

## 7700W, 24V Surface Mount Transient Voltage Suppressor



### FEATURES

- AEC-Q101 qualified
- Bidirectional type
- Low clamping voltage
- Low leakage current
- $T_J = 175\text{ }^\circ\text{C}$  capability suitable for high reliability and automotive requirement
- Meets ISO 7637-2 and ISO 16750-2 surge specifications (Varied by test conditions)
- IEC-61000-4-2 ESD 30kV(Air), 30kV(Contact)
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free

### APPLICATIONS

- Transient Surge Protection

### MECHANICAL DATA

- Case: DO-218AB
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Weight: 2.66g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$V_{WM}$	24	V
$V_{BR}$	29.5	V
$P_{PPM}$	7700	W
$T_{J\text{ MAX}}$	175	$^\circ\text{C}$
Package	DO-218AB	



DO-218AB



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Non-repetitive peak impulse power dissipation with 10/1000 $\mu\text{s}$ waveform <sup>(1)</sup>	$P_{PPM}$	7700	W
Junction temperature	$T_J$	-55 to +175	$^\circ\text{C}$
Storage temperature	$T_{STG}$	-55 to +175	$^\circ\text{C}$

**Notes:**

1. Non-repetitive current pulse per Fig.3

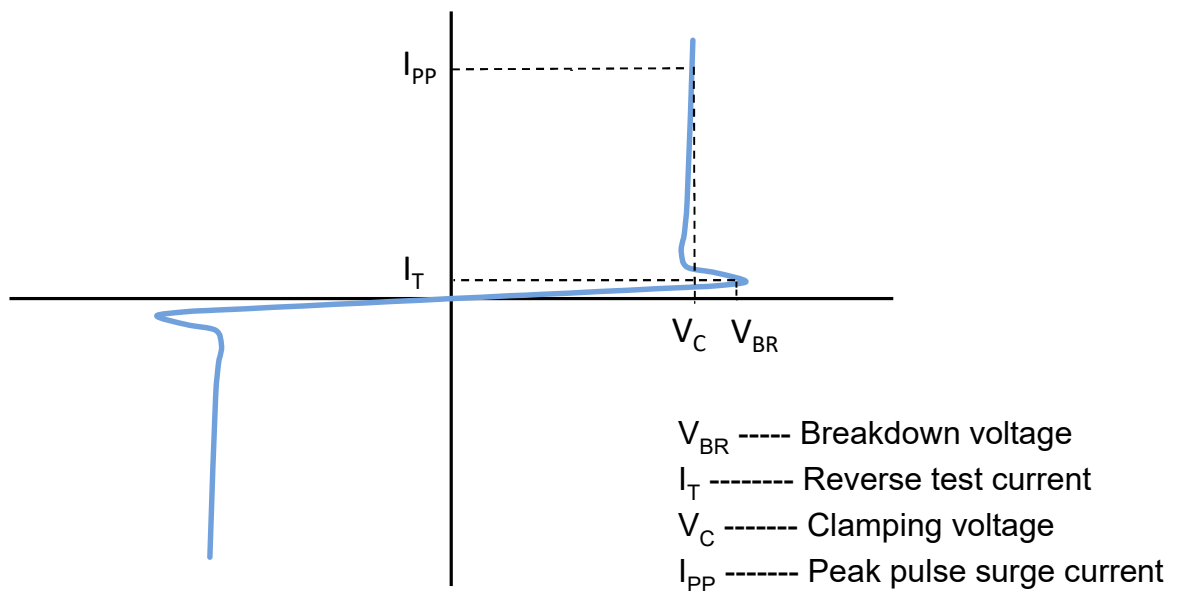
<b>ELECTRICAL SPECIFICATIONS</b> (T <sub>A</sub> = 25°C unless otherwise noted)										
Part number	Device marking	Breakdown voltage V <sub>BR</sub> at I <sub>T</sub> (V) (Note 1)		Test current I <sub>T</sub> (mA)	Working stand-off voltage V <sub>WM</sub> (V)	Maximum blocking leakage current I <sub>R</sub> at V <sub>WM</sub> (μA) (Note 1)	Maximum blocking leakage current I <sub>R</sub> at V <sub>WM</sub> T <sub>J</sub> = 175°C (μA) (Note 1)	Maximum peak impulse current I <sub>PPM</sub> (A) t <sub>p</sub> = 10/1000 (μs)	Typical clamping voltage V <sub>C</sub> at I <sub>PPM</sub> (V)	Typical temp. coefficient of V <sub>BR</sub> αT (%/°C) (Note 2)
		Min	Max							
LTD7S24CAH	LTD7S24	26.7	29.5	5	24	1	150	300	24	0.081

**Notes:**

1. Pulse test with PW = 30ms
2. To calculate V<sub>BR</sub> vs. junction temperature, use the following formula:  
V<sub>BR</sub> at T<sub>J</sub> = V<sub>BR</sub> at 25 °C x (1 + αT x (T<sub>J</sub> - 25))

