

## TVS Diode – AMPB-H Series

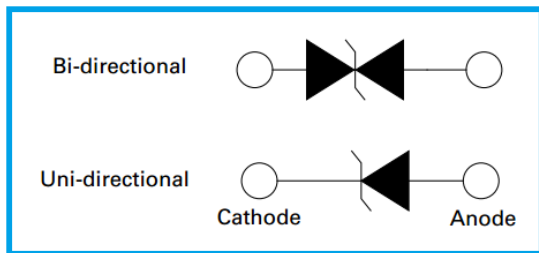
### Features

- Working voltage: 16 to 43V
- Glass passivated chip
- Excellent voltage clamping capability
- Automotive grade AEC-Q101 qualified
- Meets ISO7637-2 5a surge specification
- 6600W peak pulse power capability on 10/1000  $\mu$ s waveform
- Low leakage current
- Very fast response time



### Applications

- I/O interface,  $V_{CC}$  bus
- Automotive
- Industrial and consumer electronic applications
- Relay and electromagnetic valve surge absorption



### Mechanical and Physical Data

- Case: DO-218AB molded plastic
- Epoxy: UL 94V-0 rate flame retardant
- Polarity: Heat-sink is anode

### Maximum Ratings and Thermal Characteristics

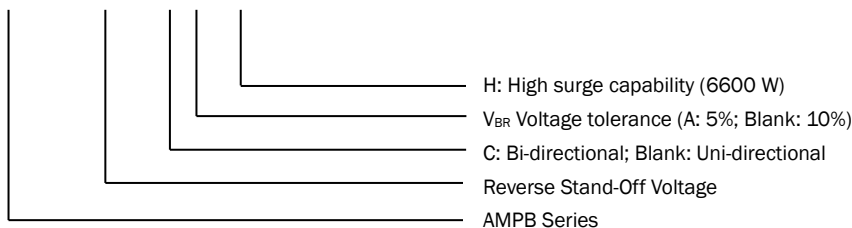
Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation on 10/1000 $\mu$ s waveform (Note 1, Fig.1).	$P_{PPM}$	Min 6600	Watt
Peak Pulse Current of 10/1000 $\mu$ s waveform (Note 1, Fig.3).	$I_{PPM}$	See Table	Amp
Power Dissipation on Infinite Heatsink at $T_L = 25^\circ\text{C}$	$P_D$	6.0	Watt
Peak Forward Surge Current, 8.3 ms Single Half Sine Wave Superimposed on Rated Load (Note 2, Fig.6).	$I_{FSM}$	600	Amp
Operating Junction and Storage Temperature Range.	$T_J, T_{STG}$	-55~175	$^\circ\text{C}$

Note:

1. Non-repetitive current pulse, per Fig.3 and derated above  $T_A = 25^\circ\text{C}$  per Fig.2.
2. 8.3ms single half sine wave, or equivalent square wave, Duty cycle = 4 pulses per minutes maximum.

