

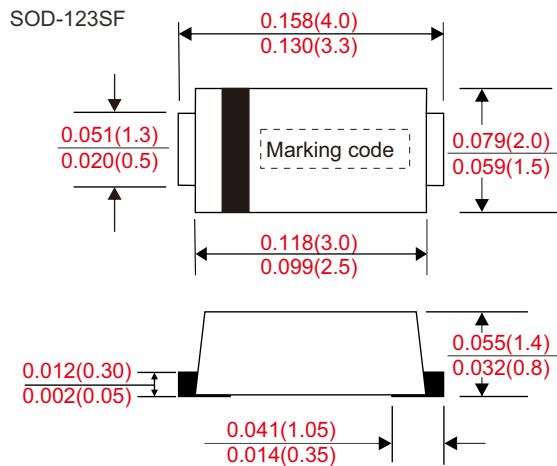
Features

- Glass passivated junction chip.
- 200 W peak pulse power capability with a 10/1000 us waveform, repetitive rate (duty cycle):0.01 %
- Excellent clamping capability.
- Low reverse leakage .
- Very fast response time.
- Lead and body according with RoHS standard .

Mechanical data

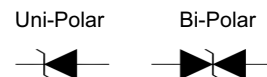
- Epoxy : UL94V-0 rated flame retardant.
- Case : Molded plastic,SOD-123SF
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026.
- Polarity : Color band denotes cathode end except Bipolar.
- Mounting position: Any

Outline



Dimensions in inches and (millimeters)

Circuit Diagram



Maximum ratings and electrical characteristics

Rating at 25°C ambient temperature unless otherwise noted.

Parameter	Conditions	Symbol	SMF5.0(C)AG-SF SERIES	UNIT
Peak power dissipation ⁽¹⁾	with a 10/1000 us waveform	P_{PP}	200	W
Power dissipation on infinite heatsonk	at $T_L=75^{\circ}\text{C}$	P_D	0.4	W
Peak pulse current ⁽¹⁾	with a 10/1000 us waveform	I_{PP}	See next table	A
Peak forward surge current ⁽²⁾	8.3ms single half sine-wave superimposed on rate load (JEDEC methode) unidirectional only	I_{FSM}	30	A
Maximum instantaneous forward voltage	at 10A for unidirectional only	V_F	3.5	V
Operating Junction temperature		T_J	-55 ~ +150	°C
Storage temperature		T_{STG}	-55 ~ +150	°C

Note

1. Non-repetitive current pulse per Fig.5 and derated above $T_A=25^{\circ}\text{C}$ per Fig.1
2. Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum

