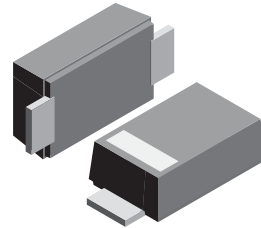


**VOLTAGE RANGE: 5.0 - 440 V**  
**POWER: 600Watts**

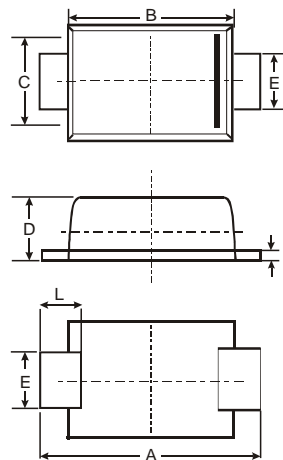


### Features

- Glass Passivated Die Construction
  - Uni- and Bi-Directional Versions Available
  - Excellent Clamping Capability
  - Fast Response Time
  - Plastic Material: UL Flammability
- Classification Rating 94V-0

### Mechanical Data

- Case: SMBF , Molded Plastic
- Terminals: Solder Plated, Solderable per MIL-STD-750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Marking: Date Code and Marking Code
- See Page 2
- Weight: 0.0018 ounces, 0.05grams



SMBF			
Dim	Min	Max	Typ
A	5.45	5.55	5.50
B	4.27	4.33	4.30
C	3.57	3.63	3.60
D	1.32	1.38	1.35
E	1.96	2.00	1.98
H	0.019	0.021	0.20
L	0.73	0.77	0.75
All Dimensions in mm			

### Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Pulse Power Dissipation (Non repetitive current pulse derated above $T_A = 25^\circ\text{C}$ ) (Note 1)	$P_{PK}$	600	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method) (Notes 1, 2, & 3)	$I_{FSM}$	100	A
Instantaneous Forward Voltage @ $I_{PP} = 35\text{A}$ (Notes 1, 2, & 3)	$V_F$	3.5 5.0	V V
Operating and Storage Temperature Range	$T_j, T_{STG}$	-55 to +150	$^\circ\text{C}$

- Notes:
1. Valid provided that terminals are kept at ambient temperature.
  2. Measured with 8.3ms single half sine-wave. Duty cycle = 4 pulses per minute maximum.
  3. Unidirectional units only.

