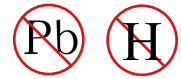




## Asymmetrical TVS for ESD Diode Extended Common-Mode RS-485



### Features

- Small package for use in portable electronics
- ESD protects two +12V to -7V lines
- Low leakage current
- Low clamping voltage
- Response Time is < 1 ns
- ESD protection of two lines
- Solid-state silicon avalanche technology
- Device Meets MSL 1 Requirements
- ROHS compliant

### Main applications

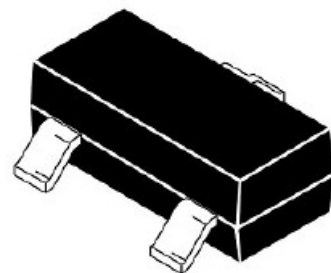
- Data lines
- Industrial Controls
- Computers and peripherals
- Portable instrumentation
- Peripherals
- Protection of RS-485 transceivers with extended common-mode range
- Security systems
- Automatic Teller Machines
- HFC systems
- Networks

### Marking : 712

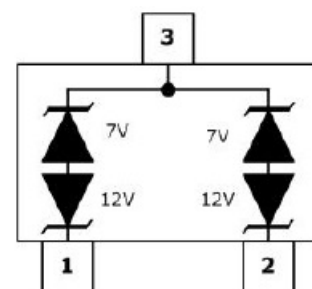
### Ordering Information

Device	Qty per Reel	Reel Size
YSM712	3000	7 Inch

### SOT-23



### PIN CONFIGURATION



# DEVICE CHARACTERISTICS

## YSM712

### Maximum ratings (Tamb=25°C Unless Otherwise Specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (tp=8/20μs waveform)	P <sub>PPP</sub>	400	Watts
ESD Rating per IEC61000-4-2:			
Contact		8	KV
Air		15	
Lead Soldering Temperature	T <sub>L</sub>	260 (10 sec.)	°C
Operating Temperature Range	T <sub>J</sub>	-55 ~ 150	°C
Storage Temperature Range	T <sub>STG</sub>	-55 ~ 150	°C

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

\*Other voltages may be available upon request.

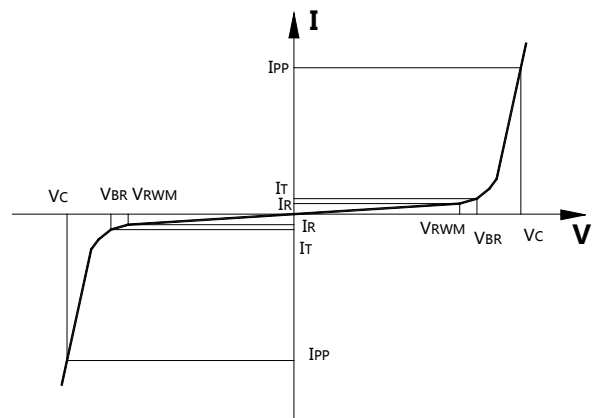
1. Non-repetitive current pulse, per Figure 1.

### Electrical characteristics (Tamb=25°C Unless Otherwise Specified)

Symbol	Parameter	Conditions	Pins 1 to 3 and 2 to 3 (12V TVS)			Pins 3 to 1 and 3 to 2 (7V TVS)			Units
			Min.	Typ.	Max.	Min.	Typ.	Max.	
V <sub>RWM</sub>	Reverse Working Voltage	Pin 3 to 1 or Pin 2 to 1			12			7	V
V <sub>BR</sub>	Reverse Breakdown Voltage	I <sub>T</sub> = 1mA,	13.3			7.5			V
I <sub>R</sub>	Reverse Leakage Current	V <sub>R</sub> = V <sub>RWM</sub>			1			20	μA
V <sub>C</sub>	Clamping Voltage	I <sub>PP</sub> = 1A, tp =8/20μs,			18			10	V
		I <sub>PP</sub> = 12A, tp =8/20μs,			28			15	V
C <sub>J</sub>	Junction Capacitance	V <sub>R</sub> = 0V, f = 1MHz,		50	65		50	65	pF