■ Electrical characteristics

Type		Marking		Stand-off Voltage	Max. Reverse Current @VR	Breakdown Voltage		Test Current Peak Pulse	Max. Peak Pulse Current	Max. Clamping Voltage @I _{PP}
Uni	Bi	Uni	Bi	V(R)	IR (μ A)	V _{BR} (V)		IT (mA)	I _{pp} (A)	V _c (V)
				(V)		Min.	Max.			
SMF5.0AG-SF	SMF5.0CAG-SF	AE	HE	5	400	6.4	7	10	21.7	9.2
SMF6.0AG-SF	SMF6.0CAG-SF	AG	HG	6	400	6.67	7.37	10	19.4	10.3
SMF6.5AG-SF	SMF6.5CAG-SF	AK	HK	6.5	250	7.22	7.98	10	17.9	11.2
SMF7.0AG-SF	SMF7.0CAG-SF	AM	HM	7	100	7.78	8.6	10	16.7	12
SMF7.5AG-SF	SMF7.5CAG-SF	AP	HP	7.5	50	8.33	9.21	1	15.5	12.9
SMF8.0AG-SF	SMF8.0CAG-SF	AR	HR	8	25	8.89	9.83	1	14.7	13.6
SMF8.5AG-SF	SMF8.5CAG-SF	AT	HT	8.5	10	9.44	10.4	1	13.9	14.4
SMF9.0AG-SF	SMF9.0CAG-SF	AV	HV	9	5	10	11.1	1	13	15.4
SMF10AG-SF	SMF10CAG-SF	AX	HX	10	2.5	11.1	12.3	1	11.8	17
SMF11AG-SF	SMF11CAG-SF	AZ	HZ	11	2.5	12.2	13.5	1	11	18.2
SMF12AG-SF	SMF12CAG-SF	BE	IE	12	2.5	13.3	14.7	1	10.1	19.9
SMF13AG-SF	SMF13CAG-SF	BG	IG	13	1	14.4	15.9	1	9.3	21.5
SMF14AG-SF	SMF14CAG-SF	BK	IK	14	1	15.6	17.2	1	8.6	23.2
SMF15AG-SF	SMF15CAG-SF	BM	IM	15	1	16.7	18.5	1	8.2	24.4
SMF16AG-SF	SMF16CAG-SF	BP	IP	16	1	17.8	19.7	1	7.7	26
SMF17AG-SF	SMF17CAG-SF	BR	IR	17	1	18.9	20.9	1	7.2	27.6
SMF18AG-SF	SMF18CAG-SF	BT	IT	18	1	20	22.1	1	6.8	29.2
SMF20AG-SF	SMF20CAG-SF	BV	IV	20	1	22.2	24.5	1	6.2	32.4
SMF22AG-SF	SMF22CAG-SF	BX	IX	22	1	24.4	26.9	1	5.6	35.5
SMF24AG-SF	SMF24CAG-SF	BZ	IZ	24	1	26.7	29.5	1	5.1	38.9
SMF26AG-SF	SMF26CAG-SF	CE	JE	26	1	28.9	31.9	1	4.8	42.1
SMF28AG-SF	SMF28CAG-SF	CG	JG	28	1	31.1	34.4	1	4.4	45.4
SMF30AG-SF	SMF30CAG-SF	CK	JK	30	1	33.3	36.8	1	4.1	48.4
SMF33AG-SF	SMF33CAG-SF	CM	JM	33	1	36.7	40.6	1	3.8	53.3
SMF36AG-SF	SMF36CAG-SF	CP	JP	36	1	40	44.2	1	3.4	58.1