TYPE		Reverse Stand-Off Voltage	Breakdown Voltage Min. @I <sub>T</sub>	Breakdown Voltage Max. @ I <sub>T</sub>	Test Current	Maximum Clamping Voltage @I <sub>PP</sub>	Peak Pulse Current	Reverse Leakage @V <sub>RWM</sub>
(Uni)	(Bi)	V <sub>RWM</sub> (V)	V <sub>BR</sub> MIN(V)	V <sub>BR</sub> MAX(V)	I <sub>T</sub> (mA)	V <sub>C</sub> (V)	I <sub>PP</sub> (A)	I <sub>R</sub> (uA)
SMBFJ5.0	SMBFJ5.0C	5.0	6.40	7.55	10	9.6	62.5	800.0
SMBFJ5.0A	SMBFJ5.0CA	5.0	6.40	7.25	10	9.2	65.2	800.0
SMBFJ6.0	SMBFJ6.0C	6.0	6.67	8.45	10	11.4	52.6	800.0
SMBFJ6.0A	SMBFJ6.0CA	6.0	6.67	7.67	10	10.3	58.3	800.0
SMBFJ6.5	SMBFJ6.5C	6.5	7.22	9.14	10	12.3	48.8	500.0
SMBFJ6.5A	SMBFJ6.5CA	6.5	7.22	8.30	10	11.2	53.6	500.0
SMBFJ7.0	SMBFJ7.0C	7.0	7.78	9.86	10	13.3	45.1	200.0
SMBFJ7.0A	SMBFJ7.0CA	7.0	7.78	8.95	10	12.0	50.0	200.0
SMBFJ7.5	SMBFJ7.5C	7.5	8.33	10.67	1.0	14.3	42.0	100.0
SMBFJ7.5A	SMBFJ7.5CA	7.5	8.33	9.58	1.0	12.9	46.5	100.0
SMBFJ8.0	SMBFJ8.0C	8.0	8.89	11.3	1.0	15.0	40.0	50.0
SMBFJ8.0A	SMBFJ8.0CA	8.0	8.89	10.23	1.0	13.6	44.1	50.0
SMBFJ8.5	SMBFJ8.5C	8.5	9.44	11.92	1.0	15.9	37.7	20.0
SMBFJ8.5A	SMBFJ8.5CA	8.5	9.44	10.82	1.0	14.4	41.7	20.0
SMBFJ9.0	SMBFJ9.0C	9.0	10.0	12.6	1.0	16.9	35.5	10.0
SMBFJ9.0A	SMBFJ9.0CA	9.0	10.0	11.5	1.0	15.4	39.0	10.0
SMBFJ10	SMBFJ10C	10	11.1	14.1	1.0	18.8	31.9	5.0
SMBFJ10A	SMBFJ10CA	10	11.1	12.8	1.0	17.0	35.3	5.0
SMBFJ11	SMBFJ11C	11	12.2	15.4	1.0	20.1	29.9	5.0
SMBFJ11A	SMBFJ11CA	11	12.2	14.0	1.0	18.2	33.0	5.0
SMBFJ12	SMBFJ12C	12	13.3	16.9	1.0	22.0	27.3	5.0
SMBFJ12A	SMBFJ12CA	12	13.3	15.3	1.0	19.9	30.2	5.0
SMBFJ13	SMBFJ13C	13	14.4	18.2	1.0	23.8	25.2	5.0
SMBFJ13A	SMBFJ13CA	13	14.4	16.5	1.0	21.5	27.9	5.0
SMBFJ14	SMBFJ14C	14	15.6	19.8	1.0	25.8	23.3	5.0
SMBFJ14A	SMBFJ14CA	14	15.6	17.9	1.0	23.2	25.9	5.0
SMBFJ15	SMBFJ15C	15	16.7	21.1	1.0	26.9	22.3	5.0
SMBFJ15A	SMBFJ15CA	15	16.7	19.2	1.0	24.4	24.6	5.0
SMBFJ16	SMBFJ16C	16	17.8	22.6	1.0	28.8	20.8	5.0
SMBFJ16A	SMBFJ16CA	16	17.8	20.5	1.0	26.0	23.1	5.0
SMBFJ17	SMBFJ17C	17	18.9	23.9	1.0	30.5	19.7	5.0
SMBFJ17A	SMBFJ17CA	17	18.9	21.7	1.0	27.6	21.7	5.0
SMBFJ18	SMBFJ18C	18	20.0	25.3	1.0	32.2	18.6	5.0
SMBFJ18A	SMBFJ18CA	18	20.0	23.3	1.0	29.2	20.5	5.0
SMBFJ20	SMBFJ20C	20	22.2	28.1	1.0	35.8	16.8	5.0
SMBFJ20A	SMBFJ20CA	20	22.2	25.5	1.0	32.4	18.5	5.0
SMBFJ22	SMBFJ22C	22	24.4	30.9	1.0	39.4	15.2	5.0
SMBFJ22A	SMBFJ22CA	22	24.4	28.0	1.0	35.5	16.9	5.0
SMBFJ24	SMBFJ24C	24	26.7	33.8	1.0	43.0	14.0	5.0
SMBFJ24A	SMBFJ24CA	24	26.7	30.7	1.0	38.9	15.4	5.0
SMBFJ26	SMBFJ26C	26	28.9	36.6	1.0	46.6	12.9	5.0
SMBFJ26A	SMBFJ26CA	26	28.9	33.2	1.0	42.1	14.3	5.0
SMBFJ28	SMBFJ28C	28	31.1	39.4	1.0	50.0	12.0	5.0
SMBFJ28A	SMBFJ28CA	28	31.1	35.8	1.0	45.4	13.2	5.0

