

1. Description

The PSOT series are transient voltage suppressor (TVS) arrays, designed for power or data line applications that provide protection against ESD, tertiary lightning and switching transients. This series offers low clamping voltage for the protection of sensitive interfaces.

3. 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, 8/20 μ s -Level 2(Line-Ground) &
Level 3 (Line-Line)

4. Applications

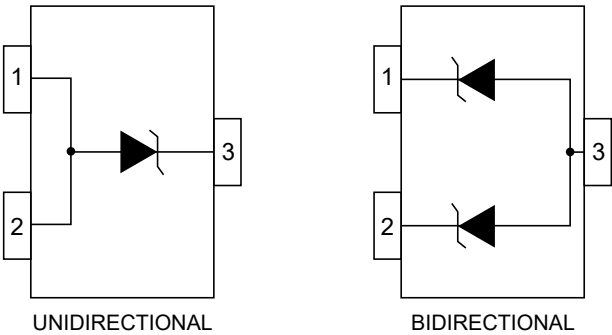
- RS-232, RS-422 & RS-423
- Cellular Phones
- Controlling & Monitoring Systems

2. Mechanical Data

- 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
- 500W Peak Pulse Power per Line($t_p=8/20\mu$ s)
- Low Clamping Voltage
- Bidirectional and Unidirectional Configurations
- Available in Multiple Voltages Ranging
from 3V to 36V
- RoHS Compliant
- REACH Compliant
- Handheld Devices
- Wireless Bus Protection



5.Pinning information



SOT-23

6.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
Forward Voltage @ 100mA, 300μs, Square Wave - See Note 1	V_F	1.5	V

Notes: 1. Applies to unidirectional pins only.



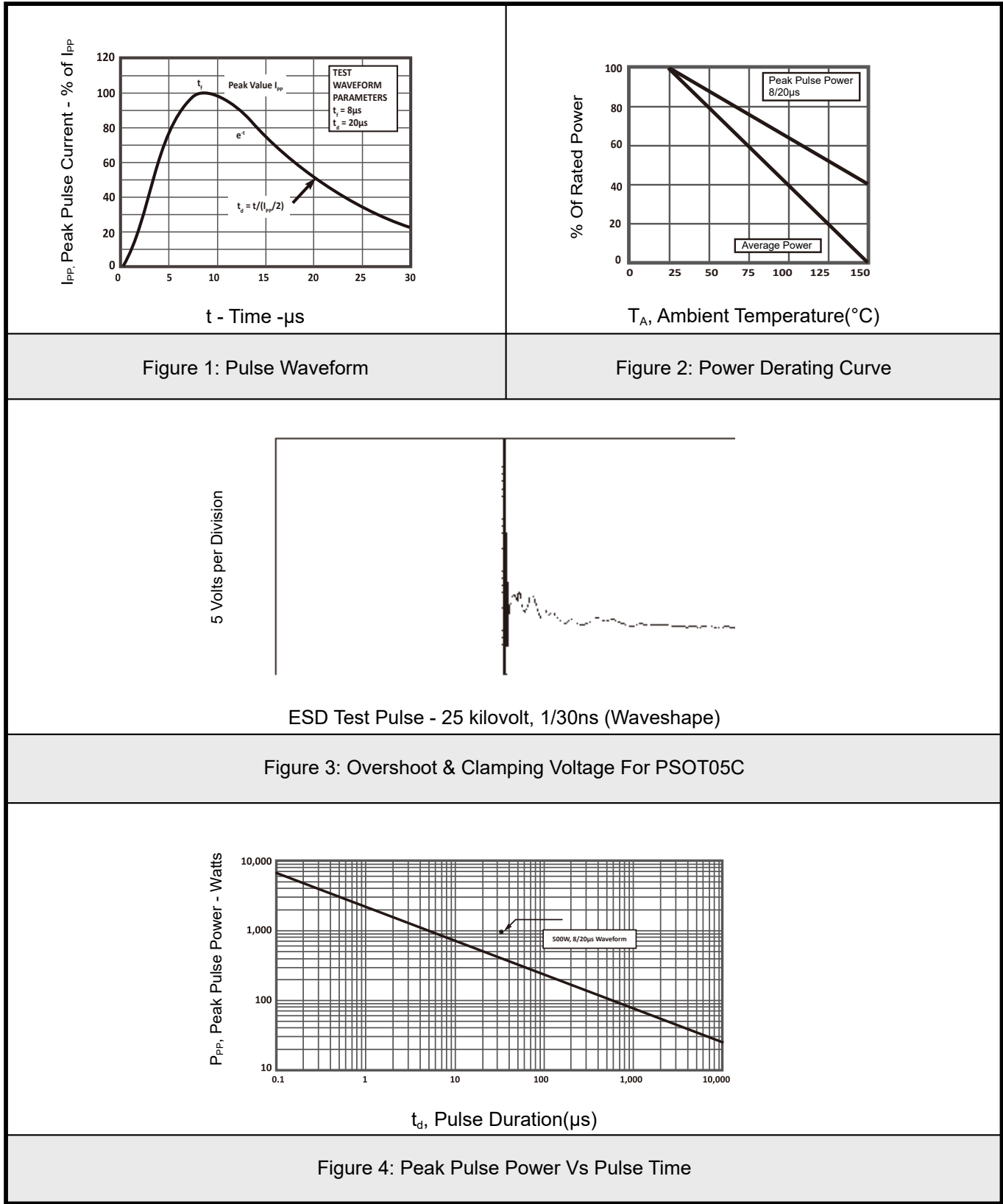
7. Electrical Characteristic ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

