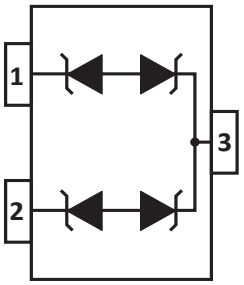
DESCRIPTION

The PSM712 is an asymmetrical transient voltage suppressor (TVS) array,
designed specifically for RS-485 applications. This device provides protection
against ESD, tertiary lightning and switching transients.

The PSM712 has a peak pulse power of 600 Watts for an 8/20μs waveshape and is available in SOT-23 package con-figuration.

This device meets the IEC 61000-4-2, 61000-4-4 and IEC 61000 -4-5 requirements.



MECHANICAL CHARACTERISTICS

- Molded JEDEC SOT-23 Package
- Approximate Weight: 8 milligrams
- Lead-Free Pure-Tin Plating (Annealed)
- Solder Reflow Temperature:
  Pure-Tin - Sn, 100: 260-270°C
- Flammability Rating UL 94V-0
- 8mm Tape and Reel per EIA Standard 481

APPLICATIONS

- RS-485 Transceivers
- Network Interfaces
- Wireless Systems
- Portable Electronics

FEATURES

- Compatible with IEC 61000-4-2 (ESD): Air 15kV,Contact 8kV
- Compatible with IEC 61000-4-4 (EFT): 40A, 5/50ns
- Compatible with IEC 61000-4-5 (Surge): 24A,8/20μs - Level 2 (Line- Ground) & Level 3(Line -Line)
- 600 Watts Peak Pulse Power per Line(tp =8/20μs)

TYPICAL DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

PARAMETER	SYMBOL	VALUE	UNITS
Peak Pulse Power (tp = 8/20μs) - See Figure 1	P_{PP}	500	W
Operating Temperature	T_L	-55 to 150	°C
Storage Temperature	T_{STG}	-55 to 150	°C

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER (Note 1)	DEVICE MARKING	RATED STAND-OFF VOLTAGE V_{WM} VOLTS	MINIMUM BREAKDOWN VOLTAGE @ 1mA $V_{(BR)}$ VOLTS	MAXIMUM CLAMPING VOLTAGE (Fig. 2) @ I_P = 1A V_C VOLTS	MAXIMUM CLAMPING VOLTAGE (Fig. 2) @ 8/20µs V_C @ I_{PP}	MAXIMUM LEAKAGE CURRENT @V_{WM} I_D µA	TYPICAL CAPACITANCE @0V, 1MHz C pF
Pin 3-1 & Pin 3-2	712	7.0	7.5	11.0	17V @ 34A	20	75
Pin 1-3 & Pin 2-3		12.0	13.3	19.0	30V @ 30A	1	75

NOTES
1. For 7V, pin 3 is positive. For 12V, pins 1 and 2 are positive.
2. Marking code applies to same device.

TYPICAL DEVICE CHARACTERISTICS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

