

1.Description

The UMW SM712 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.

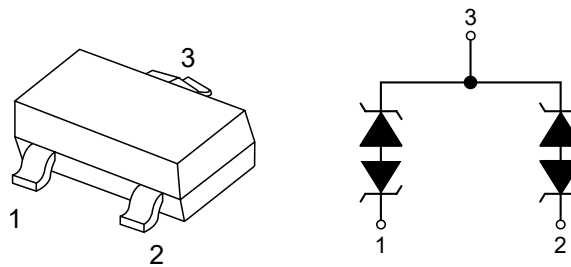
3.Features

- 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)

2.Applications

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

4.Pinning information



SOT-23



5. Absolute Maximum Ratings (@=25°C, unless otherwise specified)

Parameter	Symbol	Value	Units
Peak Pulse Power ($t_p=8/20\mu s$) - See Figure 1	P_{PP}	500	W
Junction Temperature	T_L	-55 to 150	°C
Storage Temperature	T_{STG}	-55 to 150	°C

6. Electrical Characteristics Per Line

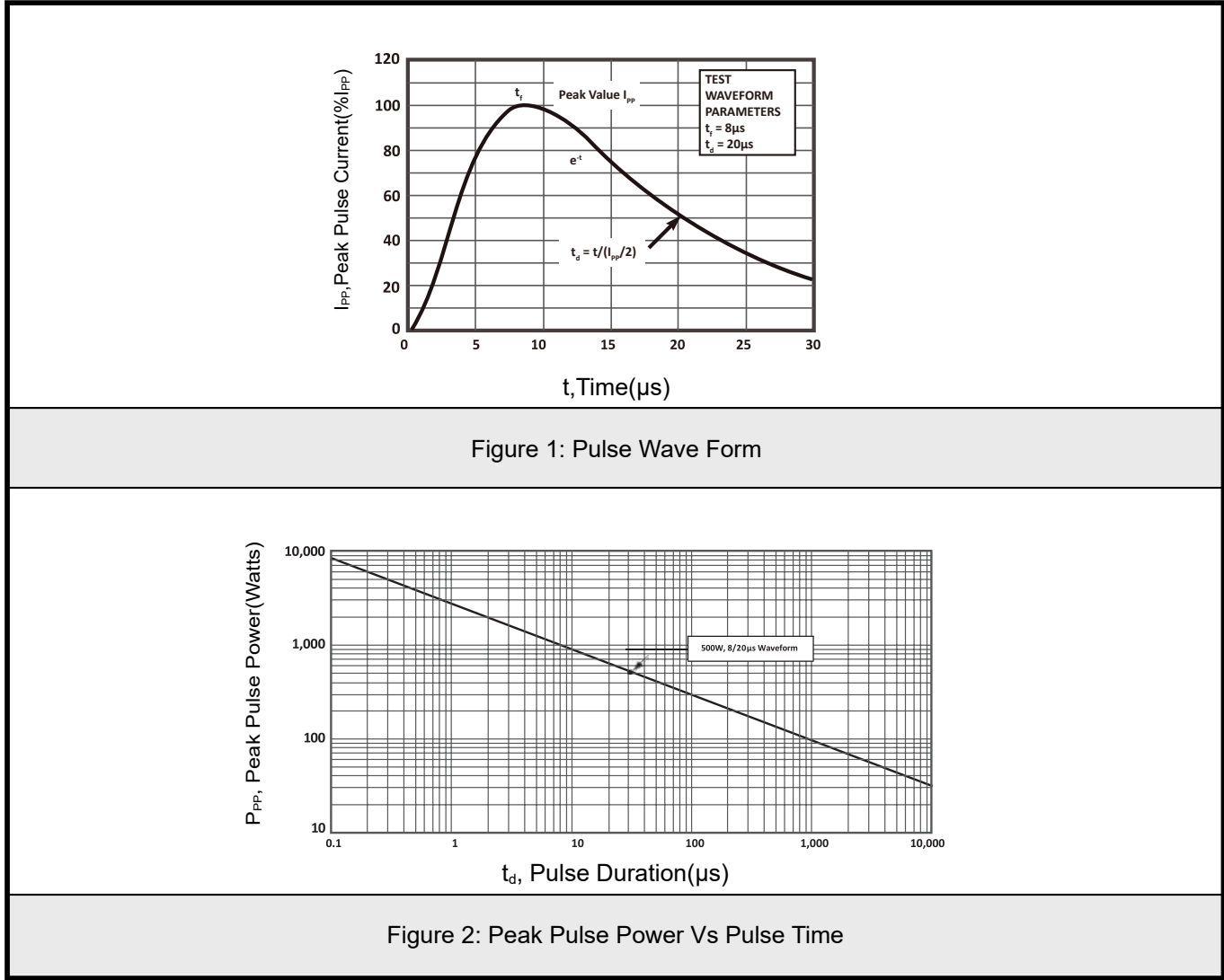
PART NUMBER (Note 1)	DEVICE MARKING	RATED STAND-OFF VOLTAGE	MINIMUM BREAKDOWN VOLTAGE	MAXIMUM CLAMPING VOLTAGE(Fig. 2)	MAXIMUM CLAMPING VOLTAGE(Fig. 2)	MAXIMUM LEAKAGE CURRENT	TYPICAL CAPACITANCE
			@ 1mA	@ $I_P=1A$	@ $8/20\mu s$	@ V_{WM}	@0V,1MHz
		V_{WM}	$V_{(BR)}$	V_C	V_C	I_D	C
		VOLTS	VOLTS	VOLTS	@ I_{PP}	μA	pF
Pin 3-1 & Pin 3-2	712	7	7.5	11	17V @ 34A	20	75
Pin 1-3 & Pin 2-3		12	13.3	19	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.



