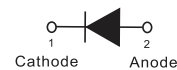
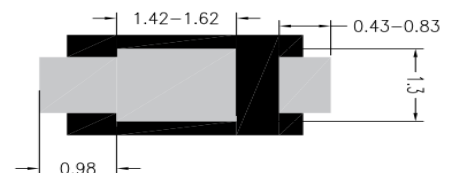
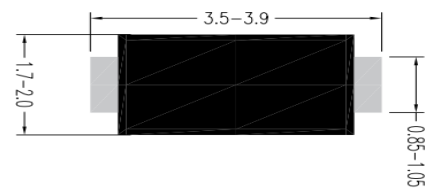
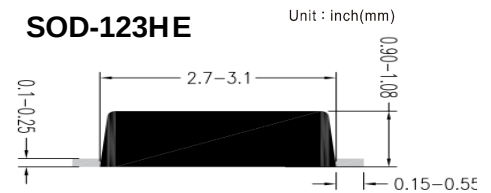


Surface Mount Transient Voltage Suppressor Diode

Features

- Compatible with industrial standard package SOD-123HE
- For surface mounted applications in order to optimize board space
- Low leakage
- Uni
- Glass passivated junction
- Low inductance
- Excellent clamping capability
- 200W Peak power capability at 10×1000μs waveform Repetition rate (duty cycle):0.01%
- Fast response time: typically less than 1.0ps from 0 Volts to VBR min
- High Temperature soldering: 260°C/40 seconds at terminals
- Typical maximum temperature coefficient $\Delta V_{BR} = 0.1\% V_{BR}@25^{\circ}\text{C} \times \Delta T$
- Plastic package has Underwriters Laboratory Flammability 94V-0
- Matte tin lead-free Plated
- Halogen free and RoHS compliant
- Typical failure mode is short from over-specified voltage or current
- Whisker test is conducted based on JEDEC JESD201A per its table 4a and 4c
- IEC-61000-4-2 ESD 15kV(Air), 8kV (Contact)
- ESD protection of data lines in accordance with IEC 61000-4-2 (IEC801-2)
- EFT protection of data lines in accordance with IEC 61000-4-4 (IEC801-4)

SOD-123HE


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

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation with a 10/1000μs waveform (Fig.1)(Note 1), (Note 2)	P_{PPM}	200	Watts
Peak Pulse Power Dissipation with a 8/20μs waveform (Fig.1)(Note 1), (Note 2)	P_{PPM}	1000	Watts
Peak Pulse Current with a 10/1000μs waveform.(Note1, Fig.3)	I_{PP}	See Next Table	Amps
Power Dissipation on Infinite Heat Sink at $T_L=75^{\circ}\text{C}$	$P_{M(AV)}$	0.4	Watt
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 3)	I_{FSM}	20	Amps
Maximum Instantaneous Forward Voltage at 25A for Unidirectional Only (Note 4)	V_F	3.5	Voltage
Operating junction and Storage Temperature Range.	T_J, T_{STG}	-55 to +150	$^{\circ}\text{C}$

Notes:

1. Non-repetitive current pulse, per Fig. 3 and derated above $T_A = 25^{\circ}\text{C}$ per Fig. 2.
2. Mounted on 5.0mm x 5.0mm (0.03mm thick) Copper Pads to each terminal.
3. 8.3ms single half sine-wave, or equivalent square wave, Duty cycle = 4 pulses per minutes maximum.
4. $V_F < 3.5\text{V}$ for $V_{BR} < 200\text{V}$ and $V_F \leq 6.5\text{V}$ for $V_{BR} > 201\text{V}$.

