



SMF5.0A THRU SMF170A

SURFACE MOUNT SCHOTTKY BARRIER RECTIFIERS

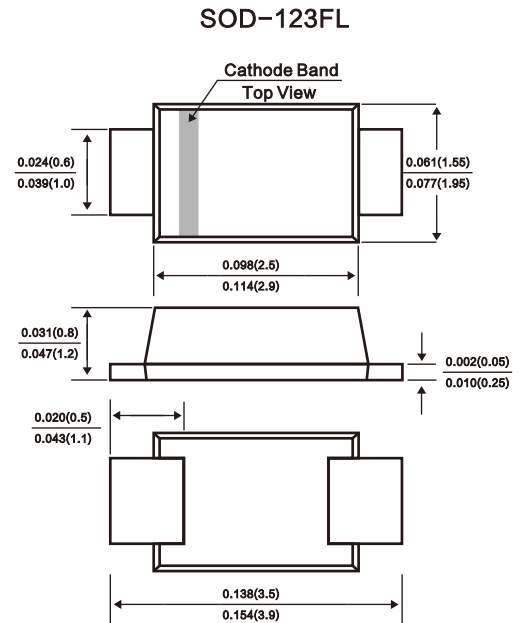
5.0V-170V 175-200W

FEATURES

- * Stand-off voltage ; 5 - 170 Volts
- * Peak Power ; - 200 Watts @ 1 ms (SMF5.0A - SMF58A)
- 175 Watts @ 1 ms (SMF60A - SMF170A)
- * Maximum clamp voltage @ Peak pulse current
- * Low leakage
- * Pb Free / RoHS Compliant

Mechanical Data

- * Case: JEDEC SOD-123FL, molded plastic over passivated chip
- * Terminals: Solder Plated, solderable per MIL-STD-750, Method 2026
- * Polarity: Color band denotes cathode end
- * Mounting position : Any
- * Weight: 0.006 ounces, 0.02 gram



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Maximum P_{PK} Dissipation (PW - 10/1000 μ s) (Note 1)	P_{PK}	175	W
SMF60A - SMF170A		200	W
SMF5.0A - SMF58A			
Maximum P_{PK} Dissipation @ Ta = 25 °C (PW - 8/10 μ s) (Note 2)	P_{PK}	1000	W
DC Power Dissipation @ Ta = 25 °C (Note 3)	P_D	385	mW
Derate above 25 °C		4.0	mW/°C
Thermal Resistance, Junction to Ambient (Note 3)	$R_{\theta JA}$	325	°C/W
Thermal Resistance, Junction to Lead (Note 3)	$R_{\theta JL}$	26	°C/W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

Notes :

- (1) Non-repetitive current pulse at Ta = 25°C, per waveform of Fig. 2.
- (2) Non-repetitive current pulse at Ta = 25°C, per waveform of Fig. 5.
- (3) Mounted with recommended minimum pad size, DC board FR4.



ELECTRICAL CHARACTERISTICS ($T_L = 30^\circ\text{C}$ unless otherwise noted $V_F = 1.25\text{ Volts @ }200\text{ mA}$)

