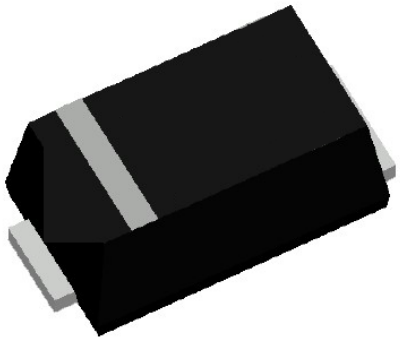
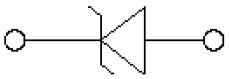
Surface Mount Transient Voltage Suppressor

Uni-directional





Features

- For surface mounted applications
- Low-profile package
- Ideal for automated placement
- Available in Unidirectional
- 200 W peak pulse power capability with a 10/1000 μs waveform
- Low incremental surge resistance, excellent clamping capability
- Very fast response time
- High temperature soldering guaranteed: 260 °C/10 s at terminals
- Meets MSL level 1
- Component in accordance to RoHS

Typical Applications

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET, signal lines of sensor units for consumer, computer, industrial, telecommunication.

Mechanical Date

- **Package**: SOD-323HE
  Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** For uni-directional types the band denotes cathode end

■Maximum Ratings (Ta=25℃ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Conditions	Max
Peak power dissipation(1) (2) (Fig.1)	P_{PPM}	W	with a 10/1000us waveform	200
Peak pulse current(1)	I_{PPM}	A	with a 10/1000us waveform	(See Next Table)
Power dissipation, on infinite heat sink	P_D	W	TL=75℃	1
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only	I_{FSM}	A		20
Maximum instantaneous forward voltage	VF	V	IF=1A	1.2
Operating junction and storage temperature range	T_J,T_{STG}	℃		-55 to +150
Electrostatic Discharge	ESD	KV	IEC61000-4-2 air discharge	±30
Electrostatic Discharge			IEC61000-4-2 contact discharge	
Thermal resistance(3)	$R_{\theta JL}$	℃/W	Between junction and lead	100
	$R_{\theta JA}$		Between junction and Ambient	300

Notes:

(1). Non repetitive current pulse，per Fig2 and derated above TA=25℃ per Fig3.

(2). Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum

(3).Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

■Ordering Information (Example)

PREFERED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
SMHEB SERIES	F1	Approximate 0.008	3000	120000	7” reel

■ Electrical Characteristics (TA=25℃ unless otherwise noted)

Part Number	Marking Code	Breakdown Voltage V_{BR}@I_T			Maximum Reverse Leakage I_R(3) @ V_{RWM} (μA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current I_{PP} (2) (A)	Maximum Clamping Voltage Vc @ I_{PP} (V)
		Min(V)	Max (V)	I_T(1)(mA)				
SMHEB6.5A	HK	7.22	7.98	10	250	6.5	17.86	11.2
SMHEB7.0A	HM	7.78	8.6	10	100	7	16.67	12
SMHEB7.5A	HP	8.33	9.21	1	50	7.5	15.5	12.9
SMHEB8.0A	HR	8.89	9.83	1	25	8	14.71	13.6
SMHEB8.5A	HT	9.44	10.4	1	10	8.5	13.89	14.4
SMHEB9.0A	HV	10	11.1	1	5	9	12.99	15.4
SMHEB10A	HX	11.1	12.3	1	2.5	10	11.76	17
SMHEB11A	HZ	12.2	13.5	1	2.5	11	10.99	18.2
SMHEB12A	JE	13.3	14.7	1	2.5	12	10.05	19.9
SMHEB13A	JG	14.4	15.9	1	1	13	9.3	21.5
SMHEB14A	JK	15.6	17.2	1	1	14	8.62	23.2
SMHEB15A	JM	16.7	18.5	1	1	15	8.2	24.4
SMHEB16A	JP	17.8	19.7	1	1	16	7.69	26
SMHEB17A	JR	18.9	20.9	1	1	17	7.25	27.6
SMHEB18A	JT	20	22.1	1	1	18	6.85	29.2
SMHEB19A	JV	21.1	23.3	1	1	19	6.54	30.6
SMHEB20A	JX	22.2	24.5	1	1	20	6.17	32.4
SMHEB22A	JZ	24.4	26.9	1	1	22	5.63	35.5
SMHEB24A	KE	26.7	29.5	1	1	24	5.14	38.9
SMHEB26A	KG	28.9	31.9	1	1	26	4.75	42.1
SMHEB28A	KK	31.1	34.4	1	1	28	4.41	45.4
SMHEB30A	KM	33.3	36.8	1	1	30	4.13	48.4