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

Figure 1 - Peak Pulse Power Rating Curve

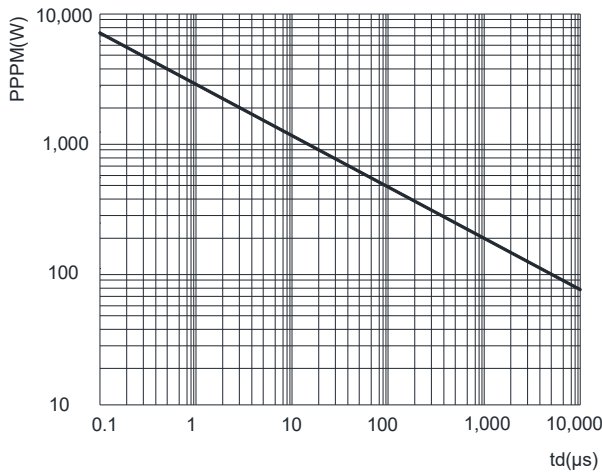


Figure 2 - Pulse Derating Curve

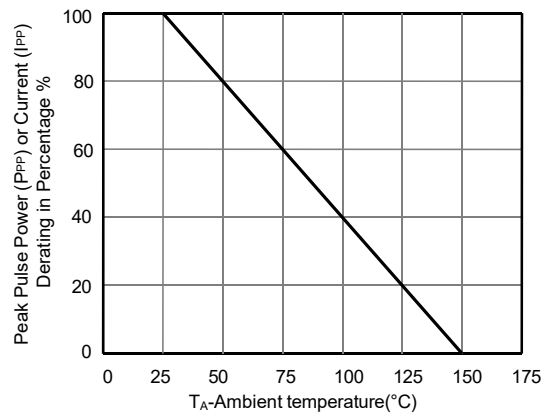


Figure 3 - Pulse Waveform

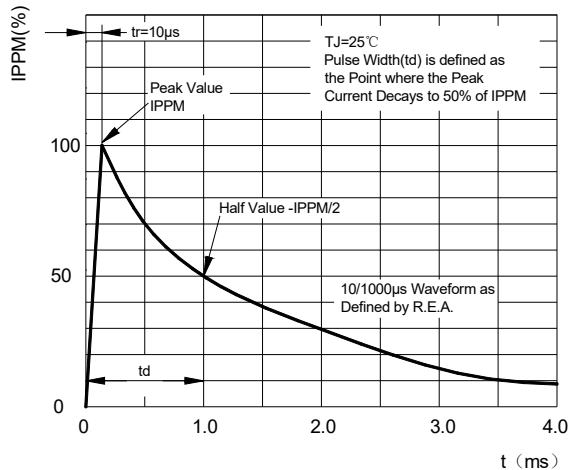


Figure 4 - Typical Junction Capacitance

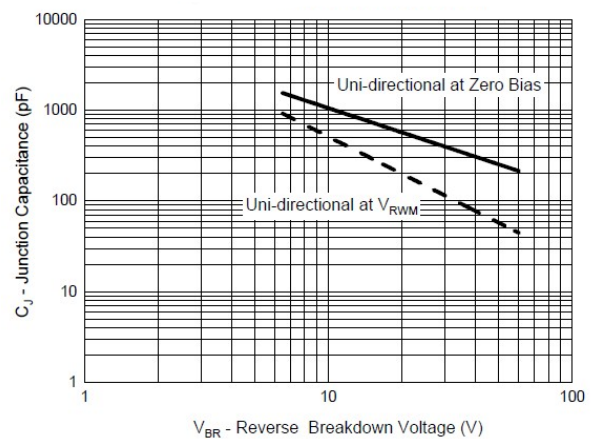


Figure 5 - Steady State Power Derating Curve

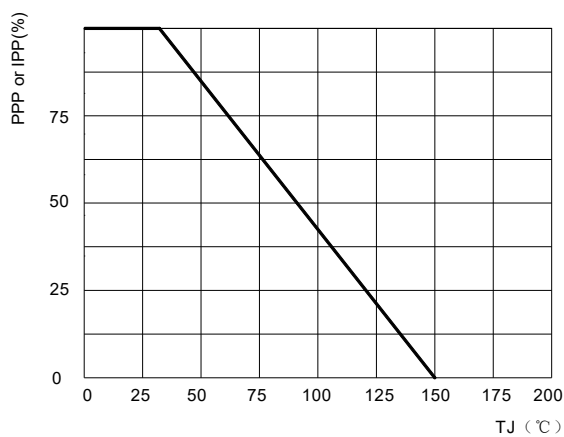
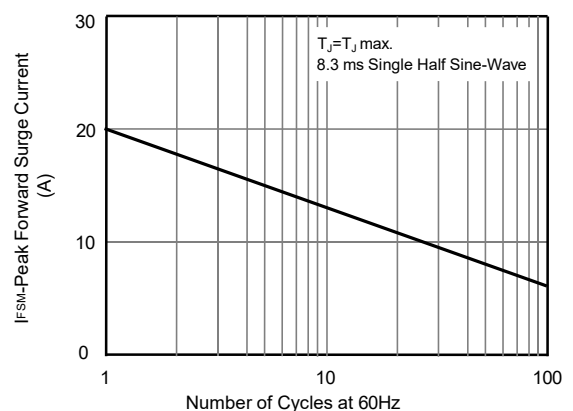


