

HIGH SPEED ASYMMETRICAL TVS ARRAY

APPLICATIONS

- RS-485 Transceivers
- Network Interfaces
- Wireless Systems
- Hand Held/Portable Electronics

FEATURES

- IEC 1000-4-2, -4 & -5 Industry Requirements
- 400 Watts Peak Pulse Power Dissipation (8/20 μ s)
- ESD Protection > 25 kilovolts
- Standard SOT 23 Package
- Asymmetrical Data Line Protection
- UL 94V-0 Flammability Classification

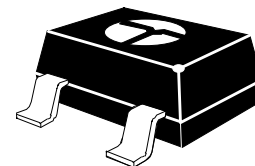
DESCRIPTION

The PSM712 transient voltage suppressor (TVS) arrays are designed for high speed asymmetrical data line applications, specifically RS-485. The 7 and 12 volt devices provide protection against ESD, EFT, tertiary lightning and switching (logic level) transients. The PSM712 protects against Electromagnetic Compatibility (EMC) transient immunity standards IEC 1000-4-2, -4, -5 and European standard EN50082 and EN61000-4.

This device is offered in a SOT-23 package with a peak pulse power (P_{PP}) rating of 400 Watts for an 8/20 μ s pulse. The PSM712 can be used for two lines of protection.

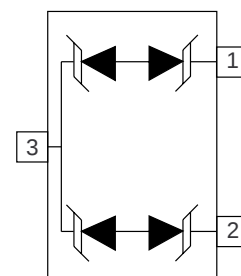
MAXIMUM RATINGS	
P_{PP} @ 25°C (See Figure 1)	400 Watts, 8/20 μ s Waveshape
Operating & Storage Temperature	-55° to +150°C
Repetition Rate (Duty Cycle)	0.01%
$t_{Clamping}$ (0 Volts to V_{BR} Min.)	Bidirectional: < 10 x 10 ⁻⁹ seconds
MECHANICAL CHARACTERISTICS	
Package	Molded JEDEC SOT-23 Surface Mount Package
Packaging	8mm Tape per EIA 481-1
Approximate Weight	10 milligrams
Device Markings	Marking Code

IEC 1000-4 COMPATIBLE

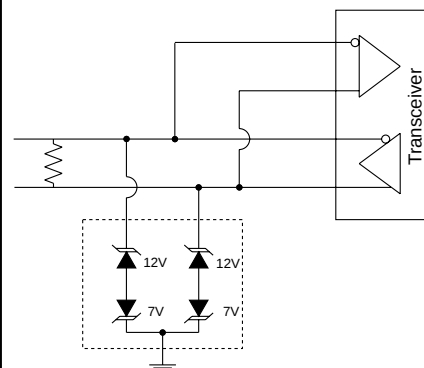


SOT-23 PACKAGE

CIRCUIT DIAGRAM



TYPICAL TRANSCEIVER APPLICATION



ELECTRICAL CHARACTERISTICS @ 25° C Ambient Temperature

PROTEK PART NUMBER (See Note 1)	DEVICE MARKING CODE (See Note 2)	RATED STAND-OFF VOLTAGE V_{WM} VOLTS	MINIMUM BREAKDOWN VOLTAGE @ 1 mA $V_{(BR)}$ VOLTS	MAXIMUM CLAMPING VOLTAGE (See Fig. 2) @ $I_P = 1$ A V_C VOLTS	MAXIMUM CLAMPING VOLTAGE (See Fig. 2) @ $I_P = 10$ A V_C VOLTS	MAXIMUM PEAK PULSE CURRENT (See Fig. 2) @ 8/20 μ s I_{PP} AMPS	MAXIMUM LEAKAGE CURRENT @ V_{WM} I_D μ A	MAXIMUM CAPACITANCE @ 0V, 1 MHz C pF
Pin 3-1 & 3-2	712	7.0	7.5	11.0	14.0	15.0	20	75
Pin 1-3 & 2-3	712	12.0	13.3	19.0	24.0	15.0	1	75

Note 1: For 7V, pin 3 is positive. For 12V, pins 1 and 2 are positive.

Note 2: Marking code applies to same device.

