

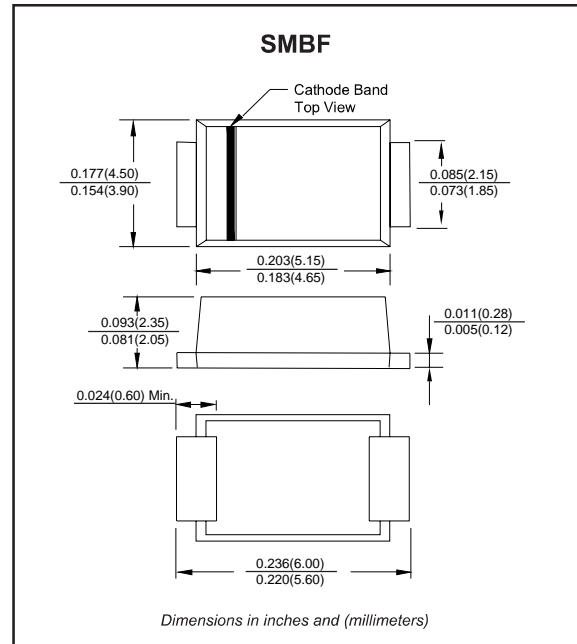
### Features

- Low profile surface mounted application in order to optimize board space.
- Excellent clamping capability.
- Low incremental surge resistance.
- Fast response time from 0V to VBR, typically less than 1 ps for uni-directional & 5 ns for bi-directional types.
- Glass passivated chip junction.
- Lead-free parts meet RoHS requirements.
- Compliant to Halogen-free

### Mechanical data

- Epoxy : UL94-V0 rated flame retardant
- Case : Molded plastic, SMBF
- Lead : Axial leads, solderable per MIL-STD-202, Method 208 guaranteed
- Polarity : Color band denotes cathode end
- Mounting Position : Any

### Package outline



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

PARAMETER	CONDITIONS	Symbol	VALUE	UNIT
Peak power dissipation	with a 10/1000 us waveform	$P_{PPM}$	1500	W
Peak pulse current	with a 10/1000 us waveform	$I_{PPM}$	See table 1	A
Steady state power dissipation	at $T_J=75^{\circ}\text{C}$	$P_{M(AV)}$	5.0	W
Peak forward surge current	8.3ms single half sine-wave for unidirectional only	$I_{FSM}$	200	A
Operating junction temperature range		$T_J$	-55~+150	$^{\circ}\text{C}$
Storage temperature range		$T_{STG}$	-55~+150	$^{\circ}\text{C}$

