

Features

- 400 watts peak pulse power ($t_p = 8/20\mu s$)
- Protects two -7V to 12V lines
- Low capacitance
- Low clamping voltage
- Solid -state silicon avalanche technology
- IEC 61000-4-2 Level 4 ($\pm 8kV$ contact $\pm 15kV$ air)



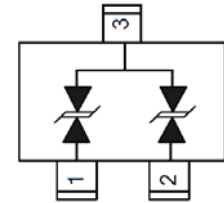
RoHS
COMPLIANT



Marking: 7AM SOT-23

Applications

- Protection of RS -485 transceivers with extended common -mode range
- Security systems
- Automatic Teller Machines
- HFC systems
- Net works



Schematic Diagram

Absolute Maximum Ratings ($T_a=25^\circ C$ unless otherwise noted)

Parameter	Symbol	Value	Units
Peak Pulse Power	$P_{PP}^{(1)}$	400	W
Peak Pulse Current	$I_{PP}^{(1)}$	12	A
Lead Solder Temperature – Maximum (10 Second Duration)	T_L	260	°C
Junction Temperature	T_J	-55 to 125	
Storage Temperature	T_{STG}	-55 to 150	

Note: 1 Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC61000-4-5.

Electrical Characteristics ($T_a=25^\circ C$ unless otherwise specified)

Parameter	Symbol	Test Condition	Pins 1 to 3 and 2 to 3 (12V TVS)			Pins 3 to 1 and 3 to 2 (7V TVS)			Unit
			Min	Typ.	Max	Min	Typ.	Max	
Reverse standoff voltage	V_{RWM}	Pin 3 to 1 or Pin 2 to 1			12			7	V
Breakdown voltage	V_{BR}	$I_T=1mA$	13.3			7.5			V
Reverse leakage current	I_R	$V_R=V_{RWM}$			1			1	μA
Clamping voltage	V_C	$I_{PP}=5A, t_p=8/20\mu s$			20			10	V
		$I_{PP}=12A, t_p=8/20\mu s$			26				
Junction capacitance	C_J	$V_R=0V, f=1MHz$			75			75	pF
		$V_R=0V, f=1MHz$		45			45		

Ratings and Characteristics Curves

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Figure 1 Non-Repetitive Peak Pulse Power vs. Pulse Time