PART NUMBER (Note 1)	RATED STAND-OFF VOLTAGE	MINIMUM BREAKDOWN VOLTAGE	MAXIMUM CLAMPING VOLTAGE	MAXIMUM CLAMPING VOLTAGE	MAXIMUM LEAKAGE CURRENT	TYPICAL CAPACITANCE
		@ 1mA	@ $I_P=1\text{A}$	@ 8/20 μs	@ V_{WM}	@0V, 1MHz
	V_{WM}	$V_{(BR)}$	V_C	$V_C @ I_{PP}$	I_D	C
	VOLTS	VOLTS	VOLTS		μA	pF
PSOT03	3.3	4.0	6.5	10.9V @ 43.0A	125	500
PSOT03C	3.3	4.0	7.0	10.9V @ 43.0A	125	300
PSOT05	5.0	6.0	9.8	13.5V @ 42.0A	20	350
PSOT05C	5.0	6.0	9.8	13.5V @ 42.0A	20	210
PSOT08	8.0	8.5	13.4	16.9V @ 34.0A	10	250
PSOT08C	8.0	8.5	13.4	16.9V @ 34.0A	10	150
PSOT12	12.0	13.3	19.0	25.9V @ 21.0A	2	150
PSOT12C	12.0	13.3	19.0	25.9V @ 21.0A	2	90
PSOT15	15.0	16.7	24.0	30.0V @ 17.0A	1	100
PSOT15C	15.0	16.7	24.0	30.0V @ 17.0A	1	60
PSOT24	24.0	26.7	43.0	49.0V @ 12.0A	1	88
PSOT24C	24.0	26.7	43.0	49.0V @ 12.0A	1	63
PSOT36	36.0	40.0	51.0	76.8V @ 9.0A	1	80
PSOT36C	36.0	40.0	51.0	76.8V @ 9.0A	1	60

Notes: 1. Part Numbers with an additional "C" suffix are bidirectional devices, i.e., PSOT05C.

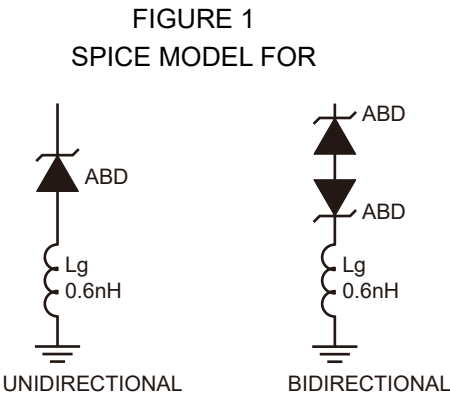


8. Typical characteristic





9.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	1
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