Type No.	Marking	Working Peak Reverse Voltage ⁽¹⁾	Breakdown Voltage @ $\dagger$			Test Current	Max. Reverse Leakage Current	Max. Clamping Voltage at I_{PP}	Max. Reverse Peak Pulse Current ⁽³⁾
		V_{RWM}	V_{BR} @ I_T			I_T	I_R @ V_{RWM}	V_C	I_{PP}
		(V)	Min	Nom	Max.	(mA)	(A)	(V)	(mA)
SMF5.0A	AE	5.0	6.40	6.70	7.00	10	400	9.2	21.7
SMF6.0A	AG	6.0	6.67	7.02	7.37	10	400	10.3	19.4
SMF6.5A	AK	6.5	7.22	7.60	7.98	10	250	11.2	17.9
SMF7.0A	AM	7.0	7.78	8.20	8.60	10	100	12.0	16.7
SMF7.5A	AP	7.5	8.33	8.77	9.21	1.0	50	12.9	15.5
SMF8.0A	AR	8.0	8.89	9.36	9.83	1.0	25	13.6	14.7
SMF8.5A	AT	8.5	9.44	9.92	10.4	1.0	10	14.4	13.9
SMF9.0A	AV	9.0	10.0	10.55	11.1	1.0	5.0	15.4	13.0
SMF10A	AX	10	11.1	11.70	12.3	1.0	2.5	17.0	11.8
SMF11A	AZ	11	12.2	12.85	13.5	1.0	2.5	18.2	11.0
SMF12A	BE	12	13.3	14.00	14.7	1.0	2.5	19.9	10.1
SMF13A	BG	13	14.4	15.15	15.9	1.0	1.0	21.5	9.3
SMF14A	BK	14	15.6	16.40	17.2	1.0	1.0	23.2	8.6
SMF15A	BM	15	16.7	17.60	18.5	1.0	1.0	24.4	8.2
SMF16A	BP	16	17.8	18.75	19.7	1.0	1.0	26.0	7.7
SMF17A	BR	17	18.9	19.90	20.9	1.0	1.0	27.6	7.2
SMF18A	BT	18	20.0	21.00	22.1	1.0	1.0	29.2	6.8
SMF20A	BV	20	22.2	23.35	24.5	1.0	1.0	32.4	6.2
SMF22A	BX	22	24.4	25.60	26.9	1.0	1.0	35.5	5.6
SMF24A	BZ	24	26.7	28.10	29.5	1.0	1.0	38.9	5.1
SMF26A	CE	26	28.9	30.40	31.9	1.0	1.0	42.1	4.8
SMF28A	CG	28	31.1	32.80	34.4	1.0	1.0	45.4	4.4
SMF30A	CK	30	33.3	35.10	36.8	1.0	1.0	48.4	4.1
SMF33A	CM	33	36.7	38.70	40.6	1.0	1.0	53.3	3.8
SMF36A	CP	36	40.0	42.10	44.2	1.0	1.0	58.1	3.4
SMF40A	CR	40	44.4	46.80	49.1	1.0	1.0	64.5	3.1
SMF43A	CT	43	47.8	50.30	52.8	1.0	1.0	69.4	2.9
SMF45A	CV	45	50.0	52.65	55.3	1.0	1.0	72.7	2.8
SMF48A	CX	48	53.3	56.10	58.9	1.0	1.0	77.4	2.6
SMF51A	CZ	51	56.7	59.70	62.7	1.0	1.0	82.4	2.4
SMF54A	RE	54	60.0	63.15	66.3	1.0	1.0	87.1	2.3
SMF58A	RG	58	64.4	67.80	71.2	1.0	1.0	93.6	2.1
SMF60A	RK	60	66.7	70.20	73.7	1.0	1.0	96.8	1.8
SMF64A	RM	64	71.1	74.85	78.6	1.0	1.0	103	1.7
SMF70A	RP	70	77.8	81.90	86.0	1.0	1.0	113	1.5
SMF75A	RR	75	83.3	87.70	92.1	1.0	1.0	121	1.4
SMF78A	RT	78	86.7	91.25	95.8	1.0	1.0	126	1.4
SMF85A	RV	85	94.4	99.20	104	1.0	1.0	137	1.3
SMF90A	RX	90	100	105.50	111	1.0	1.0	146	1.2
SMF100A	RZ	100	111	117.00	123	1.0	1.0	162	1.1
SMF110A	SE	110	122	128.50	135	1.0	1.0	177	1.0
SMF120A	VG	120	133	140.00	147	1.0	1.0	193	0.9
SMF130A	VK	130	144	151.50	159	1.0	1.0	209	0.8
SMF150A	VM	150	167	176.00	185	1.0	1.0	243	0.7
SMF160A	SP	160	178	187.50	197	1.0	1.0	259	0.7
SMF170A	SR	170	189	199.00	209	1.0	1.0	275	0.6

Notes :

- (1) A transient suppressor is normally selected according to the Working Peak Reverse Voltage (V_{RWM}) which should be equal to or greater than the DC or continuous peak operating voltage level.
- (2) V_{BR} measured at pulse test current $\dagger$ at ambient temperature of 25°C .



RATING AND CHARACTERISTIC CURVES (SMF5.0A - SMF170A)