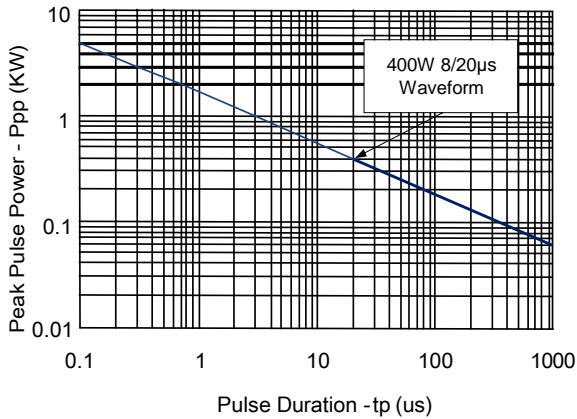


Figure 2 Power Derating curve

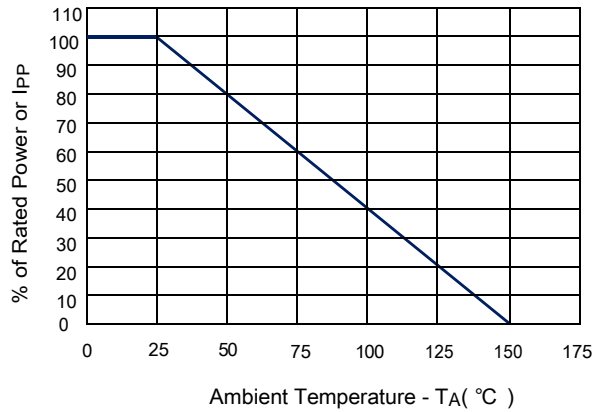


Figure 3 Pulse Waveform

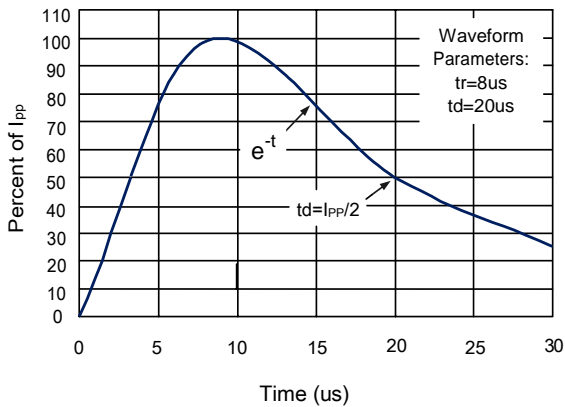


Figure 4 Clamping Voltage vs. Peak Pulse Current

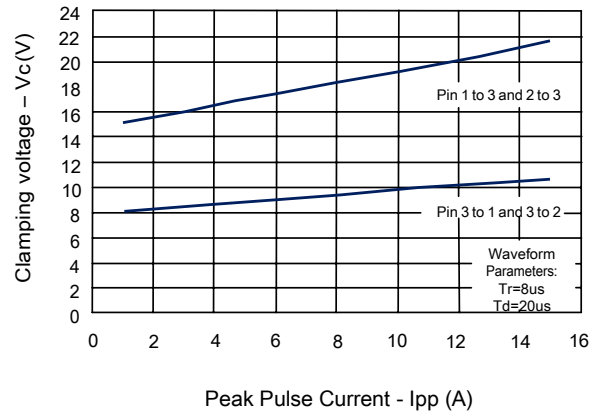
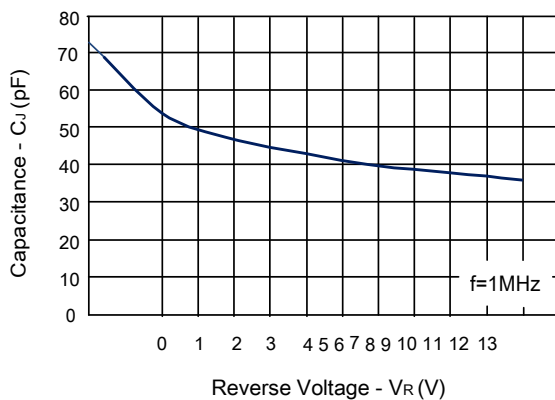


Figure 5 Capacitance vs. Reverse Voltage

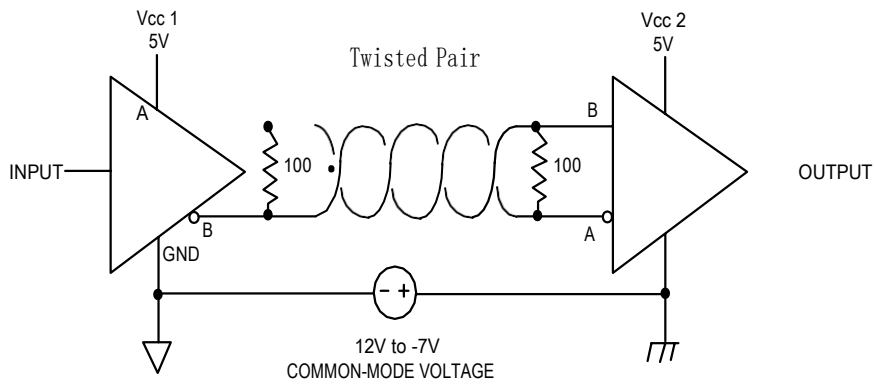


Application Information

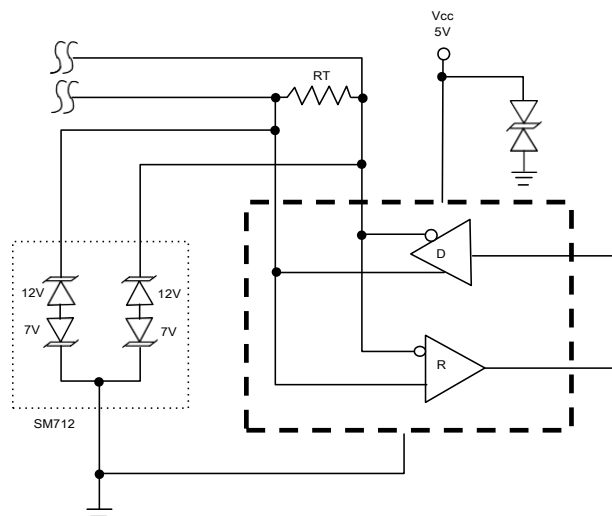
Device Connection for Protection of Two RS-485 Data Lines

EIA RS-485 specifies a $\pm 7V$ ground difference between devices on the bus. This permits the bus voltage to range from +12V (5V + 7V) to -7V (0 - 7V).

RS-485 Common Mode Voltages

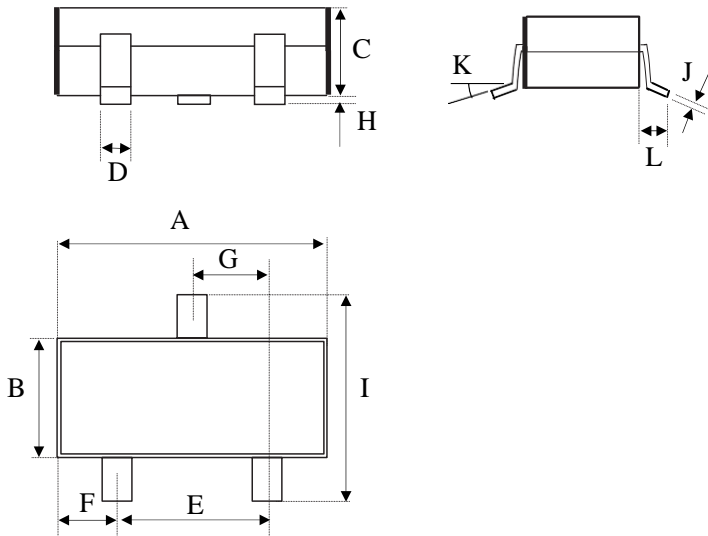


RS-485 Protection Circuit



Package Outline Dimensions

in inches (millimeters)



Dim	millimeters	
	min	max
A	2.80	3.00
B	1.20	1.40
C	0.89	1.11
D	0.30	0.50
E	1.78	2.04
F	0.45	0.60
G	0.89	1.02
H	0.013	0.100
I	2.25	2.55
J	0.085	0.177
K	0°	10°
L	0.45	0.60

Revision History

Document Version	Date of release	Discription of changes
Rev.A	2014.03.25	First issue

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