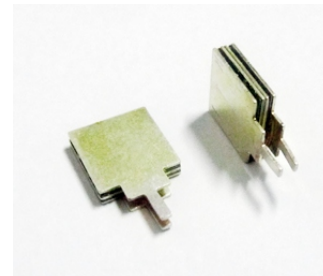


## Transient Voltage Suppressors (TVS) Data Sheet

### Features

- Lead terminals
- High current transient suppressor
- Excellent clamping capability.
- Glass passivated junction.
- Bi-directional.
- Low slope resistance.
- Hazardous Substances Free.
- RoHS compliant
- High Temperature soldering: 265°C/10 seconds at terminals.



### Maximum Ratings and thermal characteristics

Rating	Symbol	Value		Units
Current Rating	I <sub>PP</sub>	HFA-S	3	KA
		HFB-S	6	
		HFC-S	10	
Operating junction and Storage Temperature Range.	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150		°C

### Dimensions

Symbol	Dimension	
	Inches	Millimeters
A	0.370±0.016	9.40±0.40
B	0.370±0.016	9.40±0.40
C	0.457±0.016	11.60±0.40
D	0.605±0.016	15.37±0.40
E	0.190±0.012	4.83±0.30
F	0.049±0.008	1.25±0.20
G	0.787max	20.00max
t	0.015±0.002	0.38±0.05

Note: Drawing here are for illustration only, actual assembly depends on specific part number.

**Electrical Characteristics**

Part Number	Reverse Stand-Off Voltage		Breakdown Voltage	Test Current	Current Rating	Maximum Energy	Maximum Clamping Voltage	Reverse Leakage
	V <sub>AC</sub> (V)	V <sub>DC</sub> (V)	V <sub>BR</sub> (V) MIN.@I <sub>T</sub>	I <sub>T</sub> (mA)	Rated I <sub>PP</sub> measured with 8/20μs pulse	10/1000μs	V <sub>C</sub> (V) @I <sub>PP</sub>	I <sub>R</sub> (μA) @V <sub>DC</sub>
HFA-012S	8.5	12.8	14	1	3KA	500	80	20
HFA-015S	11	15	17	1	3KA	650	85	20
HFA-020S	14	20	22	1	3KA	800	90	20
HFA-025S	17	25	28	1	3KA	950	95	20
HFA-030S	21	30	33	1	3KA	1200	100	20
HFA-042S	30	42	47	1	3KA	1700	105	20
HFA-058S	40	58	64	1	3KA	2450	110	20
HFA-066S	45	66	70	1	3KA	2600	120	20
HFA-076S	54	76	85	1	3KA	2800	140	20
HFA-100S	72	100	110	1	3KA	4250	165	20
HFA-133S	100	133	147	1	3KA	5300	220	20
HFA-170S	130	170	180	1	3KA	7000	260	20
HFA-190S	145	190	200	1	3KA	8400	290	20
HFA-200S	150	200	222	1	3KA	8600	330	20
HFA-240S	180	240	250	1	3KA	9100	340	20
HFA-275S	210	275	300	1	3KA	9500	435	20
HFA-300S	230	300	330	1	3KA	12750	470	20
HFA-380S	275	380	401	1	3KA	15000	520	20
HFA-430S	310	430	440	1	3KA	18000	625	20
HFA-460S	330	460	500	1	3KA	18500	770	20
HFA-500S	385	500	558	1	3KA	19500	868	20
HFB-012S	8.5	12.8	14	1	6KA	1000	80	20
HFB-015S	11	15	17	1	6KA	1300	85	20
HFB-020S	14	20	22	1	6KA	1600	90	20
HFB-025S	17	25	28	1	6KA	1900	95	20
HFB-030S	21	30	33	1	6KA	2400	100	20

Notes: 1. T<sub>A</sub>=25°C unless otherwise specified

2. Using 8/20 μs wave shape pulses as defined in IEC61000-4-5

**Electrical Characteristics**

Part Number	Reverse Stand-Off Voltage		Breakdown Voltage	Test Current	Current Rating	Maximum Energy	Maximum Clamping Voltage	Reverse Leakage
	V <sub>AC</sub> (V)	V <sub>DC</sub> (V)	V <sub>BR</sub> (V) MIN.@I <sub>T</sub>	I <sub>T</sub> (mA)	Rated I <sub>PP</sub> measured with 8/20μs pulse	10/1000μs	V <sub>C</sub> (V) @I <sub>PP</sub>	I <sub>R</sub> (μA) @V <sub>DC</sub>
HFB-042S	30	42	47	1	6KA	3400	105	20
HFB-058S	40	58	64	1	6KA	4900	110	20
HFB-066S	45	66	70	1	6KA	5200	120	20
HFB-076S	54	76	85	1	6KA	5600	140	20
HFB-100S	72	100	110	1	6KA	8500	165	20
HFB-133S	100	133	147	1	6KA	10600	220	20
HFB-170S	130	170	180	1	6KA	14000	260	20
HFB-190S	145	190	200	1	6KA	16800	290	20
HFB-200S	150	200	222	1	6KA	17200	330	20
HFB-240S	180	240	250	1	6KA	18000	340	20
HFB-275S	210	275	300	1	6KA	19000	435	20
HFB-300S	230	300	330	1	6KA	25500	470	20
HFB-380S	275	380	401	1	6KA	30000	520	20
HFC-012S	8.5	12.8	14	1	10KA	1665	80	20
HFC-015S	11	15	17	1	10KA	2164.5	85	20
HFC-020S	14	20	22	1	10KA	2664	90	20
HFC-025S	17	25	28	1	10KA	3163.5	95	20
HFC-030S	21	30	33	1	10KA	3996	100	20
HFC-042S	30	42	47	1	10KA	5661	105	20
HFC-058S	40	58	64	1	10KA	8158.5	110	20
HFC-066S	45	66	70	1	10KA	8658	120	20
HFC-076S	54	76	85	1	10KA	9324	140	20
HFC-100S	72	100	110	1	10KA	14152.5	165	20
HFC-133S	100	133	147	1	10KA	17649	220	20
HFC-170S	130	170	180	1	10KA	23310	260	20
HFC-190S	145	190	200	1	10KA	27972	290	20

