

DATA SHEET

TRANSIENT VOLTAGE SUPPRESSORS

AC/DC POWER SUPPLY

HF-S series

RoHS compliant & Halogen free



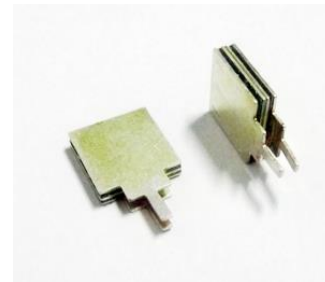
Product specification— July 05, 2023 V.1



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 Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Rating	Symbol	Value		Units
Current Rating	I_{PP}	HFA-S	3	KA
		HFB-S	6	
		HFC-S	10	
Operating junction and Storage Temperature Range.	T_J, T_{STG}	-40 to +125		°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 (T_A=25°C)

Part Number	Reverse Stand-Off Voltage		Breakdown Voltage	Test Current	Current Rating	Maximum Clamping Voltage	Reverse Leakage
	V _{AC} (V)	V _{DC} (V)	V _{BR} (V) MIN.@I _T	I _T (mA)	Rated I _{PP} measured with 8/20μs	V _C (V) @I _{PP}	I _R (μA) @V _{DC}
HFA-012S	8.5	12.8	14	1	3KA	80	20
HFA-015S	11	15	17	1	3KA	85	20
HFA-020S	14	20	22	1	3KA	90	20
HFA-025S	17	25	28	1	3KA	95	20
HFA-030S	21	30	33	1	3KA	100	20
HFA-042S	30	42	47	1	3KA	105	20
HFA-058S	40	58	64	1	3KA	110	20
HFA-066S	45	66	70	1	3KA	120	20
HFA-076S	54	76	85	1	3KA	140	20
HFA-100S	72	100	110	1	3KA	165	20
HFA-133S	100	133	147	1	3KA	220	20
HFA-170S	130	170	180	1	3KA	260	20
HFA-190S	145	190	200	1	3KA	290	20
HFA-200S	150	200	222	1	3KA	330	20
HFA-240S	180	240	250	1	3KA	340	20
HFA-275S	210	275	300	1	3KA	435	20
HFA-300S	230	300	330	1	3KA	470	20
HFA-380S	275	380	401	1	3KA	520	20
HFA-430S	310	430	440	1	3KA	625	20
HFA-460S	330	460	500	1	3KA	770	20
HFA-500S	385	500	558	1	3KA	868	20
HFB-012S	8.5	12.8	14	1	6KA	80	20
HFB-015S	11	15	17	1	6KA	85	20
HFB-020S	14	20	22	1	6KA	90	20
HFB-025S	17	25	28	1	6KA	95	20
HFB-030S	21	30	33	1	6KA	100	20
HFB-042S	30	42	47	1	6KA	105	20
HFB-058S	40	58	64	1	6KA	110	20
HFB-066S	45	66	70	1	6KA	120	20
HFB-076S	54	76	85	1	6KA	140	20
HFB-100S	72	100	110	1	6KA	165	20
HFB-133S	100	133	147	1	6KA	220	20
HFB-170S	130	170	180	1	6KA	260	20

Part Number	Reverse Stand-Off Voltage		Breakdown Voltage	Test Current	Current Rating	Maximum Clamping Voltage	Reverse Leakage
	V _{AC} (V)	V _{DC} (V)	V _{BR} (V) MIN.@I _T	I _T (mA)	Rated I _{PP} measured with 8/20μs	V _C (V) @I _{PP}	I _R (μA) @V _{DC}
HFB-190S	145	190	200	1	6KA	290	20
HFB-200S	150	200	222	1	6KA	330	20
HFB-240S	180	240	250	1	6KA	340	20
HFB-275S	210	275	300	1	6KA	435	20
HFB-300S	230	300	330	1	6KA	470	20
HFB-380S	275	380	401	1	6KA	520	20
HFC-012S	8.5	12.8	14	1	10KA	80	20
HFC-015S	11	15	17	1	10KA	85	20
HFC-020S	14	20	22	1	10KA	90	20
HFC-025S	17	25	28	1	10KA	95	20
HFC-030S	21	30	33	1	10KA	100	20
HFC-042S	30	42	47	1	10KA	105	20
HFC-058S	40	58	64	1	10KA	110	20
HFC-066S	45	66	70	1	10KA	120	20
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HFC-100S	72	100	110	1	10KA	165	20
HFC-133S	100	133	147	1	10KA	220	20
HFC-170S	130	170	180	1	10KA	260	20
HFC-190S	145	190	200	1	10KA	290	20

