

600 WATT TVS ARRAY - ASYMMETRICAL DATA LINE PROTECTOR

DESCRIPTION:

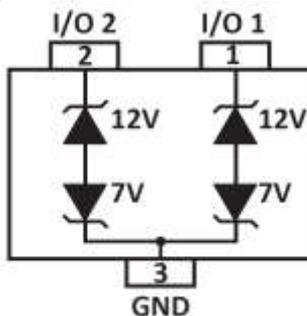


The ALPSM712 is an asymmetrical transient voltage suppressor (TVS) array, designed specifically for RS-485 applications.

This device provides protection against ESD, tertiary lightning and switching transients.

The ALPSM712 has a peak pulse power of 600 Watts for an 8/20 μ s waveshape and is available in SOT-23 package configuration.

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



FEATURES:

- Compatible with IEC 61000-4-2 (ESD): Air ± 15 kV, Contact ± 8 kV
- Compatible with IEC 61000-4-4 (EFT): 40A - 5/50ns
- Compatible with IEC 61000-4-5 (Surge): 24A, 8/20 μ s - Level 2 (Line-Ground) & Level 3 (Line-Line)
- 600 Watts Peak Pulse Power per Line ($t_p = 8/20\mu$ s)
- RoHS Compliant
- REACH Compliant

APPLICATIONS:

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



beyond boundaries...

ALPSM712

SOT-23

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}	600	Watts
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)	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 LEAKAGE CURRENT @V _{WM} I _D μA	TYPICAL CAPACITANCE @0V, 1MHz C pF
Pin 3-1 & Pin 3-2	7.0	7.5	11.0	20	75
Pin 1-3 & Pin 2-3	12.0	13.3	19.0	1	75