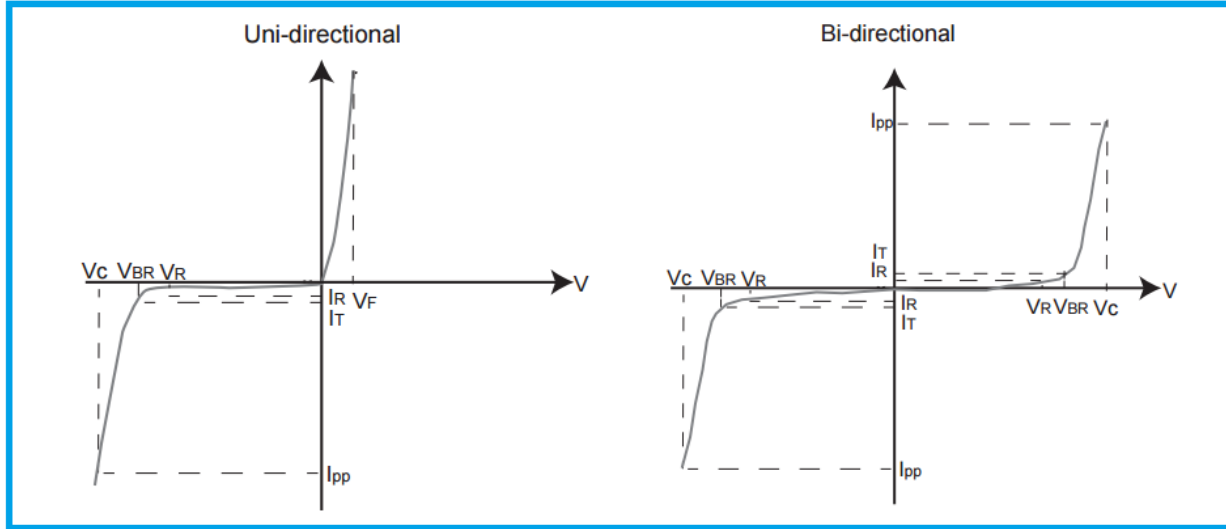
### Part Number Code

AMPB  C A - H



## TVS Diode – AMPB-H Series

### I-V Curve Characteristics



- P<sub>PPM</sub> Peak Pulse Power Dissipation – Maximum power dissipation
- V<sub>R</sub> Stand-off Voltage – Maximum voltage that can be applied to the TVS without operation
- V<sub>BR</sub> Breakdown Voltage – Maximum voltage that flows through the TVS at a specified test current (I<sub>T</sub>)
- V<sub>C</sub> Clamping Voltage – Peak voltage measured across the TVS at a specified I<sub>PPM</sub> (Peak Impulse Current)
- I<sub>R</sub> Reverse Leakage Current – Current measured at V<sub>R</sub>
- V<sub>F</sub> Forward Voltage Drop for Uni-directional

### Electrical Characteristics

Part Number		Reverse Stand Off Voltage V <sub>R</sub> (V)	Breakdown Voltage V <sub>BR</sub> (V) @ I <sub>T</sub>		Test Current I <sub>T</sub> (mA)	Maximum Clamping Voltage V <sub>C</sub> (V) @ I <sub>PP</sub>	Maximum Peak Pulse Current I <sub>PP</sub> (A)	Maximum Reverse Leakage I <sub>R</sub> (μA) @ V <sub>R</sub>	Maximum I <sub>R</sub> (μA) @ V <sub>R</sub> T <sub>J</sub> = 175°C
Uni	Bi		Min.	Max.					
AMPB16A-H	AMPB16CA-H	16.0	17.8	19.7	5	26.0	254	10	150
AMPB17A-H	AMPB17CA-H	17.0	18.9	20.9	5	27.6	239	10	150
AMPB18A-H	AMPB18CA-H	18.0	20.0	22.1	5	29.2	226	10	150
AMPB20A-H	AMPB20CA-H	20.0	22.2	24.5	5	32.4	204	10	150
AMPB22A-H	AMPB22CA-H	22.0	24.4	26.9	5	35.5	186	10	150
AMPB24A-H	AMPB24CA-H	24.0	26.7	29.5	5	38.9	170	10	150
AMPB26A-H	AMPB26CA-H	26.0	28.9	31.9	5	42.1	157	10	150
AMPB28A-H	AMPB28CA-H	28.0	31.1	34.4	5	45.4	145	10	150
AMPB30A-H	AMPB30CA-H	30.0	33.3	36.8	5	48.4	136	10	150
AMPB33A-H	AMPB33CA-H	33.0	36.7	40.6	5	53.3	124	10	150
AMPB36A-H	AMPB36CA-H	36.0	40.0	44.2	5	58.1	114	10	150
AMPB40A-H	AMPB40CA-H	40.0	44.4	49.1	5	64.5	102	10	150
AMPB43A-H	AMPB43CA-H	43.0	47.8	52.8	5	69.4	95.1	10	150