TYPE		Reverse Stand-Off Voltage	Breakdown Voltage Min. @I <sub>T</sub>	Breakdown Voltage Max. @ I <sub>T</sub>	Test Current	Maximum Clamping Voltage @I <sub>PP</sub>	Peak Pulse Current	Reverse Leakage @V <sub>RWM</sub>
(Uni)	(Bi)	V <sub>RWM</sub> (V)	V <sub>BR</sub> MIN(V)	V <sub>BR</sub> MAX(V)	I <sub>T</sub> (mA)	V <sub>C</sub> (V)	I <sub>PP</sub> (A)	I <sub>R</sub> (uA)
SMBFJ30	SMBFJ30C	30	33.3	42.2	1.0	53.5	11.2	5.0
SMBFJ30A	SMBFJ30CA	30	33.3	38.3	1.0	48.4	12.4	5.0
SMBFJ33	SMBFJ33C	33	36.7	46.5	1.0	59.0	10.2	5.0
SMBFJ33A	SMBFJ33CA	33	36.7	42.2	1.0	53.3	11.3	5.0
SMBFJ36	SMBFJ36C	36	40.0	50.7	1.0	64.3	9.3	5.0
SMBFJ36A	SMBFJ36CA	36	40.0	46.0	1.0	58.1	10.3	5.0
SMBFJ40	SMBFJ40C	40	44.4	56.3	1.0	71.4	8.4	5.0
SMBFJ40A	SMBFJ40CA	40	44.4	51.1	1.0	64.5	9.3	5.0
SMBFJ43	SMBFJ43C	43	47.8	60.5	1.0	76.7	7.8	5.0
SMBFJ43A	SMBFJ43CA	43	47.8	54.9	1.0	69.4	8.6	5.0
SMBFJ45	SMBFJ45C	45	50.0	63.3	1.0	80.3	7.5	5.0
SMBFJ45A	SMBFJ45CA	45	50.0	57.5	1.0	72.7	8.3	5.0
SMBFJ48	SMBFJ48C	48	53.3	67.5	1.0	85.5	7.0	5.0
SMBFJ48A	SMBFJ48CA	48	53.3	61.3	1.0	77.4	7.8	5.0
SMBFJ51	SMBFJ51C	51	56.7	71.8	1.0	91.1	6.6	5.0
SMBFJ51A	SMBFJ51CA	51	56.7	65.2	1.0	82.4	7.3	5.0
SMBFJ54	SMBFJ54C	54	60.0	76.0	1.0	96.3	6.2	5.0
SMBFJ54A	SMBFJ54CA	54	60.0	69.0	1.0	87.1	6.9	5.0
SMBFJ58	SMBFJ58C	58	64.4	81.6	1.0	103	5.8	5.0
SMBFJ58A	SMBFJ58CA	58	64.4	74.1	1.0	93.6	6.4	5.0
SMBFJ60	SMBFJ60C	60	66.7	84.5	1.0	107	5.6	5.0
SMBFJ60A	SMBFJ60CA	60	66.7	76.7	1.0	96.8	6.2	5.0
SMBFJ64	SMBFJ64C	64	71.1	90.1	1.0	114	5.3	5.0
SMBFJ64A	SMBFJ64CA	64	71.1	81.8	1.0	103	5.8	5.0
SMBFJ70	SMBFJ70C	70	77.8	98.6	1.0	125	4.8	5.0
SMBFJ70A	SMBFJ70CA	70	77.8	89.5	1.0	113	5.3	5.0
SMBFJ75	SMBFJ75C	75	83.0	105.7	1.0	134	4.5	5.0
SMBFJ75A	SMBFJ75CA	75	83.0	95.8	1.0	121	5.0	5.0
SMBFJ78	SMBFJ78C	78	86.0	109.8	1.0	139	4.3	5.0
SMBFJ78A	SMBFJ78CA	78	86.0	99.7	1.0	126	4.8	5.0
SMBFJ85	SMBFJ85C	85	94.0	119.2	1.0	151	4.0	5.0
SMBFJ85A	SMBFJ85CA	85	94.0	108.2	1.0	137	4.4	5.0
SMBFJ90	SMBFJ90C	90	100	126.5	1.0	160	3.8	5.0
SMBFJ90A	SMBFJ90CA	90	100	115.5	1.0	146	4.1	5.0
SMBFJ100	SMBFJ100C	100	111	141.0	1.0	179	3.4	5.0
SMBFJ100A	SMBFJ100CA	100	111	128.0	1.0	162	3.7	5.0
SMBFJ110	SMBFJ110C	110	122	154.5	1.0	196	3.1	5.0
SMBFJ110A	SMBFJ110CA	100	122	140.5	1.0	177	3.4	5.0
SMBFJ120	SMBFJ120C	120	133	169.0	1.0	214	2.8	5.0
SMBFJ120A	SMBFJ120CA	120	133	153.0	1.0	193	3.1	5.0
SMBFJ130	SMBFJ130C	130	144	182.5	1.0	231	2.6	5.0
SMBFJ130A	SMBFJ130CA	130	144	165.5	1.0	209	2.9	5.0
SMBFJ150	SMBFJ150C	150	167	211.5	1.0	268	2.2	5.0
SMBFJ150A	SMBFJ150CA	150	167	192.5	1.0	243	2.5	5.0
SMBFJ160	SMBFJ160C	160	178	226.0	1.0	287	2.1	5.0
SMBFJ160A	SMBFJ160CA	160	178	205.0	1.0	259	2.3	5.0