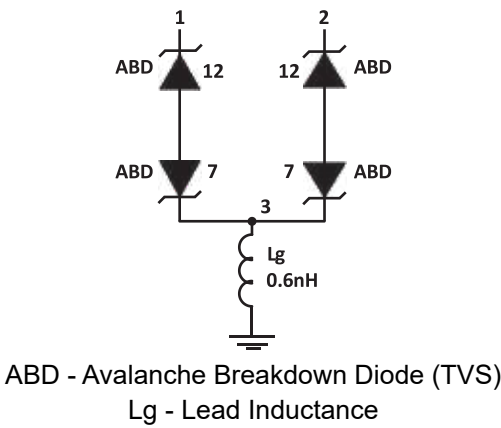
7. Typical characteristic





8.Spice Model

FIGURE 1 SPICE MODEL



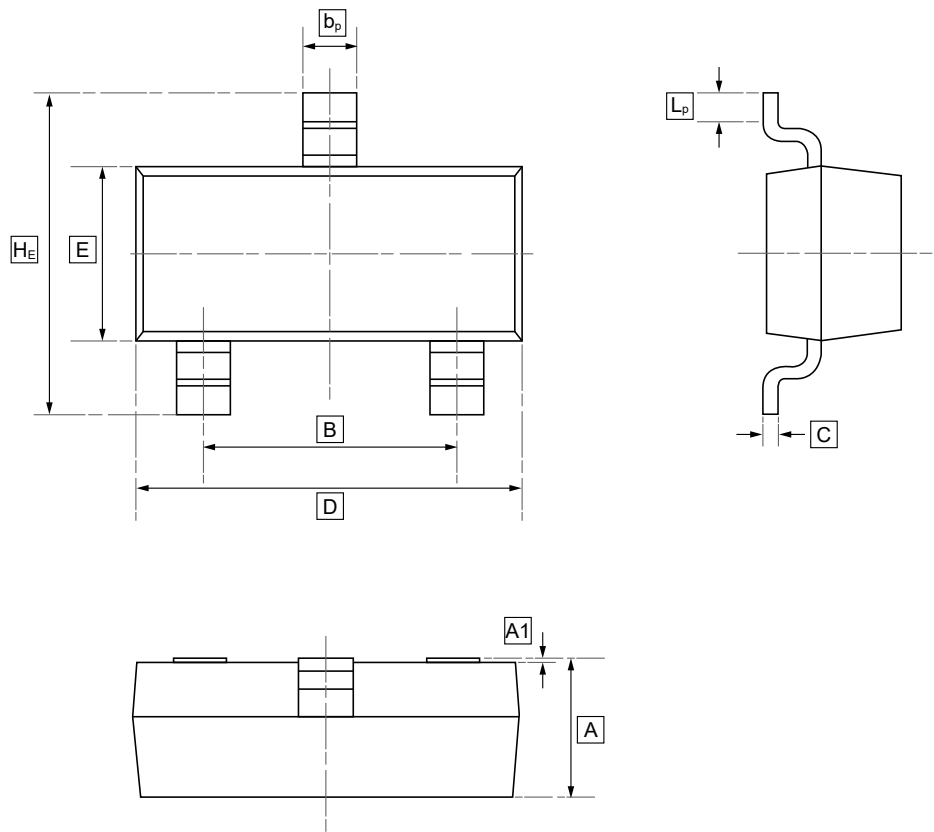
ABD - Avalanche Breakdown Diode (TVS)
Lg - Lead Inductance

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
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)	I _{BV} (μA)	C _{jo} (pF)	I _s (AMPS)	R _s (OHMS)
SM712 - 7V	7.5	20	146	1E-11	0.28
SM712 - 12V	13.3	1	123	1E-13	0.4



9.SOT-23 Package Outline Dimensions

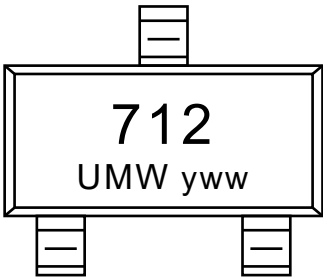


DIMENSIONS (mm are the original dimensions)

Symbol	A	B	b _p	C	D	E	H _E	A1	L _p
Min	0.95	1.78	0.35	0.08	2.70	1.20	2.20	0.013	0.20
Max	1.40	2.04	0.50	0.19	3.10	1.65	3.00	0.100	0.50



10.Ordering information



yww: Batch Code

Order Code	Package	Base QTY	Delivery Mode
UMW SM712	SOT-23	3000	Tape and reel



11.Disclaimer

UMW reserves the right to make changes to all products, specifications. Customers should obtain the latest version of product documentation and verify the completeness and currency of the information before placing an order.

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