<b>ORDERING INFORMATION</b>		
ORDERING CODE	PACKAGE	PACKING
LTD7S24CAH	DO-218AB	750 / Tape & Reel

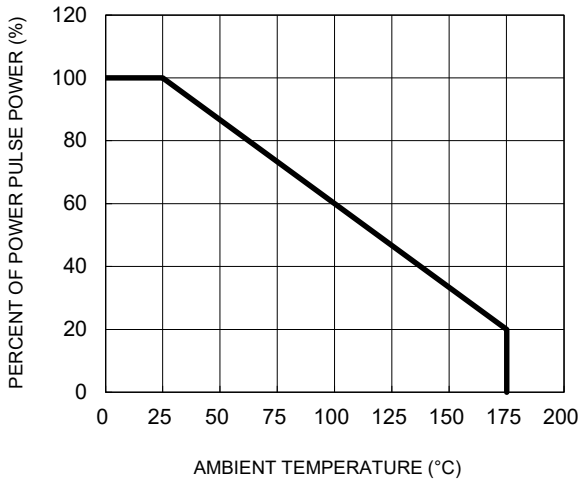
**I - V CURVE CHARACTERISTICS**



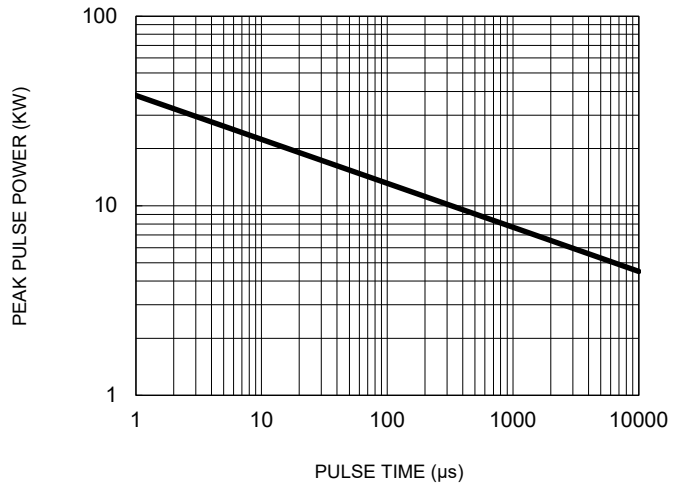
**CHARACTERISTICS CURVES**

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

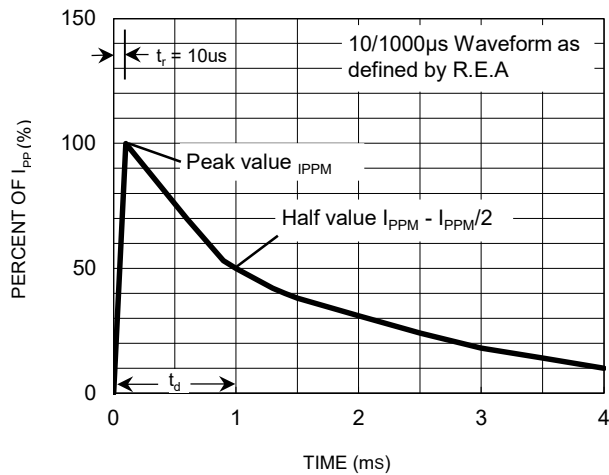
**Fig.1 Peak Pulse Power Derating Curve**



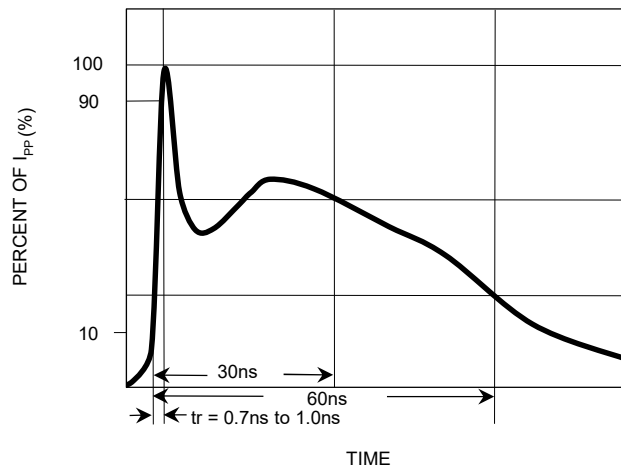
**Fig.2 Non-Repetitive Peak Pulse Power vs. Pulse Time**