SMF40AG-SF	SMF40CAG-SF	CR	JR	40	1	44.4	49.1	1	3.1	64.5

■ Electrical characteristics

Type		Marking		Stand-off Voltage	Max. Reverse Current @VR	Breakdown Voltage		Test Current Peak Pulse	Max. Peak Pulse Current	Max. Clamping Voltage @I _{PP}
Uni	Bi	Uni	Bi	V(R)	IR	V _{BR} (V)		IT	I _{pp}	V _c
				(V)		Min.	Max.			
SMF43AG-SF	SMF43CAG-SF	CT	JT	43	1	47.8	52.8	1	2.9	69.4
SMF45AG-SF	SMF45CAG-SF	CV	JV	45	1	50	55.3	1	2.8	72.7
SMF48AG-SF	SMF48CAG-SF	CX	JX	48	1	53.3	58.9	1	2.6	77.4
SMF51AG-SF	SMF51CAG-SF	CZ	JZ	51	1	56.7	62.7	1	2.4	82.4
SMF54AG-SF	SMF54CAG-SF	DE	KE	54	1	60	66.3	1	2.3	87.1
SMF58AG-SF	SMF58CAG-SF	RG	KG	58	1	64.4	71.2	1	2.1	93.6
SMF60AG-SF	SMF60CAG-SF	RK	KK	60	1	66.7	73.7	1	2.1	96.8
SMF64AG-SF	SMF64CAG-SF	RM	KM	64	1	71.1	78.6	1	1.9	103
SMF70AG-SF	SMF70CAG-SF	RP	KP	70	1	77.8	86	1	1.7	113
SMF75AG-SF	SMF75CAG-SF	RR	KR	75	1	83.3	92.1	1	1.6	121
SMF78AG-SF	SMF78CAG-SF	RT	KT	78	1	86.7	95.8	1	1.6	126
SMF85AG-SF	SMF85CAG-SF	RV	KV	85	1	94.4	104	1	1.5	137
SMF90AG-SF	SMF90CAG-SF	RW	KX	90	1	100	111	1	1.2	146
SMF100AG-SF	SMF100CAG-SF	RX	KZ	100	1	111	123	1	1.1	162
SMF110AG-SF	SMF110CAG-SF	SE	LE	110	1	122	135	1	1.1	177
SMF120AG-SF	SMF120CAG-SF	SG	LG	120	1	133	147	1	1	193
SMF130AG-SF	SMF130CAG-SF	SK	LK	130	1	144	159	1	1	209
SMF150AG-SF	SMF150CAG-SF	SM	LM	150	1	167	185	1	0.8	243
SMF160AG-SF	SMF160CAG-SF	SP	LP	160	1	178	197	1	0.8	259
SMF170AG-SF	SMF170CAG-SF	SR	LR	170	1	189	209	1	0.7	275
SMF180AG-SF	SMF180CAG-SF	ST	LT	180	1	201	222	1	0.7	292
SMF188AG-SF	SMF188CAG-SF	SV	LV	188	1	209	231	1	0.7	304
SMF200AG-SF	SMF200CAG-SF	SX	LX	200	1	224	247	1	0.6	324
SMF220AG-SF	SMF220CAG-SF	SZ	LZ	220	1	246	272	1	0.6	356
SMF250AG-SF	SMF250CAG-SF	TE	ME	250	1	279	309	1	0.5	405