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### Ratings and Characteristic Curves

Fig 1 - Pulse Derating Curve

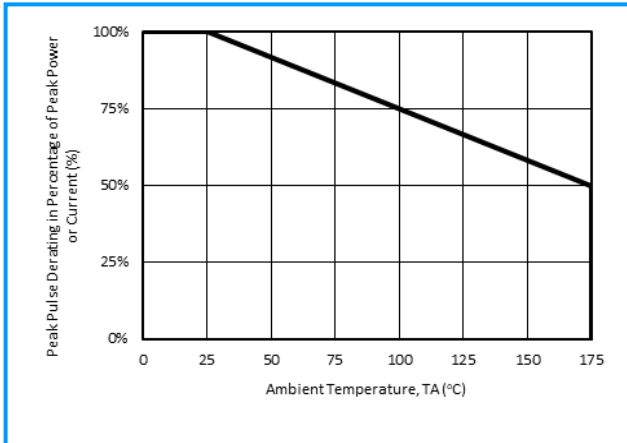


Fig 2 - Pulse Waveform

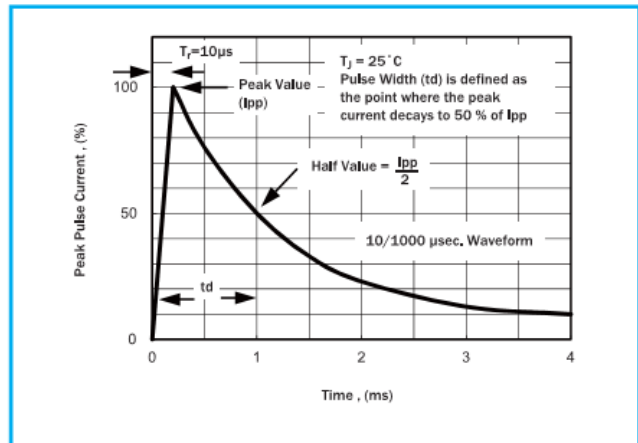
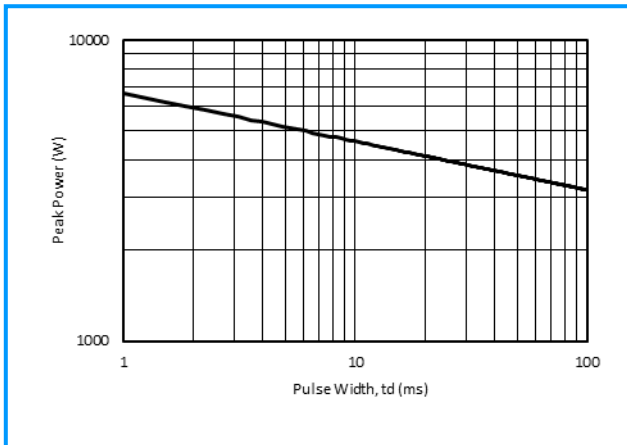


Fig 3 - Peak Pulse Power Rating Curve

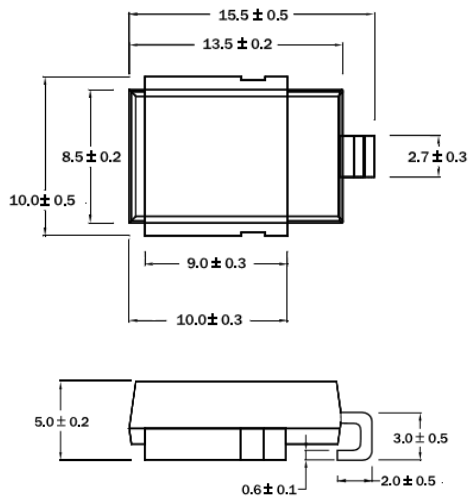


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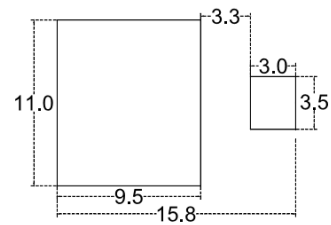
### Marking Definitions