TYPE		Reverse Stand-Off Voltage	Breakdown Voltage Min. @ $I_T$	Breakdown Voltage Max. @ $I_T$	Test Current	Maximum Clamping Voltage @ $I_{PP}$	Peak Pulse Current	Reverse Leakage @ $V_{RWM}$
(Uni)	(Bi)	$V_{RWM}(V)$	$V_{BR MIN}(V)$	$V_{BR MAX}(V)$	$I_T (mA)$	$V_C(V)$	$I_{PP}(A)$	$I_R(\mu A)$
SMBFJ170	SMBFJ170C	170	189	239.5	1.0	304	2.0	5.0
SMBFJ170A	SMBFJ170CA	170	189	217.5	1.0	275	2.2	5.0
SMBFJ180	SMBFJ180C	180	200	253.8	1.0	321	1.9	5.0
SMBFJ180A	SMBFJ180CA	180	200	230.4	1.0	290	2.1	5.0
SMBFJ190	SMBFJ190C	190	211	267.9	1.0	339	1.8	5.0
SMBFJ190A	SMBFJ190CA	190	211	243.2	1.0	306	2.0	5.0
SMBFJ200	SMBFJ200C	200	222	282.0	1.0	356	1.7	5.0
SMBFJ200A	SMBFJ200CA	200	222	256.0	1.0	322	1.9	5.0
SMBFJ210	SMBFJ210C	210	233	296.1	1.0	375	1.6	5.0
SMBFJ210A	SMBFJ210CA	210	233	268.8	1.0	339	1.8	5.0
SMBFJ220	SMBFJ220C	220	244	310.2	1.0	392	1.5	5.0
SMBFJ220A	SMBFJ220CA	220	244	281.6	1.0	355	1.7	5.0
SMBFJ250	SMBFJ250C	250	278	342.5	1.0	447	1.3	5.0
SMBFJ250A	SMBFJ250CA	250	278	309.0	1.0	403	1.5	5.0
SMBFJ300	SMBFJ300C	300	333	411.0	1.0	535	1.1	5.0
SMBFJ300A	SMBFJ300CA	300	333	371.0	1.0	484	1.2	5.0
SMBFJ350	SMBFJ350C	350	389	479.5	1.0	624	1.0	5.0
SMBFJ350A	SMBFJ350CA	350	389	432.0	1.0	565	1.1	5.0
SMBFJ400	SMBFJ400C	400	444	548.0	1.0	687	0.9	5.0
SMBFJ400A	SMBFJ400CA	400	444	494.0	1.0	645	0.9	5.0
SMBFJ440	SMBFJ440C	440	489	602.8	1.0	786	0.8	5.0
SMBFJ440A	SMBFJ440CA	440	489	543.0	1.0	710	0.8	5.0

**Note:**

- ( 1 )  $V_{BR}$  measured after  $I_T$  applied for 300  $\mu s.$ ,  $I_T$  = square wave pulse or equivalent.
- ( 2 ) Surge Current Waveform per Figure 5 and Derate per Figure 1
- ( 3 ) A Transient suppressor is normally selected according to the reverse " Stand-off Voltage " ( $V_{WM}$ ) which should be equal to or greater then the D.C. or continuous peak operating voltage level.

