

Dual Line CAN Bus Protector

DESCRIPTION

The SLESD2105L has been designed to protect the CAN transceiver in high-speed and fault tolerant networks from ESD and other harmful transient voltage events. This device provides bidirectional protection for each data line with a single compact SOT-23 package, giving the system designer a low cost option for improving system reliability and meeting stringent EMI requirements.

APPLICATIONS

- ✧ Industrial Control Networks
 - Smart Distribution Systems
- ✧ Automotive Networks
 - Low and High-Speed CAN
 - Fault Tolerant CAN

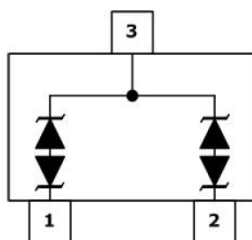
FEATURES

- ✧ IEC61000-4-2 (ESD) $\pm 15\text{kV}$ (air), $\pm 8\text{kV}$ (contact)
- ✧ IEC61000-4-4 (EFT) 40A (5/50ns)
- ✧ IEC61000-4-5 (Lighting) 8.0A (8/20 μs)
- ✧ 350 Watts Peak Pulse Power per (tp=8/20 μs)
- ✧ Working voltages : 24V
- ✧ Low clamping voltage
- ✧ Low leakage current

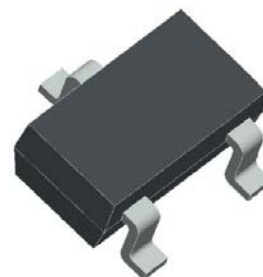
MACHANICAL DATA

- ✧ SOT-23 package
- ✧ Flammability Rating: UL 94V-0
- ✧ Packaging: Tape and Reel
- ✧ High temperature soldering guaranteed: 260°C/10s
- ✧ Reel size: 7 inch
- ✧ Quantity per reel: 3,000pcs

PIN CONFIGURATION



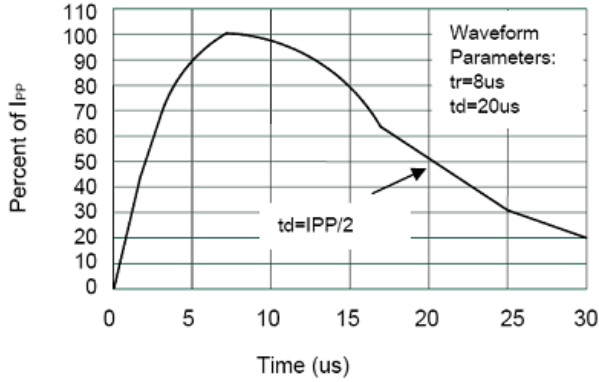
PACKAGE OUTLINE



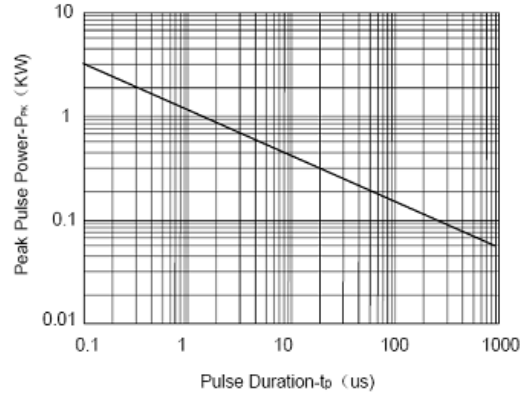
| ABSOLUTE MAXIMUM RATING | | | |
|-------------------------|---------------------------------|---------------|--------------|
| Symbol | Parameter | Value | Units |
| V_{ESD} | ESD per IEC 61000-4-2 (Air) | ± 30 | kV |
| | ESD per IEC 61000-4-2 (Contact) | ± 30 | |
| P_{PP} | Peak Pulse Power (8/20 μ s) | 350 | W |
| T_{OPT} | Operating Temperature | -55/+150 | $^{\circ}$ C |
| T_{STG} | Storage Temperature | -55/+150 | $^{\circ}$ C |
| T_L | Lead Soldering Temperature | 260 (10 sec.) | $^{\circ}$ C |

| ELECTRICAL CHARACTERISTICS ($T_{amb}=25^{\circ}$ C) | | | | | | |
|--|---------------------------|---|------|-----|-----|-------|
| Symbol | Parameter | Test Condition | Min | Typ | Max | Units |
| V_{RWM} | Reverse Working Voltage | Pin 1,2 to Pin3 | | | 24 | V |
| V_{BR} | Reverse Breakdown Voltage | $I_T = 1mA$ Pin 1,2 to Pin3 | 26.2 | | 32 | V |
| I_R | Reverse Leakage Current | $V_{RWM} = 24V$ Pin 1,2 to Pin3 | | 15 | 100 | nA |
| V_{C1} | Clamping Voltage 1 | $I_{PP} = 1A, t_p = 8/20\mu s$ Pin 1,2 to Pin3 | | | 36 | V |
| V_{C2} | Clamping Voltage 2 | $I_{PP} = 5A, t_p = 8/20\mu s$ Pin 1,2 to Pin3 | | | 46 | V |
| C_J | Junction Capacitance | $V_R = 0V, f = 1MHz$ Pin 1,2 to Pin3 | | 25 | 30 | pF |

ELECTRICAL CHARACTERISTICS CURVE

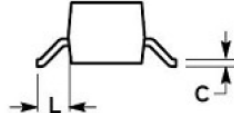
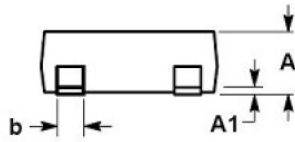
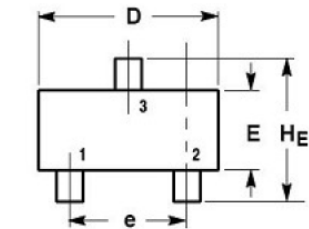


Pulse Waveform



Non-Repetitive Peak Pulse Power vs. Pulse Time

SOT-23 PACKAGE OUTLINE DIMENSIONS



| DIM | MILLIMETERS | | | INCHES | | |
|-----|-------------|------|------|--------|-------|-------|
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 0.89 | 1.00 | 1.11 | 0.035 | 0.040 | 0.044 |
| A1 | 0.01 | 0.06 | 0.10 | 0.001 | 0.002 | 0.004 |
| b | 0.37 | 0.44 | 0.50 | 0.015 | 0.018 | 0.020 |
| c | 0.09 | 0.13 | 0.18 | 0.003 | 0.005 | 0.007 |
| D | 2.80 | 2.90 | 3.04 | 0.110 | 0.114 | 0.120 |
| E | 1.20 | 1.30 | 1.40 | 0.047 | 0.051 | 0.055 |
| e | 1.78 | 1.90 | 2.04 | 0.070 | 0.075 | 0.081 |
| L | 0.35 | 0.54 | 0.69 | 0.014 | 0.021 | 0.029 |
| HE | 2.10 | 2.40 | 2.64 | 0.083 | 0.094 | 0.104 |