Junction capacitance is measured in VR=0V,F=1MHz

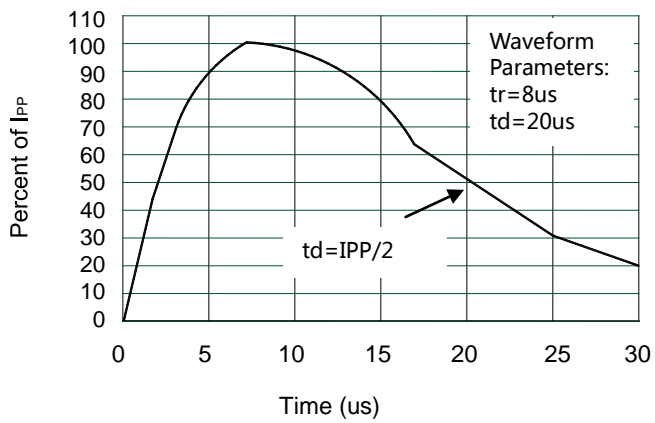
Symbol	Parameter
V <sub>RWM</sub>	Working Peak Reverse Voltage
V <sub>BR</sub>	Breakdown Voltage @ I <sub>T</sub>
V <sub>C</sub>	Clamping Voltage @ I <sub>PP</sub>
I <sub>T</sub>	Test Current
I <sub>RM</sub>	Leakage current at V <sub>RWM</sub>
I <sub>PP</sub>	Peak pulse current
C <sub>O</sub>	Off-state Capacitance
C <sub>J</sub>	Junction Capacitance



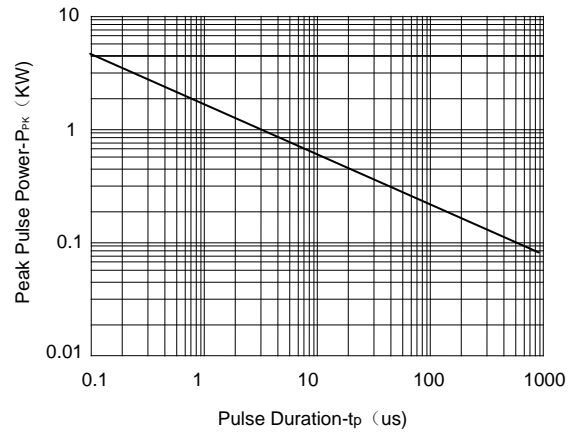
# DEVICE CHARACTERISTICS

## YSM712

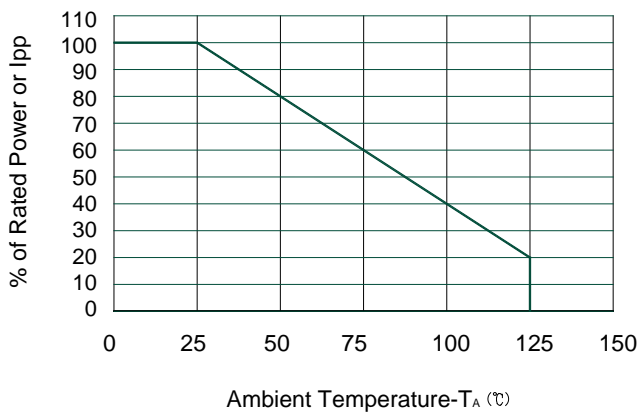
### Typical electrical characterist applications



Pulse Waveform



Non-Repetitive Peak Pulse Power vs. Pulse Time



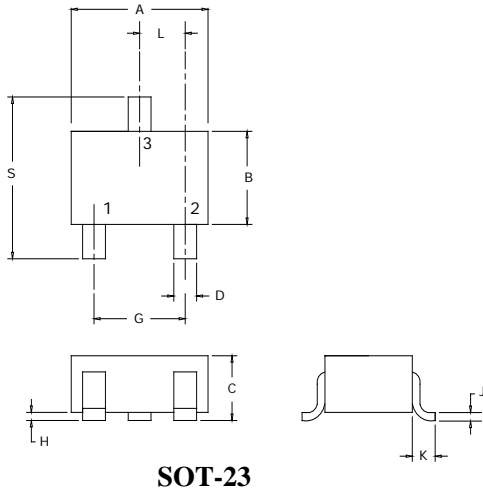
Power Derating Curve

# PACKAGE OUTLINE & DIMENSIONS

## YSM712

### Mechanical Data

- Case: SOT-23
- Case Material: Molded Plastic. UL Flammability



Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	2.80	3.00	0.110	0.118
B	1.20	1.40	0.047	0.055
C	0.90	1.15	0.035	0.045
D	0.30	0.50	0.011	0.020
G	1.8	2.0	0.071	0.078
H	0.0	0.100	0	0.004
J	0.080	0.15	0.003	0.006
K	0.550REF		0.022REF	
L	0.95TYP		0.037TYP	
S	2.25	2.550	0.089	0.100

### Recommended Pad outline