Notes: 1. T<sub>A</sub>=25°C unless otherwise specified

2. Using 8/20 μs wave shape pulses as defined in IEC61000-4-5

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

Figure 1. Power Derating Curve

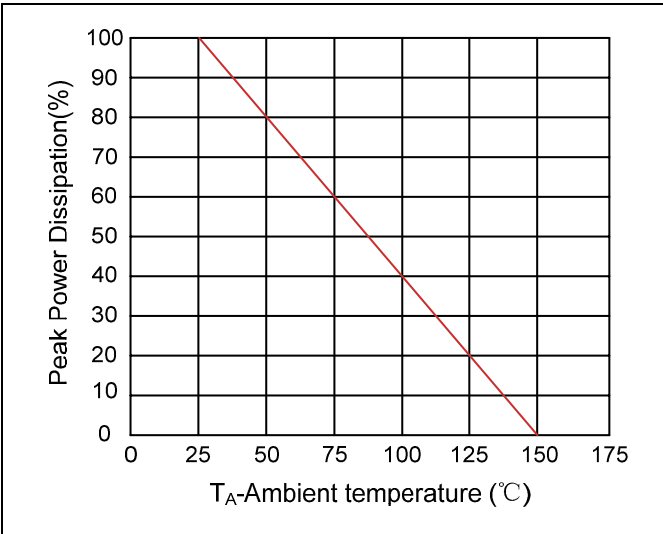


Figure 2. Pulse Waveform

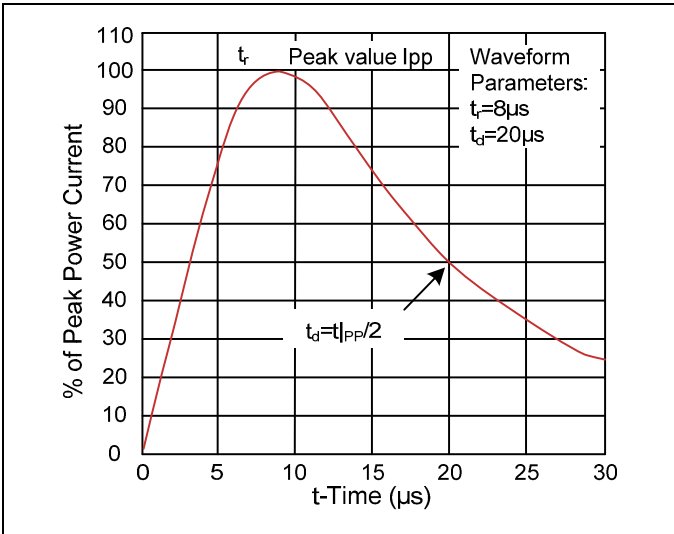
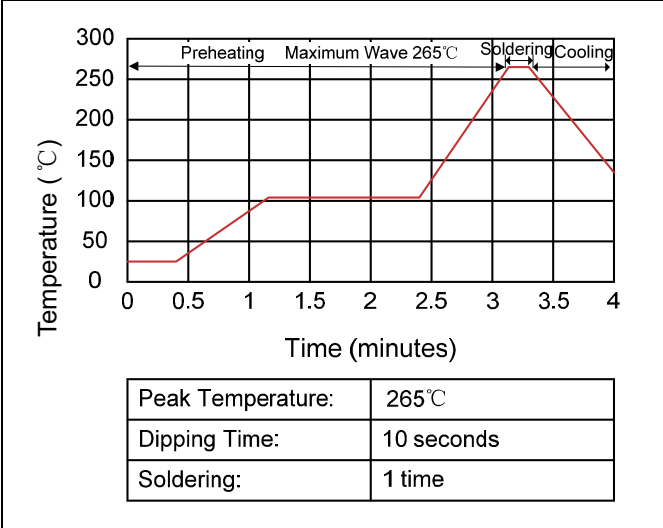
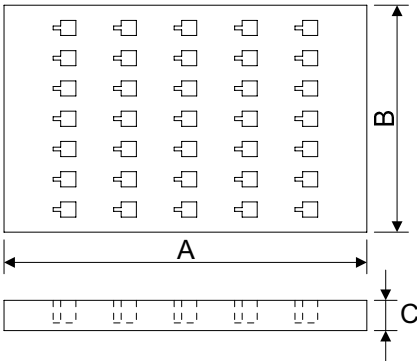
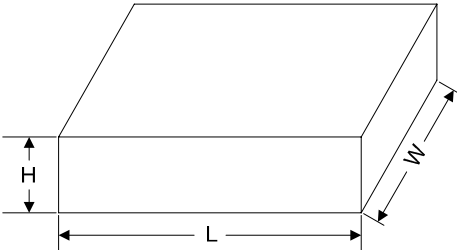


Figure 3. Wave Soldering



Packaging

Hole foam packing	Symbol	Dimension (mm)
	A	238.0±1.0
	B	150.0±1.0
	C	20.0±1.0
	Quantity: 35PCS	
		L
W		65.0
H		165.0
Quantity: 105PCS		