Notes: 1. TA=25°C unless otherwise specified

2. Using 8/20μs 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

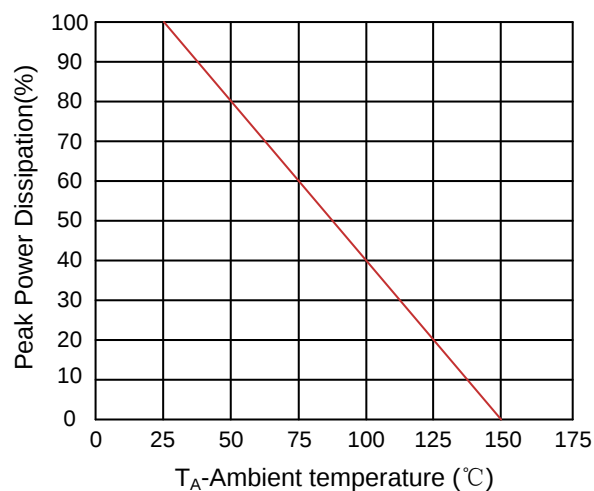
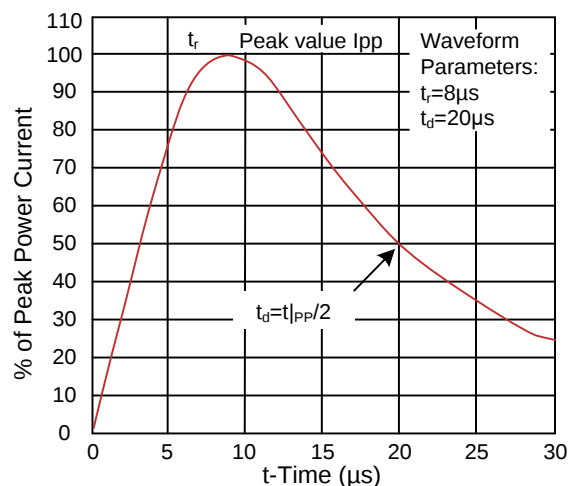
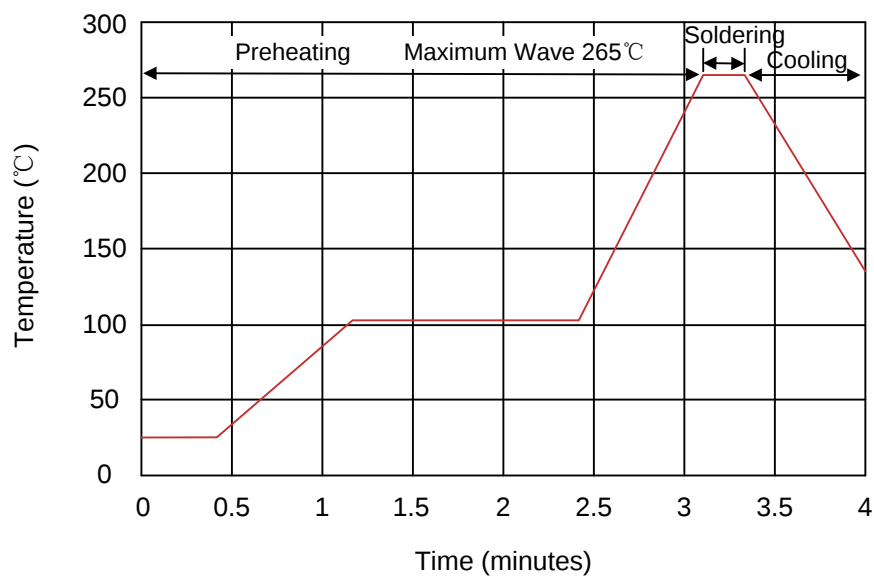


Figure 2. Pulse Waveform



Recommended Soldering Conditions

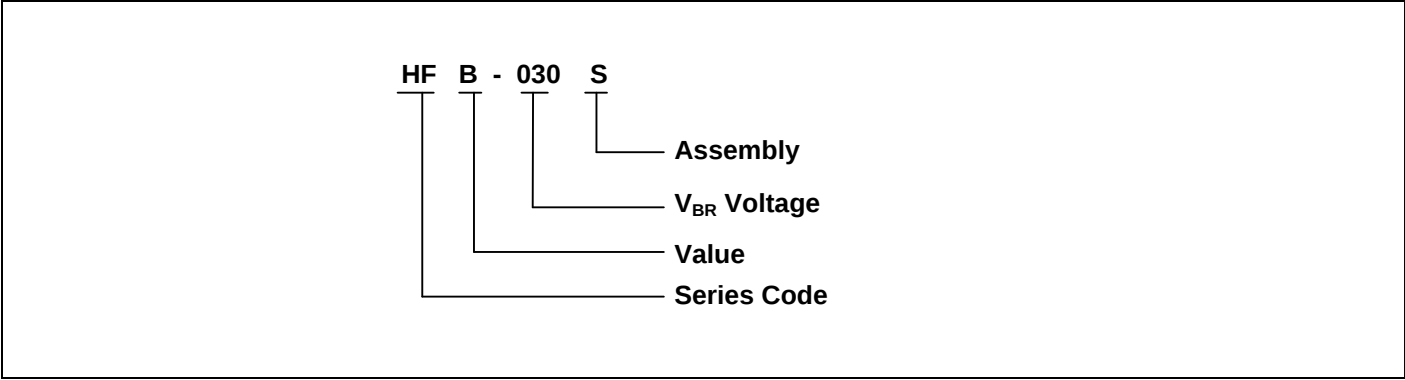
Wave Soldering



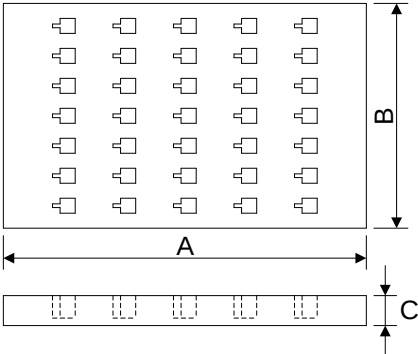
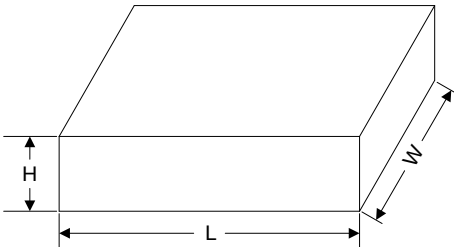
Recommended Conditions

Item	Conditions
Peak Temperature	265°C
Dipping Time	10 seconds
Soldering	1 time

Part Number Code



Packaging

Hole foam packing 	Symbol	Dimension (mm)
	A	238.0±1.0
	B	150.0±1.0
	C	20.0±1.0
	Quantity: 35PCS	
Inner Box 	L	250.0
	W	65.0
	H	165.0
	Quantity: 105PCS	

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