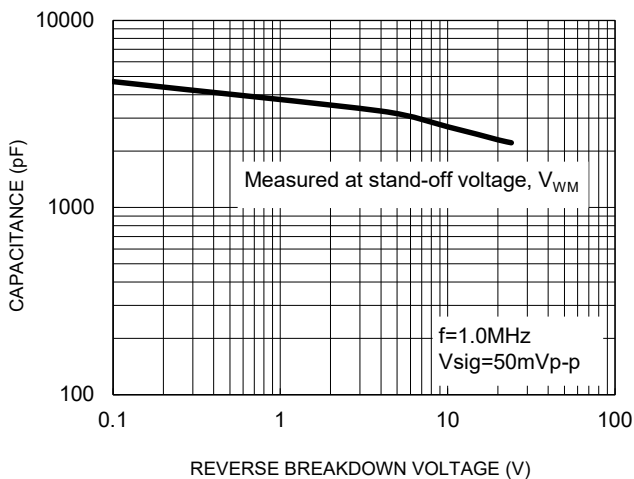
**Fig.3 10/1000μs pulse waveform**



**Fig.4 ESD pulse waveform**

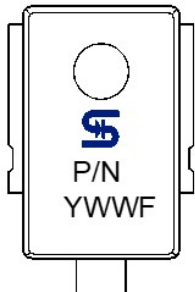
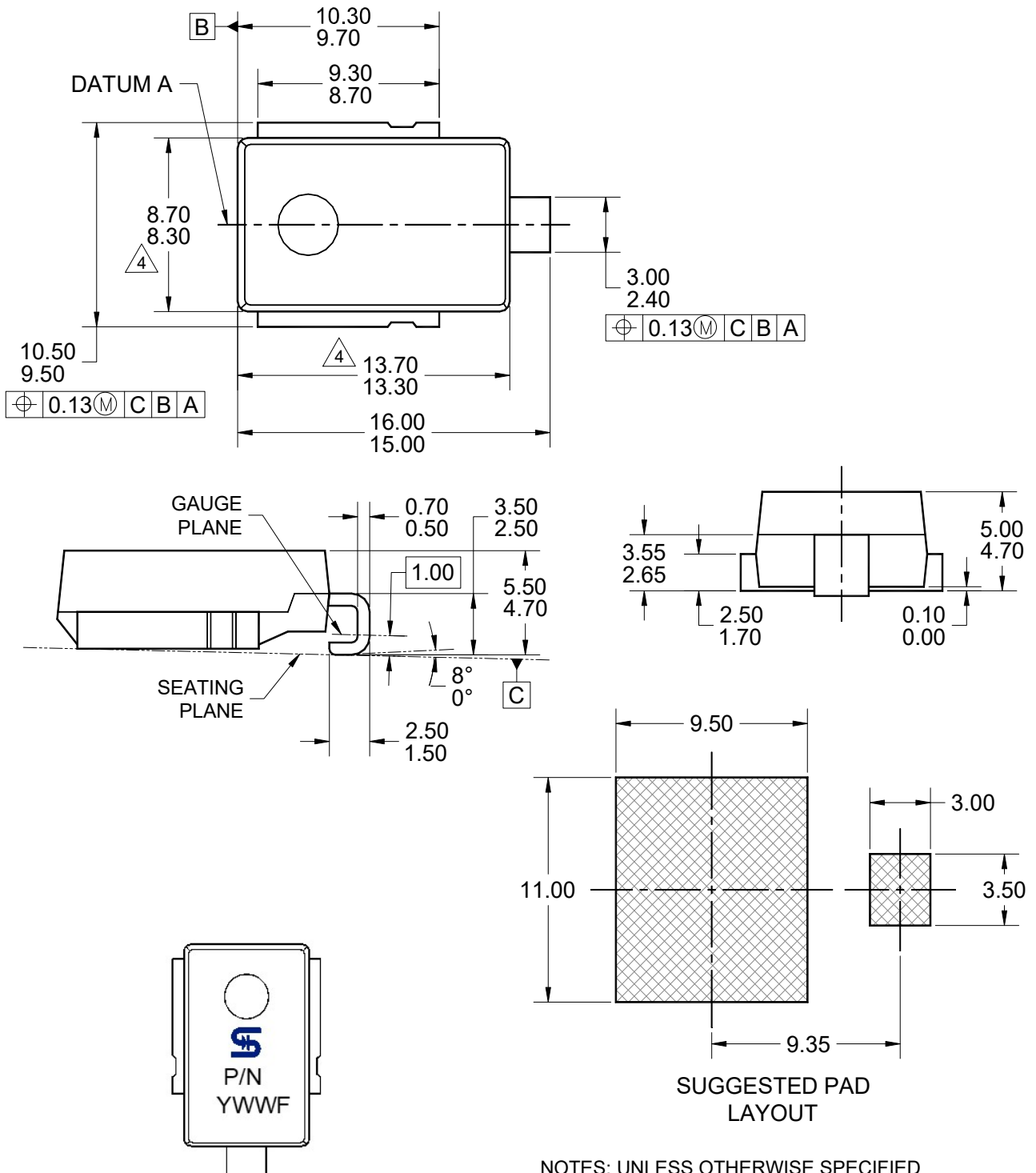


**Fig.5 Typical Junction Capacitance**



**PACKAGE OUTLINE DIMENSIONS**

**DO-218AB**



**MARKING DIAGRAM**

P/N = Device marking  
 YWW = Date code  
 F = Factory code

**NOTES: UNLESS OTHERWISE SPECIFIED**

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. PACKAGE OUTLINE REFERENCE: JEDEC DO-218, VARIATION AB, ISSUE C.
4. MOLDED PLASTIC BODY DIMENSIONS DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.
5. DWG NO. REF: HQ2SD07-DO-218AB-080 REV A.

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