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

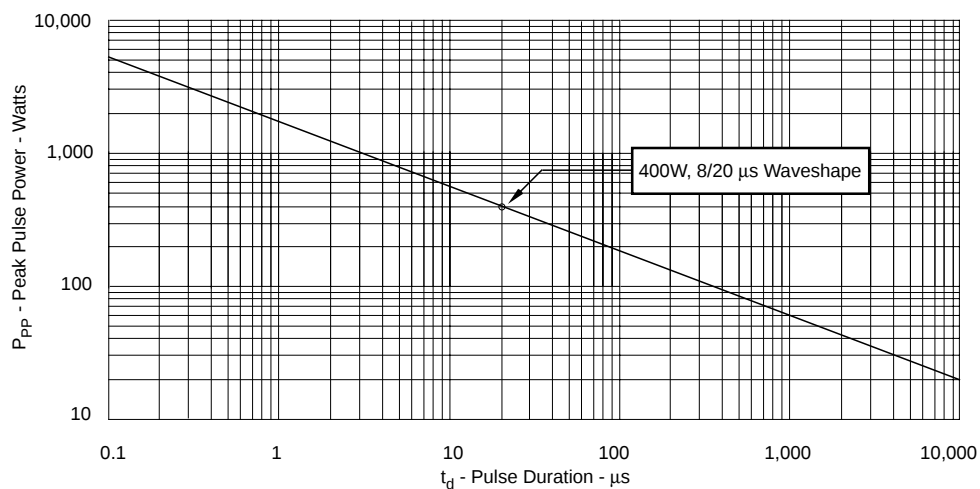


FIGURE 2
PULSE WAVE FORM

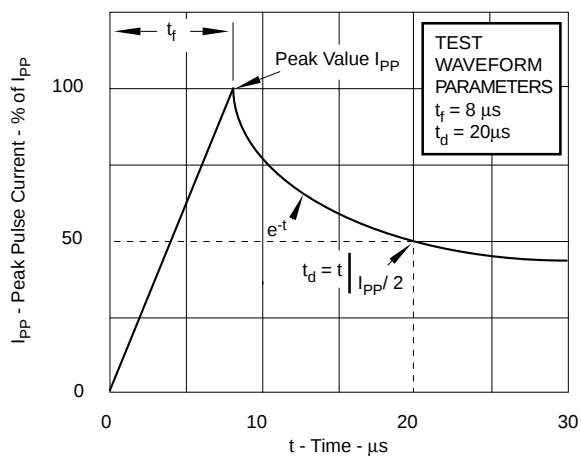
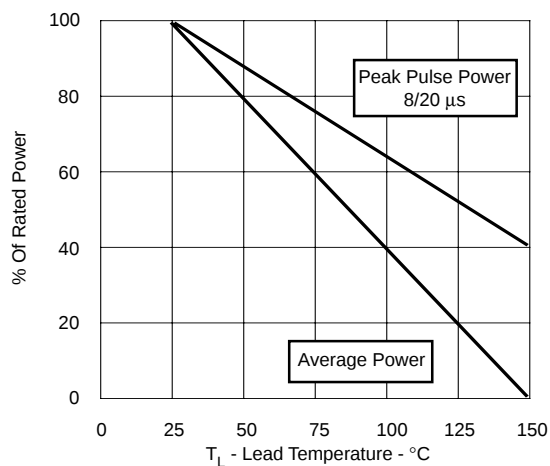
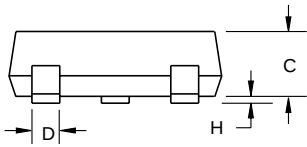
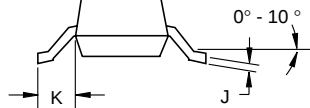
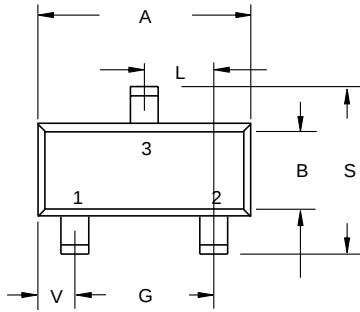


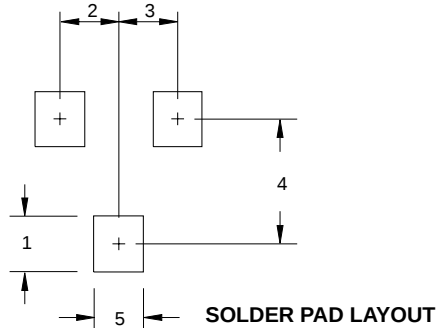
FIGURE 3
POWER DERATING CURVE



SOT-23 PACKAGE OUTLINE



DIM	TYPICAL	
	Millimeters	Inches
1	0.85	0.033
2	0.95	0.037
3	0.95	0.037
4	2.00	0.079
5	0.85	0.033



SOT-23 PACKAGE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.80	3.04	0.1102	0.1197
B	1.20	1.40	0.0472	0.0551
C	0.89	1.11	0.0350	0.0440
D	0.37	0.50	0.0150	0.0200
G	1.78	2.04	0.0701	0.0807
H	0.013	0.100	0.0005	0.0040
J	0.085	0.177	0.0034	0.0070
K	0.45	0.60	0.0180	0.0236
L	0.89	1.02	0.0350	0.0401
S	2.10	2.50	0.0830	0.0984
V	0.45	0.60	0.0177	0.0236

NOTES:

1. Dimensioning and tolerance per ANSI Y 14.5M, 1985.
2. Controlling Dimension: Inches
3. Maximum lead thickness includes lead finish thickness.
4. Minimum lead thickness is the minimum thickness of the base material.
4. Pin 3 is the cathode (Unidirectional only).