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

Table 1

Part No.	Reverse Stand-off Voltage	Breakdown Voltage @ $I_T$		Test Current	Maximum Clamping Voltage @ $I_{PP}$		Maximum Reverse Leakage Current	Marking Code	
	$V_{RWM}$	$V_{BR\ Min}$	$V_{BR\ Max}$	$I_T$	$V_c@I_{PP}$		$I_R@V_{RWM}$		
	Volts	Volts	Volts	mA	Volts	$I_{PP}(A)$	$\mu A$	UNI	BI
SMBF15J5.0(C)A	5.0	6.40	7.00	10	9.2	163.0	300	GDE	BDE
SMBF15J6.0(C)A	6.0	6.67	7.37	10	10.3	145.6	250	GDG	BDG
SMBF15J6.5(C)A	6.5	7.22	7.98	10	11.2	134.0	150	GDK	BDK
SMBF15J7.0(C)A	7.0	7.78	8.60	10	12.0	125.0	100	GDM	BDM
SMBF15J7.5(C)A	7.5	8.33	9.21	1.0	12.9	116.3	50	GDP	BDP
SMBF15J8.0(C)A	8.0	8.89	9.83	1.0	13.6	110.3	30	GDR	BDR
SMBF15J8.5(C)A	8.5	9.44	10.40	1.0	14.4	104.2	20	GDT	BDT
SMBF15J9.0(C)A	9.0	10.00	11.10	1.0	15.4	97.4	10	GDV	BDV
SMBF15J10(C)A	10	11.10	12.30	1.0	17.0	88.2	5	GDX	BDX
SMBF15J11(C)A	11	12.20	13.50	1.0	18.2	82.4	2	GDZ	BDZ
SMBF15J12(C)A	12	13.30	14.70	1.0	19.9	75.4	1	GEE	BEE
SMBF15J13(C)A	13	14.40	15.90	1.0	21.5	69.8	1	GEG	BEG
SMBF15J14(C)A	14	15.60	17.20	1.0	23.2	64.7	1	GEK	BEK
SMBF15J15(C)A	15	16.70	18.50	1.0	24.4	61.5	1	GEM	BEM
SMBF15J16(C)A	16	17.80	19.70	1.0	26.0	57.7	1	GEP	BEP
SMBF15J17(C)A	17	18.90	20.90	1.0	27.6	54.4	1	GER	BER
SMBF15J18(C)A	18	20.00	22.10	1.0	29.2	51.4	1	GET	BET
SMBF15J20(C)A	20	22.20	24.50	1.0	32.4	46.3	1	GEV	BEV
SMBF15J22(C)A	22	24.40	26.90	1.0	35.5	42.3	1	GEX	BEX
SMBF15J24(C)A	24	26.70	29.50	1.0	38.9	38.6	1	GEZ	BEZ
SMBF15J26(C)A	26	28.90	31.90	1.0	42.1	35.6	1	GFE	BEF
SMBF15J28(C)A	28	31.10	34.40	1.0	45.4	33.1	1	GFG	BEF
SMBF15J30(C)A	30	33.30	36.80	1.0	48.4	31.0	1	GFK	BEF
SMBF15J33(C)A	33	33.70	40.60	1.0	53.3	28.2	1	GFM	BFM
SMBF15J36(C)A	36	40.00	44.20	1.0	58.1	25.8	1	GFP	BFP
SMBF15J40(C)A	40	44.40	49.10	1.0	64.5	23.3	1	GFR	BFR
SMBF15J43(C)A	43	47.80	52.80	1.0	69.4	21.6	1	GFT	BFT
SMBF15J45(C)A	45	50.00	55.30	1.0	72.7	20.6	1	GFV	BFV
SMBF15J48(C)A	48	55.30	58.90	1.0	77.4	19.4	1	GFY	BFY
SMBF15J51(C)A	51	56.70	62.70	1.0	82.4	18.2	1	GFZ	BFZ
SMBF15J54(C)A	54	60.00	66.30	1.0	87.1	17.2	1	GGE	BGE
SMBF15J58(C)A	58	64.40	71.20	1.0	93.6	16.1	1	GGG	BGG
SMBF15J60(C)A	60	66.70	73.70	1.0	96.8	15.5	1	GGK	BGK
SMBF15J64(C)A	64	71.10	78.60	1.0	103.0	14.6	1	GGM	BGM
SMBF15J70(C)A	70	77.80	86.00	1.0	113.0	13.3	1	GGP	BGP
SMBF15J75(C)A	75	83.30	92.10	1.0	121.0	12.4	1	GGR	BGR
SMBF15J78(C)A	78	86.70	95.80	1.0	126.0	11.9	1	GGT	BGT

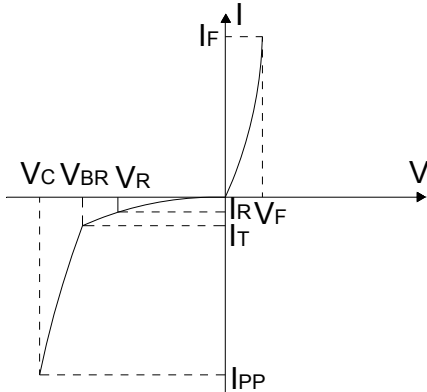
**Electrical characteristics** (at  $T_A=25^\circ\text{C}$  unless otherwise noted)