■ Ratings and characteristic curves

Fig.1 - Pulse Derating Curve

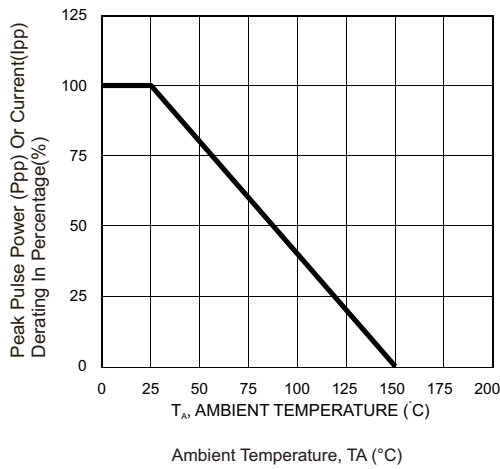


Fig.2 - Maximum Non-Repetitive Surge Current

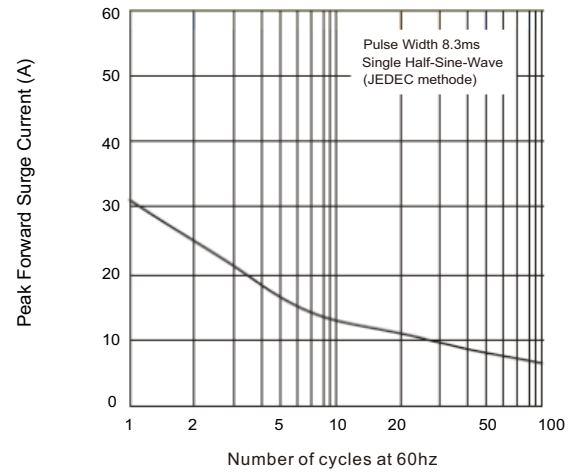


Fig. 3 Steady State Power Derating Curve

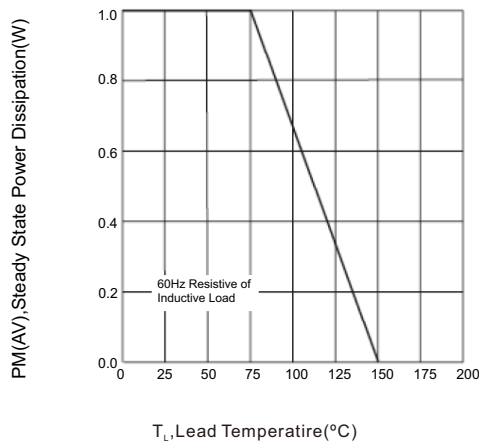


Fig. 4 Peak Pulse Power Rating Curve

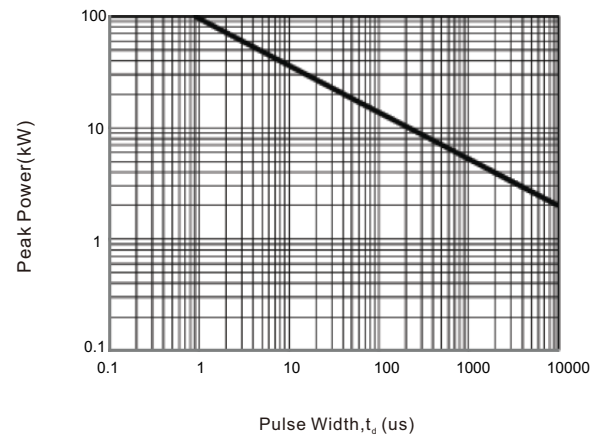


Fig. 5 - Pulse Waveform

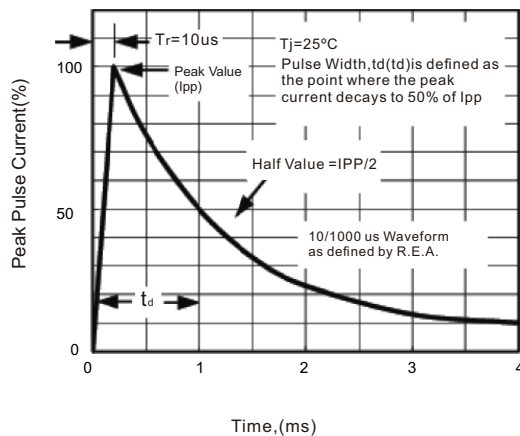
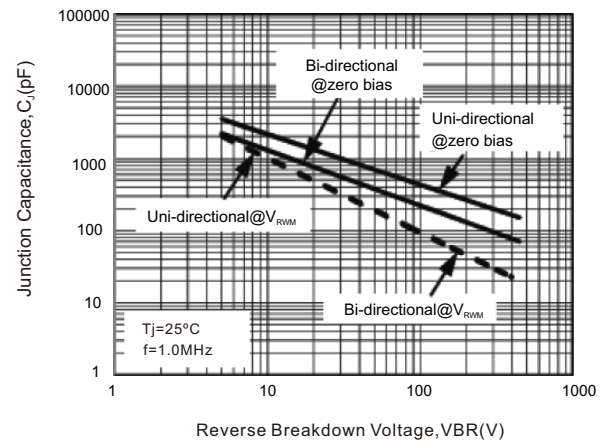


Fig. 6 Typical Junction Capacitance



■ Marking information

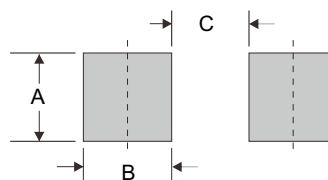


AE = SMF5.0AG-SF Marking Code



HE = SMF5.0CAG-SF Marking Code

■ SOD-123SF foot print



A	B	C
0.048 (1.20)	0.045 (1.15)	0.077 (1.95)

Dimensions in inches and (millimeters)

■ Ordering / Packing Information

Halogen	Part number	Case	Q'TY/Reel (PCS)	Q'TY/Box (PCS)	Q'TY/Carton (PCS)
Halogen free	SMF5.0(C)AG-SF SERIES	SOD-123SF	3,000	30,000	240,000

Notes: 1. For packaging details please reference ourwebsite at http://www.citcorp.com.tw/tw/All_Product.php

- The epoxy molding compound used for encapsulation may exhibit either a glossy or matte black surface finish, depending on material batch variation.
- Applicable to component leads with either bright or matte tin finishes, which may vary depending on material batch differences.
- This surface appearance variation is purely cosmetic, has no impact on product functionality, performance, or reliability, and is not considered a quality defect nor a basis for product rejection.
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