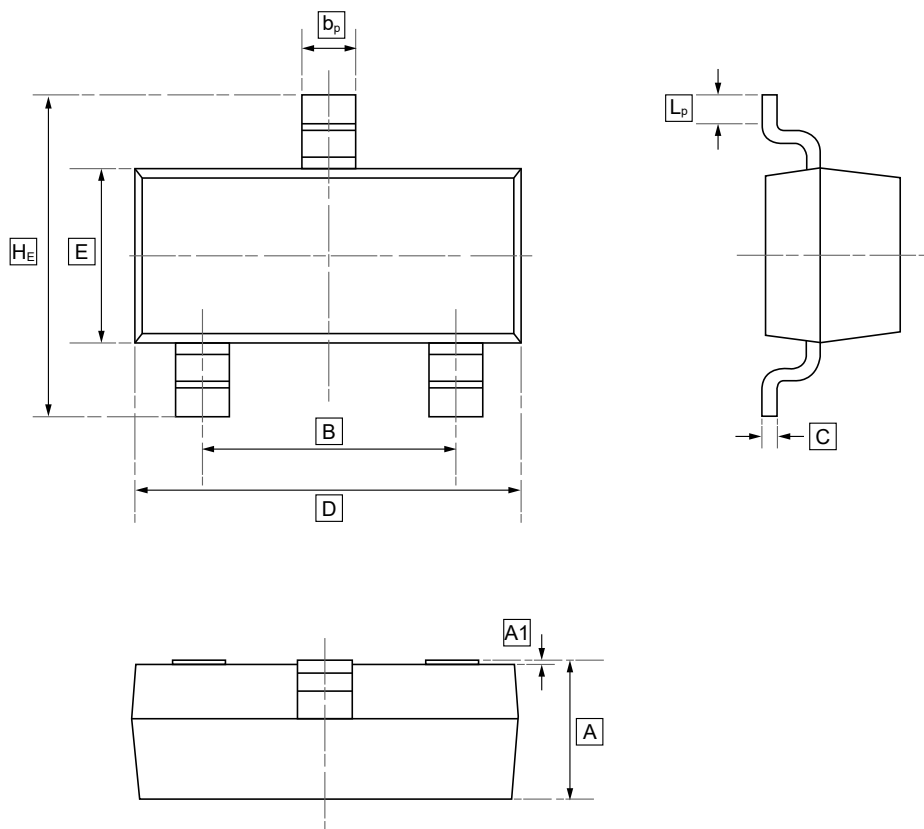


TABLE 2 - ABD SPECIFIC SPICE PARAMETERS

PART NUMBER	B _v (VOLTS)	C _{jo} (pF)	I _s (AMPS)	R _s (OHMS)
PSOT03	4.5	438	1E-13	0.21
PSOT05	6.0	284	1E-13	0.21
PSOT08	8.5	146	1E-13	0.21
PSOT12	13.3	123	1E-13	0.21
PSOT15	16.7	102	1E-13	0.21
PSOT24	26.7	61	1E-13	0.21
PSOT36	40.0	40	1E-13	0.21
PSOT03C	4.5	219	1E-13	0.28
PSOT05C	6.0	142	1E-13	0.28
PSOT08C	8.5	73	1E-13	0.28
PSOT12C	13.3	62	1E-13	0.28
PSOT15C	16.7	51	1E-13	0.28
PSOT24C	26.7	30	1E-13	0.28
PSOT36C	40.0	20	1E-13	0.28



10.SOT-23 Package Outline Dimensions

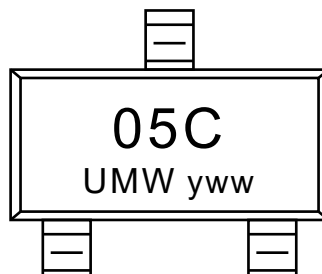


DIMENSIONS (mm are the original dimensions)

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



11.Ordering information



yww: Batch Code

Order Code	Marking	Package	Base QTY	Delivery Mode
UMW PSOT03-LF-T7	03	SOT-23	3000	Tape and reel
UMW PSOT03C-LF-T7	03C	SOT-23	3000	Tape and reel
UMW PSOT05-LF-T7	05	SOT-23	3000	Tape and reel
UMW PSOT05C-LF-T7	05C	SOT-23	3000	Tape and reel
UMW PSOT08-LF-T7	08	SOT-23	3000	Tape and reel
UMW PSOT08C-LF-T7	08C	SOT-23	3000	Tape and reel
UMW PSOT12-LF-T7	12	SOT-23	3000	Tape and reel
UMW PSOT12C-LF-T7	12C	SOT-23	3000	Tape and reel
UMW PSOT15-LF-T7	15	SOT-23	3000	Tape and reel
UMW PSOT15C-LF-T7	15C	SOT-23	3000	Tape and reel
UMW PSOT24-LF-T7	24	SOT-23	3000	Tape and reel
UMW PSOT24C-LF-T7	24C	SOT-23	3000	Tape and reel
UMW PSOT36-LF-T7	36	SOT-23	3000	Tape and reel
UMW PSOT36C-LF-T7	36C	SOT-23	3000	Tape and reel



12.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.

When applying our products, please do not exceed the maximum rated values, as this may affect the reliability of the entire system. Under certain conditions, any semiconductor product may experience faults or failures. Buyers are responsible for adhering to safety standards and implementing safety measures during system design, prototyping, and manufacturing when using our products to prevent potential failure risks that could lead to personal injury or property damage.

Unless explicitly stated in writing, UMW products are not intended for use in medical, life-saving, or life-sustaining applications, nor for any other applications where product failure could result in personal injury or death. If customers use or sell the product for such applications without explicit authorization, they assume all associated risks.

When reselling, applying, or exporting, please comply with export control laws and regulations of China, the United States, the United Kingdom, the European Union, and other relevant countries, regions, and international organizations.

This document and any actions by UMW do not grant any intellectual property rights, whether express or implied, by estoppel or otherwise. The product names and marks mentioned herein may be trademarks of their respective owners.