Table 1

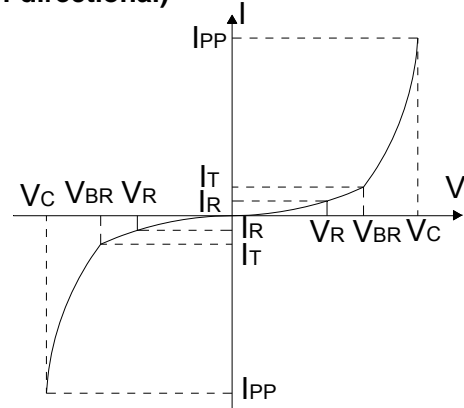
Part No.	Reverse Stand-off Voltage	Breakdown Voltage @ $I_T$		Test Current	Maximum Clamping Voltage @ $I_{PP}$		Maximum Reverse Leakage Current	Marking Code	
	$V_{RWM}$	$V_{BR Min}$	$V_{BR Max}$	$I_T$	$V_C @ I_{PP}$		$I_R @ V_{RWM}$		
	Volts	Volts	Volts	mA	Volts	$I_{PP}(A)$	$\mu A$	UNI	BI
SMBF15J85(C)A	85	94.40	104.0	1.0	137.0	11.0	1	GGV	BGV
SMBF15J90(C)A	90	100.0	111.0	1.0	146.0	10.3	1	GGX	BGX
SMBF15J100(C)A	100	111.0	123.0	1.0	162.0	9.3	1	GGZ	BGZ
SMBF15J110(C)A	110	122.0	135.0	1.0	177.0	8.5	1	GHE	BHE
SMBF15J120(C)A	120	133.0	147.0	1.0	193.0	7.8	1	GHG	BHG
SMBF15J130(C)A	130	144.0	159.0	1.0	209.0	7.2	1	GHK	BHK
SMBF15J150(C)A	150	167.0	185.0	1.0	243.0	6.2	1	GHM	BHM
SMBF15J160(C)A	160	178.0	197.0	1.0	259.0	5.8	1	GHP	BHP
SMBF15J170(C)A	170	189.0	209.0	1.0	275.0	5.5	1	GHR	BHR
SMBF15J180(C)A	180	201.0	222.0	1.0	292.0	5.2	1	GHT	BHT
SMBF15J190(C)A	190	211.0	234.0	1.0	307.0	4.9	1	GHU	BHU
SMBF15J200(C)A	200	224.0	247.0	1.0	324.0	4.7	1	GHV	BHV
SMBF15J210(C)A	210	233.0	258.0	1.0	337.0	4.5	1	GHX	BHX
SMBF15J220(C)A	220	246.0	272.0	1.0	356.0	4.2	1	GHZ	BHZ
SMBF15J250(C)A	250	279.0	309.0	1.0	405.0	3.7	1	GIE	BIE
SMBF15J300(C)A	300	335.0	371.0	1.0	486.0	3.1	1	GIG	BIG
SMBF15J350(C)A	350	391.0	432.0	1.0	567.0	2.6	1	GIK	BIK
SMBF15J400(C)A	400	447.0	494.0	1.0	648.0	2.3	1	GIM	BIM
SMBF15J440(C)A	440	492.0	543.0	1.0	713.0	2.1	1	GIP	BIP

## Rating and characteristic curves

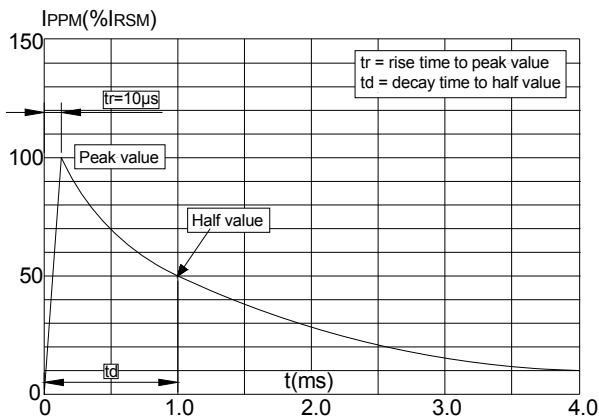
**FIG.1: V- I curve characteristics (Uni-directional)**



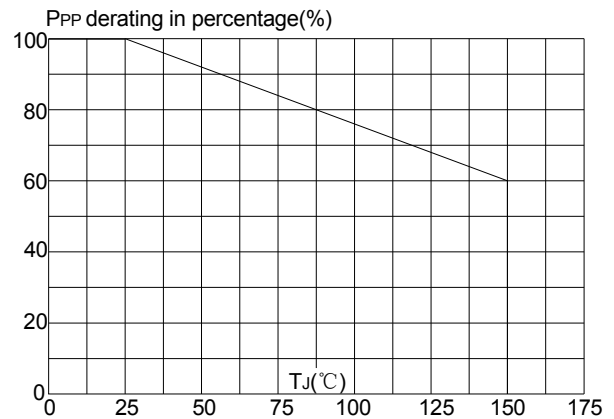
**FIG.2: V- I curve characteristics (Bi-directional)**





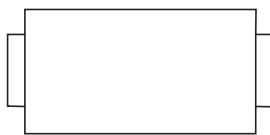

**FIG.3: Pulse waveform**



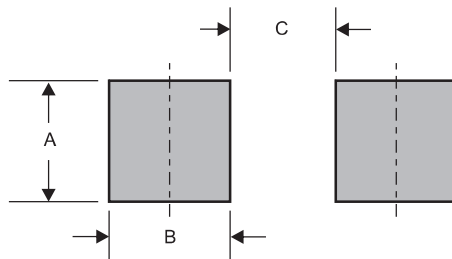
**FIG.4: Pulse derating curve**



## Pinning information

Pin	Simplified outline	Symbol
Uni-Directional Pin1 cathode Pin2 anode		
Bi-Directional		

## Suggested solder pad layout



Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SMBF	0.091(2.30)	0.079(2.00)	0.126(3.20)