FIG.1 - PULSE DERATING CURVE

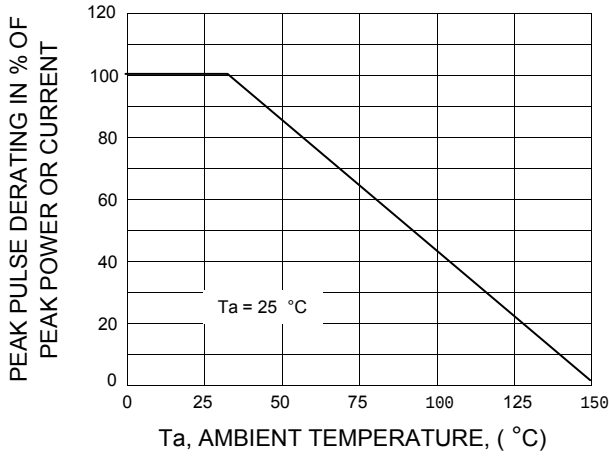


FIG.2 - 10 x 1000 μ s PULSE WAVEFORM

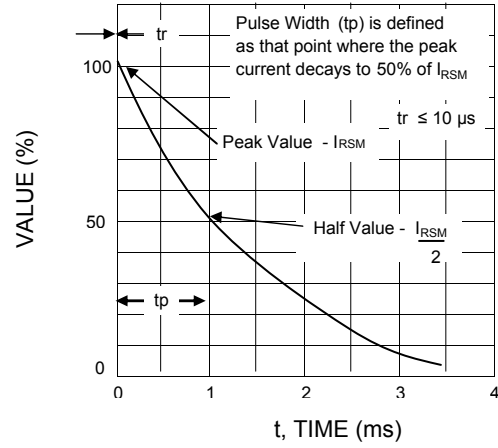


FIG.3 - STEADY STATE POWER DERATING

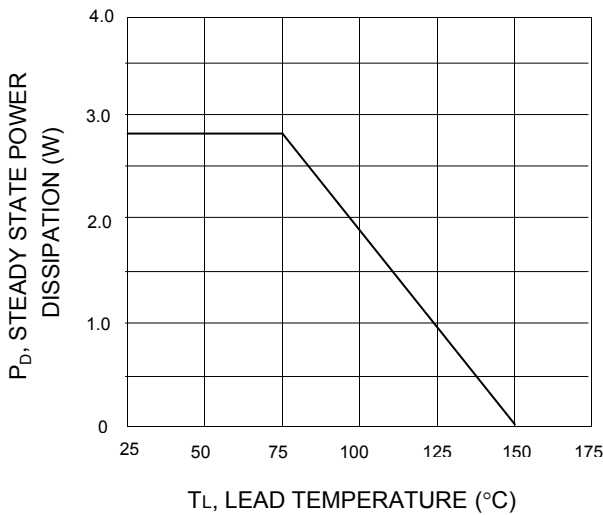


FIG.4 - PULSE RATING CURVE

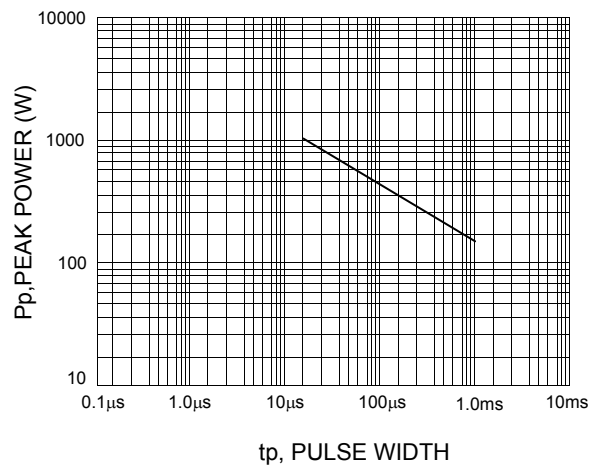


FIG.5 - 8 x 20 μ s PULSE WAVEFORM

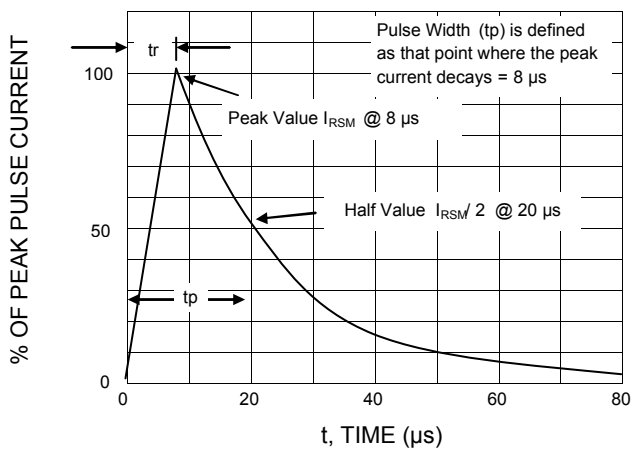


FIG. 6 - CAPACITANCE VS. WORKING PEAK REVERSE VOLTAGE