Figure 6 - Maximum Non-Repetitive Surge Current



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

Part Number	Marking	Reverse Stand-Off Voltage V_{RWM} (V)	Breakdown Voltage V_{BR} (V) @ I_T		Test Current I_T (mA)	Maximum Clamping Voltage $V_C@I_{PP}$ (V)	Maximum Peak Pulse Current I_{PP} (A)	Maximum Reverse Leakage I_R @ V_{RWM} (μA)
Uni	Uni		Min	Max				
SMFE5.0A	5.0A	5.0	6.40	7.00	10	9.2	21.74	400
SMFE6.0A	6.0A	6.0	6.67	7.37	10	10.3	19.42	400
SMFE6.5A	6.5A	6.5	7.22	7.98	10	11.2	17.86	250
SMFE7.0A	7.0A	7.0	7.78	8.60	10	12.0	16.67	100
SMFE7.5A	7.5A	7.5	8.33	9.21	1	12.9	15.50	50
SMFE8.0A	8.0A	8.0	8.89	9.83	1	13.6	14.71	25
SMFE8.5A	8.5A	8.5	9.44	10.40	1	14.4	13.89	10
SMFE9.0A	9.0A	9.0	10.00	11.10	1	15.4	12.99	5
SMFE10A	10A	10.0	11.10	12.30	1	17.0	11.76	2.5
SMFE11A	11A	11.0	12.20	13.50	1	18.2	10.99	2.5
SMFE12A	12A	12.0	13.30	14.70	1	19.9	10.05	2.5
SMFE13A	13A	13.0	14.40	15.90	1	21.5	9.30	1
SMFE14A	14A	14.0	15.60	17.20	1	23.2	8.62	1
SMFE15A	15A	15.0	16.70	18.50	1	24.4	8.20	1
SMFE16A	16A	16.0	17.80	19.70	1	26.0	7.69	1
SMFE17A	17A	17.0	18.90	20.90	1	27.6	7.25	1
SMFE18A	18A	18.0	20.00	22.10	1	29.2	6.85	1
SMFE19A	19A	19.0	21.10	23.30	1	30.6	6.54	1
SMFE20A	20A	20.0	22.20	24.50	1	32.4	6.17	1
SMFE22A	22A	22.0	24.40	26.90	1	35.5	5.63	1
SMFE24A	24A	24.0	26.70	29.50	1	38.9	5.14	1
SMFE26A	26A	26.0	28.90	31.90	1	42.1	4.75	1
SMFE28A	28A	28.0	31.10	34.40	1	45.4	4.41	1
SMFE30A	30A	30.0	33.30	36.80	1	48.4	4.13	1
SMFE33A	33A	33.0	36.70	40.60	1	53.3	3.75	1
SMFE36A	36A	36.0	40.00	44.20	1	58.1	3.44	1
SMFE40A	40A	40.0	44.40	49.10	1	64.5	3.10	1
SMFE43A	43A	43.0	47.80	52.80	1	69.4	2.88	1
SMFE45A	45A	45.0	50.00	55.30	1	72.7	2.75	1
SMFE48A	48A	48.0	53.30	58.90	1	77.4	2.58	1
SMFE51A	51A	51.0	56.70	62.70	1	82.4	2.43	1
SMFE54A	54A	54.0	60.00	66.30	1	87.1	2.30	1
SMFE58A	58A	58.0	64.40	71.20	1	93.6	2.14	1

Part Number	Marking	Reverse Stand-Off Voltage V_{RWM} (V)	Breakdown Voltage V_{BR} (V) @ I_T		Test Current I_T (mA)	Maximum Clamping Voltage $V_C @ I_{PP}$ (V)	Maximum Peak Pulse Current I_{PP} (A)	Maximum Reverse Leakage I_R @ V_{RWM} (μA)
Uni	Uni		Min	Max				
SMFE60A	60A	60.0	66.70	73.70	1	96.8	2.07	1
SMFE64A	64A	64.0	71.10	78.60	1	103.0	1.94	1
SMFE70A	70A	70.0	77.80	86.00	1	113.0	1.77	1
SMFE75A	75A	75.0	83.30	92.10	1	121.0	1.65	1
SMFE78A	78A	78.0	86.70	95.80	1	126.0	1.59	1
SMFE80A	80A	80.0	88.80	97.60	1	129.0	1.55	1
SMFE85A	85A	85.0	94.40	104.00	1	137.0	1.46	1
SMFE90A	90A	90.0	100.00	111.00	1	146.0	1.37	1
SMFE100A	100A	100.0	111.00	123.00	1	162.0	1.23	1
SMFE110A	110A	110.0	122.00	135.00	1	177.0	1.13	1
SMFE120A	120A	120.0	133.00	147.00	1	193.0	1.04	1
SMFE130A	130A	130.0	144.00	159.00	1	209.0	0.96	1
SMFE140A	140A	140.0	155.00	171.00	1	224.0	0.89	1
SMFE150A	150A	150.0	167.00	185.00	1	243.0	0.82	1
SMFE160A	160A	160.0	178.00	197.00	1	259.0	0.77	1
SMFE170A	170A	170.0	189.00	209.00	1	275.0	0.73	1

Note:
 Suffix 'A' denotes 5% tolerance device.
 For Bi-Directional devices having VR of 10 volts and under, the IR limit is double.