SMHEB33A	KP	36.7	40.6	1	1	33	3.75	53.3
SMHEB36A	KR	40	44.2	1	1	36	3.44	58.1
SMHEB40A	KT	44.4	49.1	1	1	40	3.1	64.5
SMHEB43A	KV	47.8	52.8	1	1	43	2.88	69.4
SMHEB45A	KX	50	55.3	1	1	45	2.75	72.7
SMHEB48A	KZ	53.3	58.9	1	1	48	2.58	77.4
SMHEB51A	ME	56.7	62.7	1	1	51	2.43	82.4
SMHEB54A	MG	60	66.3	1	1	54	2.3	87.1
SMHEB58A	MK	64.4	71.2	1	1	58	2.14	93.6

Notes:
(1) t_p≤50ms Pulse test: t_p≤50ms.
(2) Surge current waveform per Fig. 2 and derated per Fig.3.

■ **Characteristics**(Typical)

FIG1:Peak Pulse Power Rating Curve

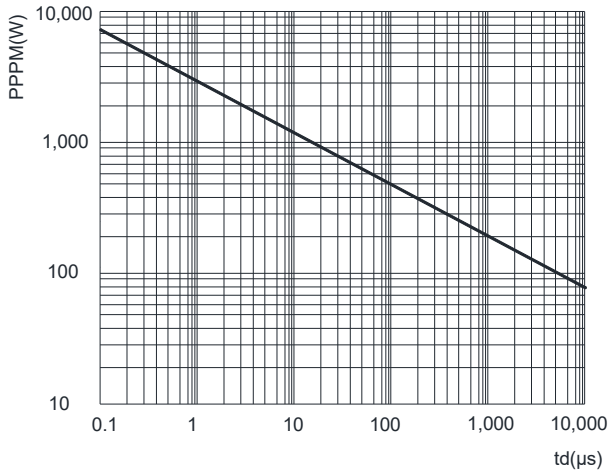


FIG2: Pulse Waveform

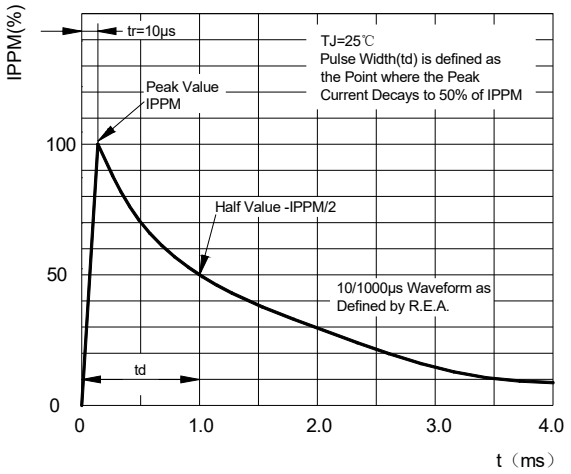