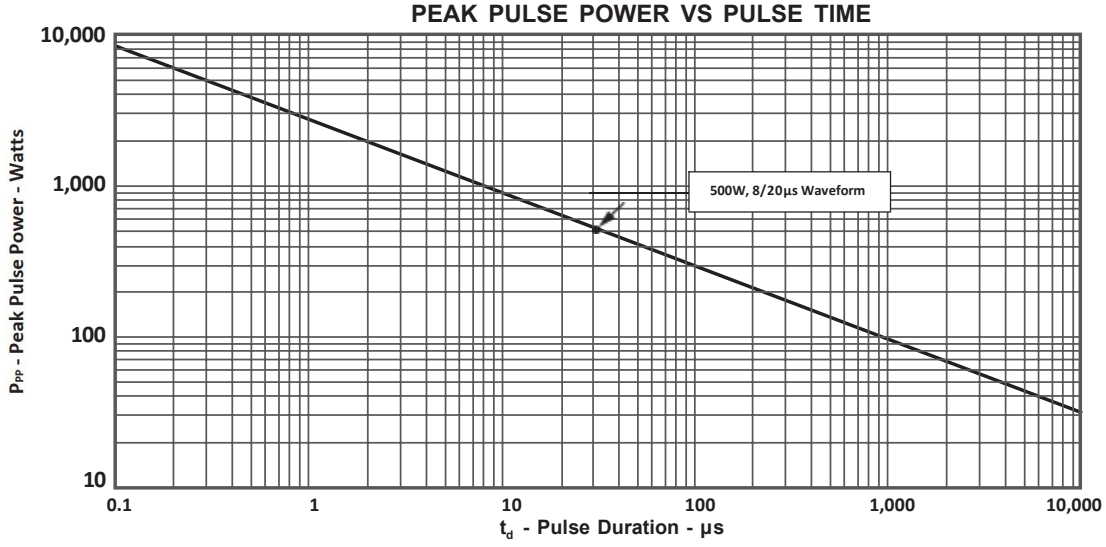
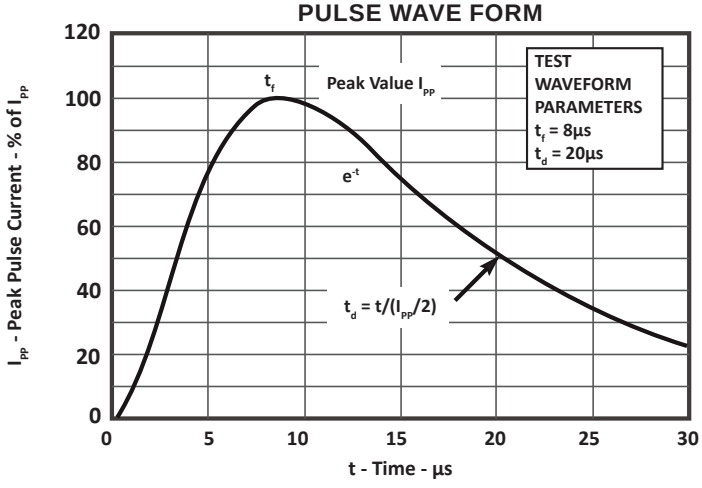
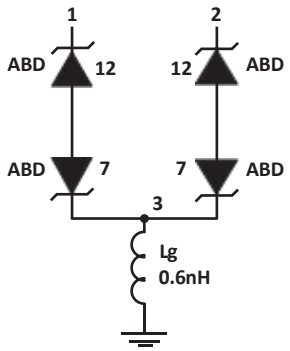


FIGURE 2
PULSE WAVE FORM



SPICE MODEL

FIGURE 1
SPICE MODEL

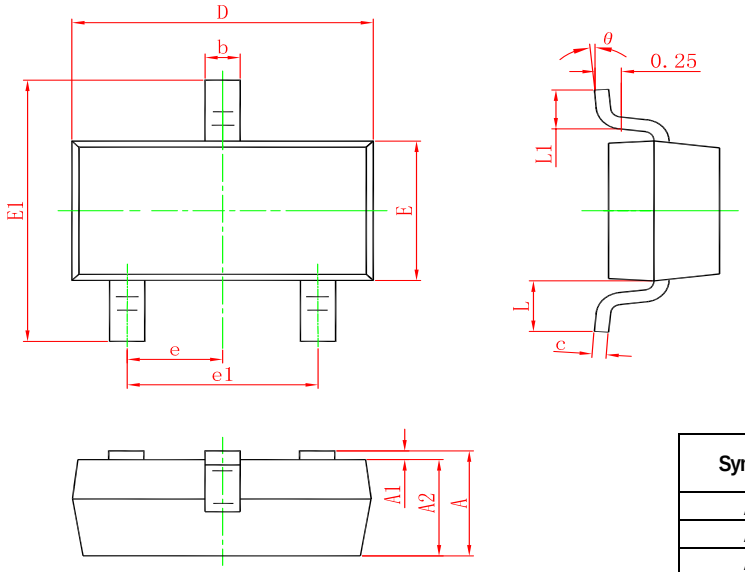


ABD - Avalanche Breakdown Diode (TVS)
Lg - Lead Inductance

TABLE 1 - SPICE PARAMETERS		
PARAMETER	**UNIT**	**ABD(TVS)**
BV	V	See Table 2
IBV	μA	See Table 2
C_{jo}	pF	See Table 2
I_s	A	See Table 2
Vj	V	0.6
M	-	0.33
N	-	1
R_s	Ohms	See Table 2
TT	s	1E-8
EG	eV	1.11

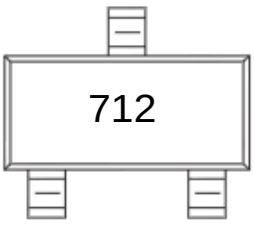
TABLE 2 - ABD SPECIFIC SPICE PARAMETERS					
PART NUMBER	**B_V(VOLTS)**	**IBV(μA)**	**C_{jo}(pF)**	**I_s (AMPS)**	**Rs(OHMS)**
PSM712 - 7V	7.5	20	146	1E-11	0.28
PSM712 - 12V	13.3	1	123	1E-13	0.40

SOT-23 PACKAGE IMFORMATION



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.00	2.500	0.078	0.098
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

Marking



Ordering information

Order code	Package	Base qty	Delivery mode
PSM712-LF-T7	SOT-23	3000	Tape and reel