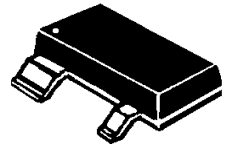


DESCRIPTION

This TRANSIENT VOLTAGE SUPPRESSOR (TVS) is packaged in an SOT-143 configuration with very low capacitance giving protection for two high speed data lines connected to terminals 2 and 3. This protection is from electrostatic discharge (ESD) and other induced voltage surges such as electrical fast transient/burst (EFT) that can damage or upset sensitive circuitry as defined in IEC 61000-4-2 and IEC 61000-4-4. With its four steering diodes and one TVS, any positive voltage on the data lines exceeding one diode voltage drop above the positive voltage supply line (V_{cc}) connected to terminal 4 will be diverted away from the protected line to the supply line. If this also exceeds the TVS voltage, the surge is directed to ground (Gnd) at terminal 1. Negative voltages greater than one voltage drop are diverted to ground. This SRLC05 can also serve as a bi-directional, low capacitance TVS when simply using terminals 2 and 3. In a similar configuration, the terminal 1 can optionally be tied to ground.

IMPORTANT: For the most current data, consult MICROSEMI's website: <http://www.microsemi.com>

TVS array™ SERIES

APPLICATIONS

- EIA-RS485 data rates: 5 Mbs
- 10 Base T Ethernet
- USB data rate: 900 Mbs
- Video line protection
- Wan/Lan
- ISDN S/T

FEATURES

- Protects 2 high-speed data lines
- Surge protection per IEC 61000-4-2, IEC 61000-4-4
- Optionally provides bi-directional protection
- **ULTRA LOW CAPACITANCE 6 pF**
- UL94V-0 Flammability Classification

MAXIMUM RATINGS

- Operating Temperature: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- Peak Pulse Power: 200 watts (8/20 μ s, Figure 1)
- Pulse Repetition Rate: < .01%

MECHANICAL

- Molded SOT-143 Surface Mount
- Weight: 0.035 grams (approximate)
- Body marked with device marking code
- Pin #1 defined by dot on top of package

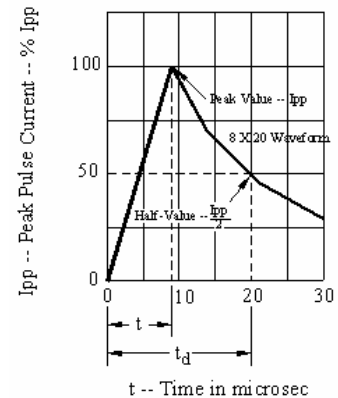
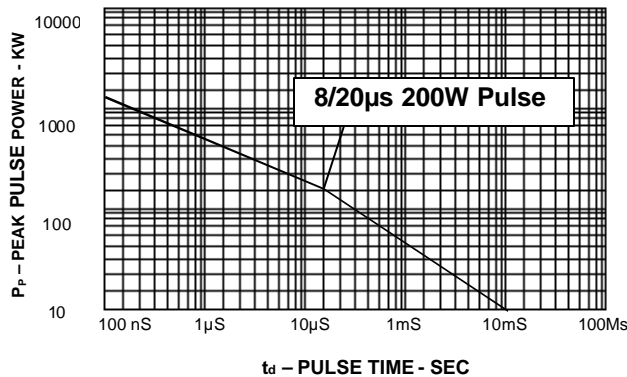
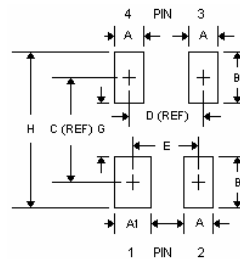
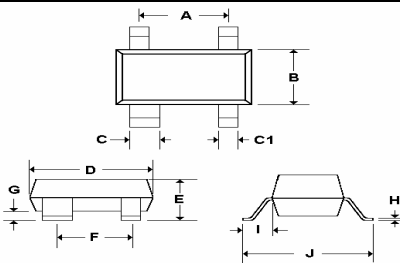
ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless otherwise specified

PART NUMBER	DEVICE MARKING	BREAKDOWN VOLTAGE V_{BR} @ 1 mA VOLTS	CLAMPING VOLTAGE V_C @ 1 Amp (Figure 2) VOLTS	CLAMPING VOLTAGE V_C @ 5 Amp (Figure 2) VOLTS	PEAK FORWARD VOLTAGE V_F @ 1 Amp (Figure 2) VOLTS	STANDBY CURRENT I_o @ 5 Volts μ A	CAPACITANCE C @ 0V, (f = 1 MHz) Between I/O pins and GND pF		CAPACITANCE C @ 0V, (f = 1 MHz) Between I/O pins pF	
		MIN	MAX	MAX	MAX	MAX	TYP	MAX	TYP	MAX
SRLC05	R05	5.6	8	11	2	2	4	6	2	3

Note: Transient Voltage Suppressor (TVS) product is normally selected based on its stand off voltage V_{WM} . Product selected voltage should be equal to or greater than the continuous peak operating voltage of the circuit to be protected.

SYMBOLS & DEFINITIONS

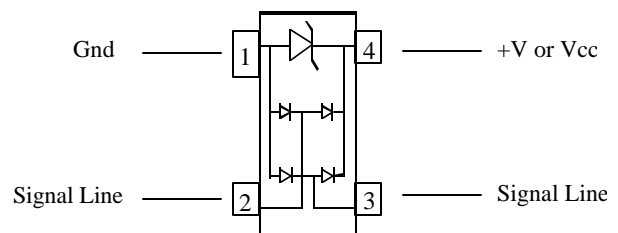
Symbol	DEFINITION
V_{WM}	Stand Off Voltage: Maximum dc voltage that can be applied over the operating temperature range. V_{WM} must be selected to be equal or be greater than the operating voltage of the line to be protected.
V_{BR}	Minimum Breakdown Voltage: The minimum voltage the device will exhibit at a specified current
V_C	Clamping Voltage: Maximum clamping voltage across the TVS device when subjected to a given current at a pulse time of 20 μ s.
I_b	Standby Current: Leakage current at V_{WM} .
C	Capacitance: Capacitance of the TVS as defined @ 0 volts at a frequency of 1 MHz and stated in picofarads.

GRAPHS

OUTLINE AND SCHEMATIC


DIM	INCHES		MM	
	MIN	MAX	MIN	MAX
A	.032	.040	0.80	1.00
A1	.040	.048	1.00	1.20
B	—	.057	—	1.44
C	—	.087	—	2.20
D	.075 BSC		1.90 BSC	
E	.067 BSC		1.70 BSC	
G	.032	.040	0.80	1.00
H	.134	.140	3.40	3.60

PAD LAYOUT

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.070	0.080	1.78	2.03
B	0.047	0.055	1.20	1.40
C	0.030	0.037	0.77	0.94
C1	0.015	0.020	0.37	0.50
D	0.110	0.119	2.80	3.04
E	0.035	0.044	0.89	1.17
F	0.071	0.079	1.80	2.00
G	0.0006	0.006	0.013	0.05
H	0.003	0.007	0.085	0.17
I	0.018	0.023	0.45	0.60
J	0.083	0.093	2.10	2.50

OUTLINE

SCHEMATIC