## Ratings and Characteristic Curves $T_A = 25^\circ\text{C}$ unless otherwise noted

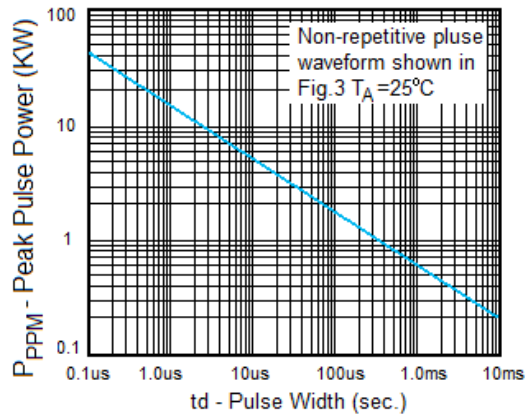


Fig. 1 Peak Pulse Power Rating

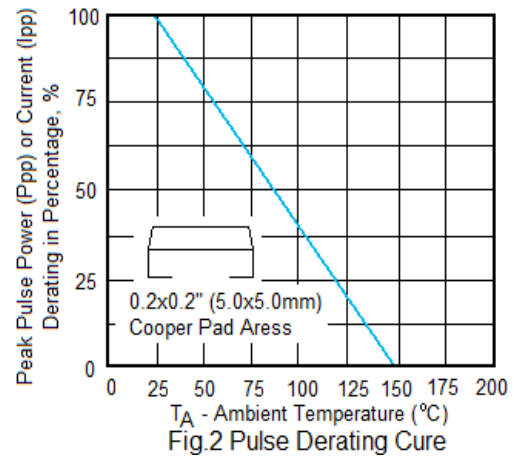


Fig. 2 Pulse Derating Curve

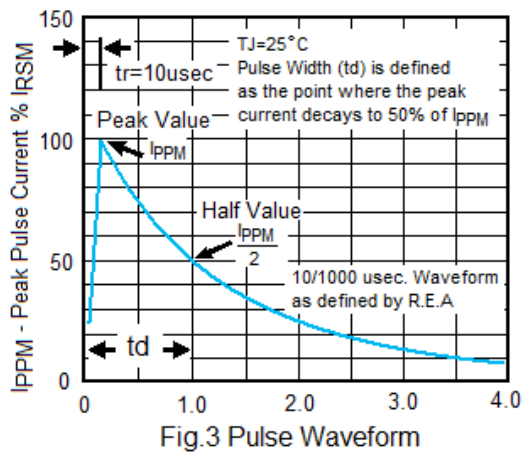


Fig. 3 Pulse Waveform

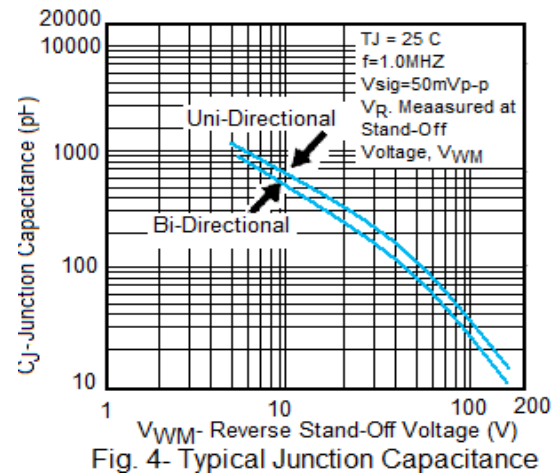


Fig. 4- Typical Junction Capacitance