FIG3: Pulse Power or Current vs. Initial Junction Temperature

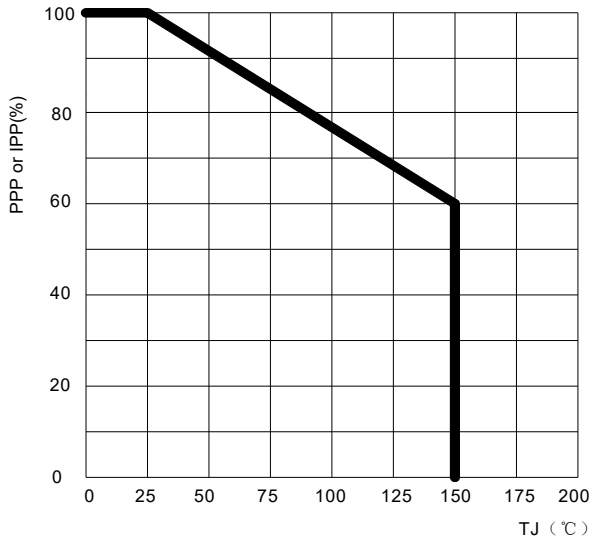
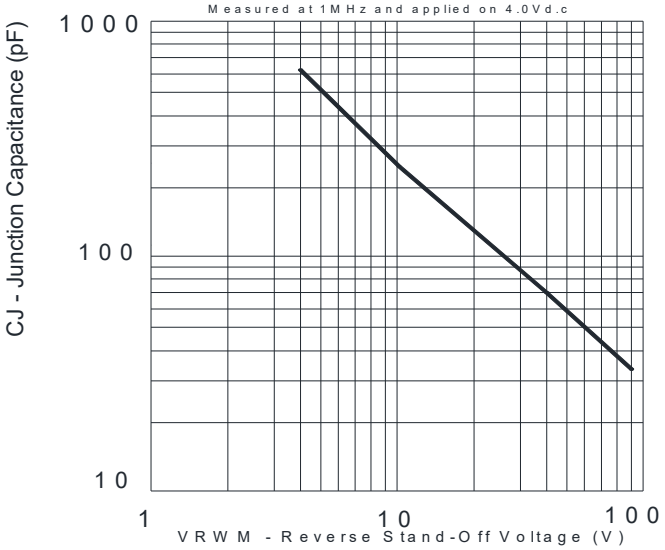
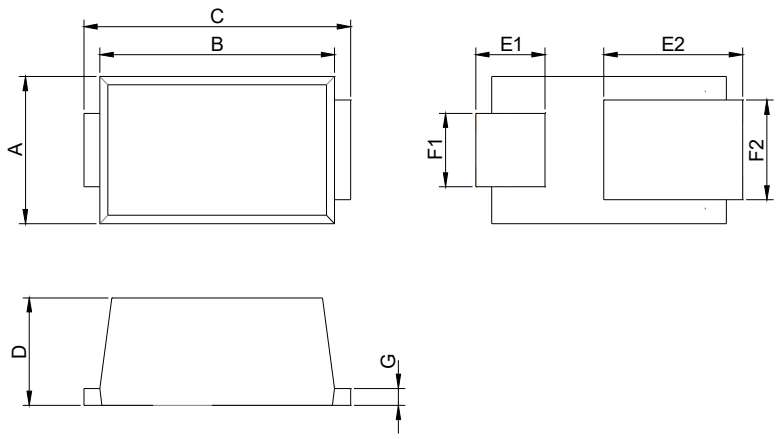


FIG 4 :Typical Junction Capacitance

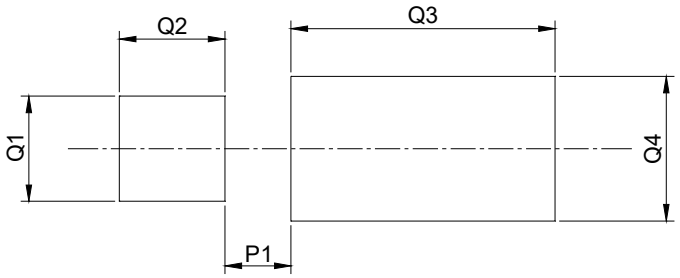


■ Outline Dimensions



SOD-323HE		
Dim	Millimeters	
	Min	Max
A	1.20	1.40
B	2.10	2.30
C	2.30	2.70
D	0.90	1.00
E1	0.55	0.75
E2	1.10	1.50
F1	0.55	0.75
F2	0.78	0.98
G	0.12	0.27

■ Suggested pad layout



SOD-323HE	
Dim	Millimeters
P1	0.50
Q1	0.80
Q2	0.80
Q3	2.00
Q4	1.10

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