### Physical Dimensions (Millimeters)

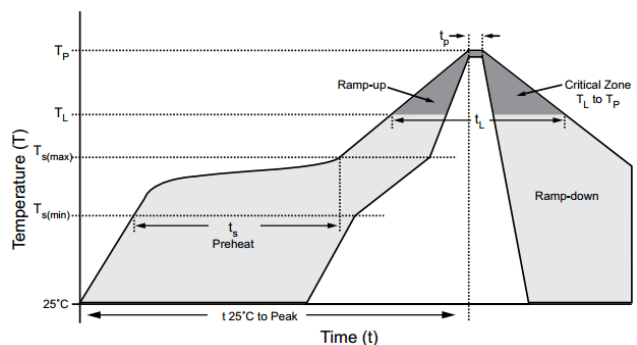


Recommended Mounting Pad Layout



### Lead Free Reflow Soldering Recommendations

Preheat	
- Temperature Min (T <sub>smin</sub> )	150°C
- Temperature Max (T <sub>smax</sub> )	200°C
- Time (T <sub>smin</sub> to T <sub>smax</sub> )	60-180 seconds
- Average Ramp-Up Rate	1~3°C/second
Peak Temperature	260°C max.
Time within 5°C of actual Peak Temperature (t <sub>p</sub> )	30 seconds max.
Ramp-Down Rate	6 °C /second max.



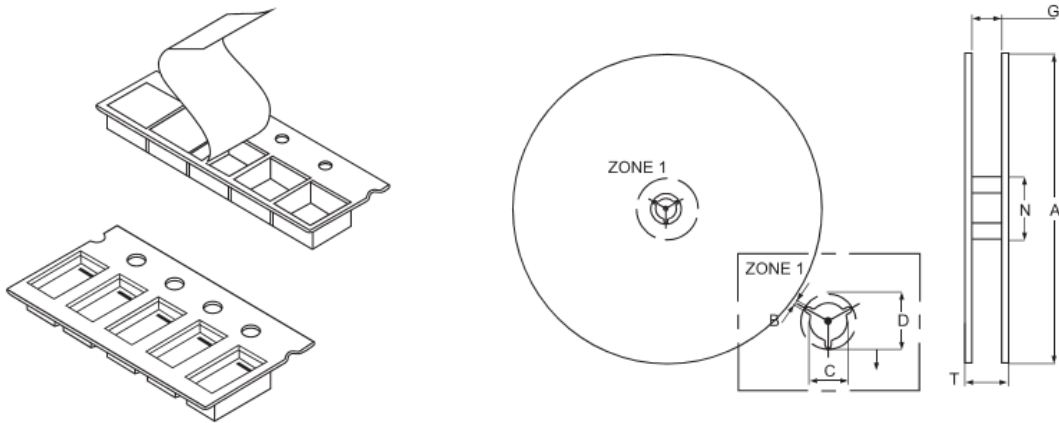
**Note:** If the soldering temperatures exceed the recommended profile, devices may not meet the performance requirements.

## TVS Diode – AMPB-H Series

### Packaging Information

Part Number	Component Package	Quantity	Packaging Option	Packaging Specification
AMPB-H Series	DO-218AB	750	Tape & Reel - 24mm tape/13" reel	EIA STD RS-481

### Tape and Reel Specifications



Symbol	A	B (Min.)	C	D (Min.)	N (Min.)	G (Max.)	T (Max.)
Spec	330±2.0	1.5	13.0±0.2	20.2	50.0	26.4	30.4

\*Dimension in mm