|------|------|-------------|------|------|
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | .053 | - | .069 | 1.35 | - | 1.75 |
| A1 | .004 | - | .010 | 0.10 | - | 0.25 |
| A2 | .049 | - | .065 | 1.25 | - | 1.65 |
| b | .012 | - | .020 | 0.31 | - | 0.51 |
| c | .007 | - | .010 | 0.17 | - | 0.25 |
| D | .189 | .193 | .197 | 4.80 | 4.90 | 5.00 |
| E1 | .150 | .154 | .157 | 3.80 | 3.90 | 4.00 |
| E | .236 BSC | | | 6.00 BSC | | |
| e | .050 BSC | | | 1.27 BSC | | |
| h | .010 | - | .020 | 0.25 | - | 0.50 |
| L | .016 | .028 | .041 | 0.40 | 0.72 | 1.04 |
| L1 | (.041) | | | (1.04) | | |
| N | 8 | | | 8 | | |
| θ1 | 0° | - | 8° | 0° | - | 8° |
| aaa | .004 | | | 0.10 | | |
| bbb | .010 | | | 0.25 | | |
| ccc | .008 | | | 0.20 | | |

Land Pattern - SOP-8



单击下面可查看定价，库存，交付和生命周期等信息

[>>TECH PUBLIC\(台舟\)](#)