NOTES

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

TYPICAL DEVICE CHARACTERISTICS CURVES

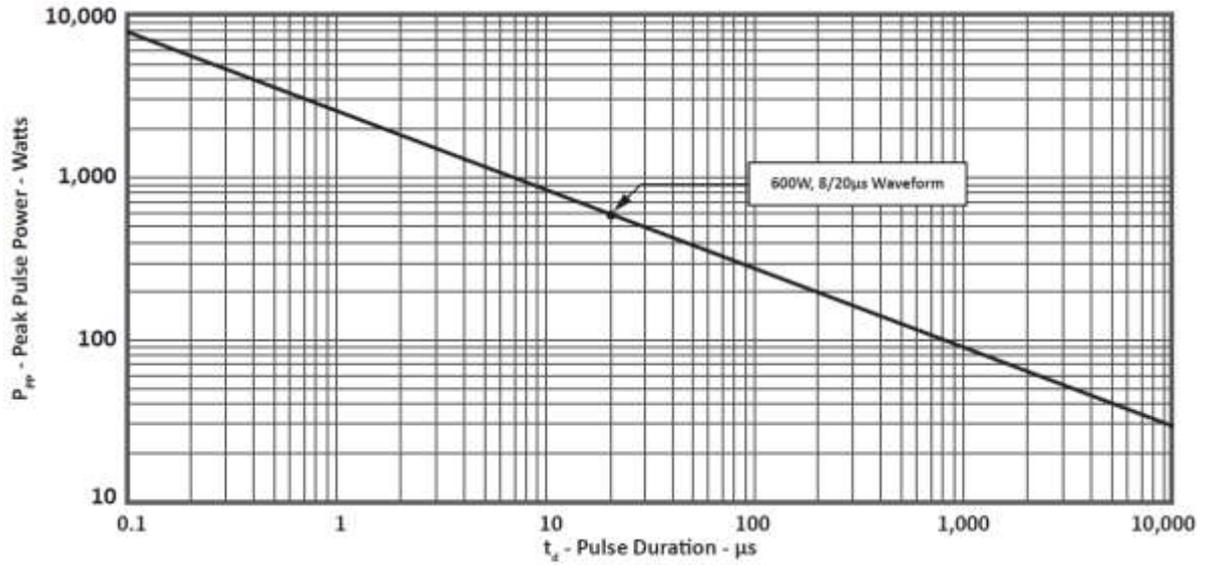


Fig1. PEAK PULSE POWER VS PULSE TIME

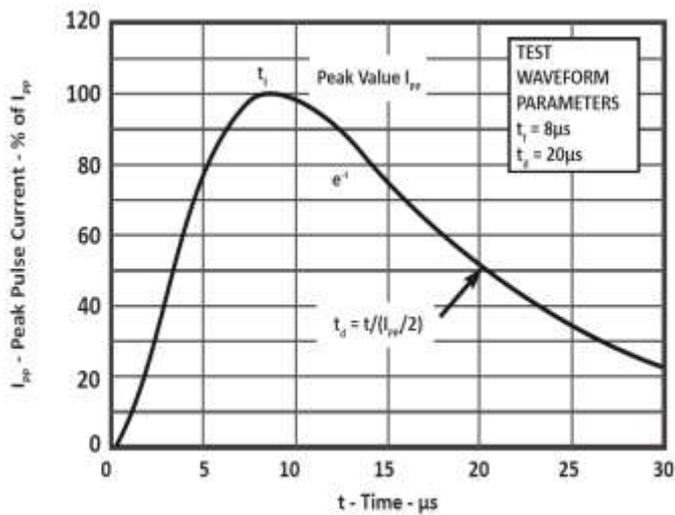


Fig2. PULSE WAVE FORM

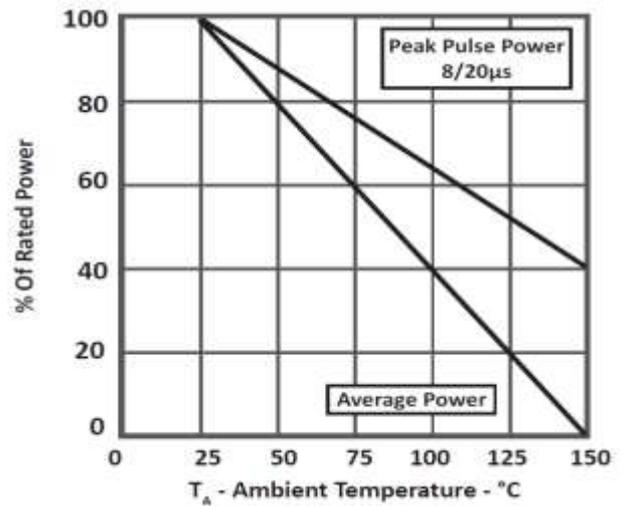
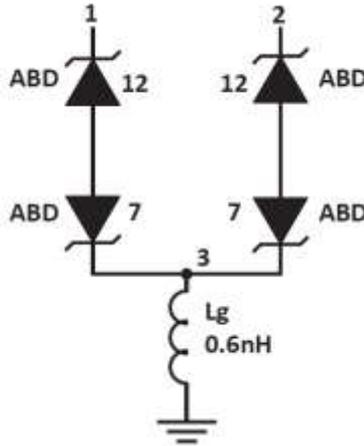


Fig3. POWER DERATING CURVE

SPICE MODEL

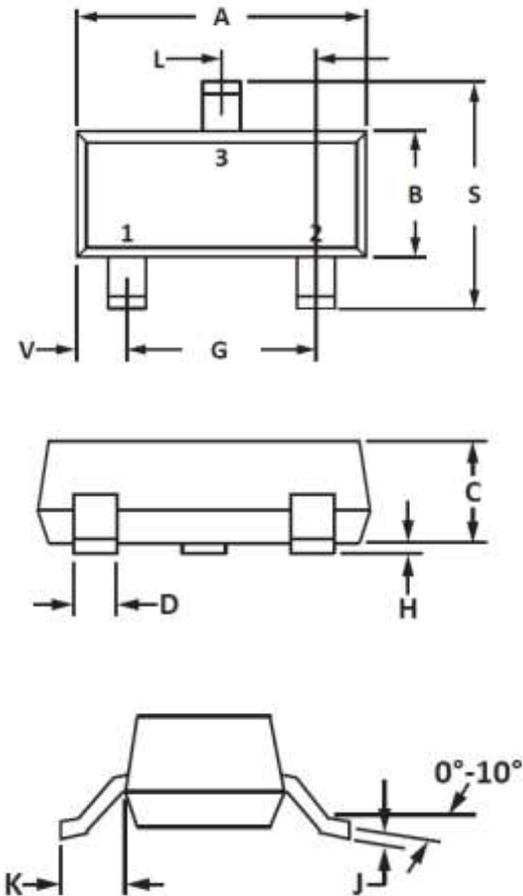


ABD - Avalanche Breakdown Diode (TVS)
Lg - Lead Inductance

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
V _j	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)	R _s (OHMS)
ALPSM712 - 7V	7.5	20	146	1E-11	0.28
ALPSM712 - 12V	13.3	1	123	1E-13	0.40

PACKAGE INFORMATION

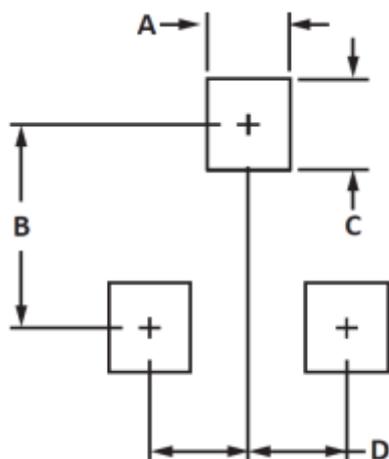


OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.80	3.04	0.110	0.120
B	1.20	1.40	0.047	0.055
C	0.89	1.11	0.035	0.044
D	0.37	0.50	0.015	0.020
G	1.78	2.04	0.070	0.081
H	0.013	0.100	0.001	0.004
J	0.085	0.177	0.003	0.007
K	0.45	0.60	0.018	0.024
L	0.89	1.02	0.035	0.040
S	2.10	2.50	0.083	0.098
V	0.45	0.60	0.018	0.024

NOTES

1. Controlling dimension: inches.
2. Dimensioning and tolerances per ANSI Y14.5M, 1985.
3. Pin 3 is the cathode (Unidirectional Only)
4. Dimensions are exclusive of mold flash and metal burrs.



PAD LAYOUT DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.71	0.97	0.028	0.038
B	1.88	2.13	0.074	0.084
C	0.71	0.97	0.028	0.038
D	0.81	1.07	0.032	0.042

NOTES

1. Controlling dimension: inches.



beyond boundaries...

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SOT-23

CUSTOMER NOTE:

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