

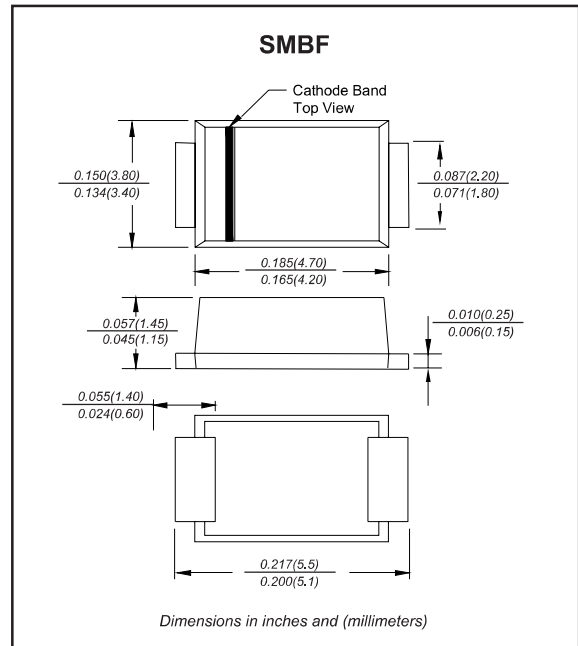
Features

- ▶ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ▶ For surface mounted applications
- ▶ Metal silicon junction, majority carrier conduction
- ▶ Low power loss, high efficiency
- ▶ Built-in strain relief, ideal for automated placement
- ▶ High forward surge current capability
- ▶ High temperature soldering guaranteed: 250°C/10 seconds at terminals
- ▶ Compliant to RoHS Directive 2011/65/EU
- ▶ Compliant to Halogen-free
- ▶ Suffix "-Q1" for AEC-Q101

Mechanical data

- ▶ **Case:** JEDEC SMBF molded plastic body
- ▶ **Terminals:** Solder plated, solderable per MIL-STD-750, Method 2026
- ▶ **Polarity:** Color band denotes cathode end
- ▶ **Mounting Position:** Any

Package outline



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

PARAMETER	CONDITIONS		Symbol	MIN.	TYP.	MAX.	UNIT
Forward rectified current	See Fig.1		I_o			5.0	A
Forward surge current	8.3ms single half sine-wave (JEDEC methode)		I_{FSM}			120	A
Reverse current	$T_A = 25^\circ\text{C}$	$V_R = 40\text{V} - 60\text{V}$	I_R			0.5	mA
		$V_R = 80\text{V} - 200\text{V}$				0.1	
Reverse current	$T_A = 100^\circ\text{C}$	$V_R = 40\text{V} - 60\text{V}$	I_R			20	mA
		$V_R = 80\text{V} - 200\text{V}$				5	
Thermal resistance	Junction to ambient NOTE 1		$R_{\theta JA}$		50		$^\circ\text{C}/\text{W}$
Diode junction capacitance	f=1MHz and applied 4V DC reverse voltage		C_J		400		pF
Storage temperature			T_{STG}	-65		+150	$^\circ\text{C}$

Note: 1.P.C.B. mounted with 0.2x0.2"(5.0x5.0mm) copper pad areas

SYMBOLS	V_{RRM}^{*1} (V)	V_{RMS}^{*2} (V)	V_R^{*3} (V)	V_F^{*4} (V)	Operating temperature T_J ($^\circ\text{C}$)
SS54-BF-Q1	40	28	40	0.55	-55 to +150
SS545-BF-Q1	45	32	45		
SS55-BF-Q1	50	35	50	0.70	
SS56-BF-Q1	60	42	60		
SS58-BF-Q1	80	56	80	0.85	
SS510-BF-Q1	100	70	100		
SS515-BF-Q1	150	105	150	0.92	
SS520-BF-Q1	200	140	200		

*1 Repetitive peak reverse voltage

*2 RMS voltage

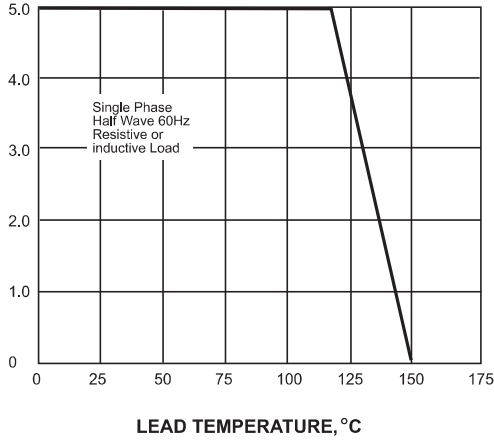
*3 Continuous reverse voltage

*4 Maximum forward voltage@ $I_F=5.0\text{A}$

Rating and characteristic curves

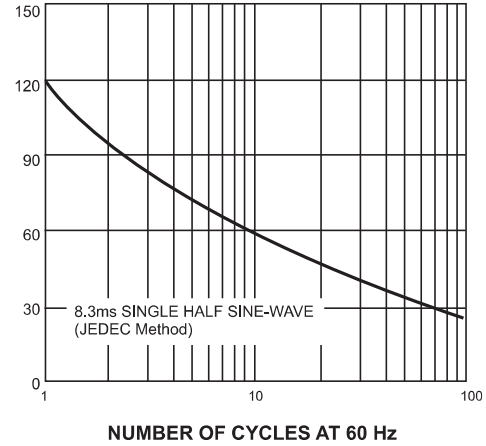
AVERAGE FORWARD RECTIFIED CURRENT, AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



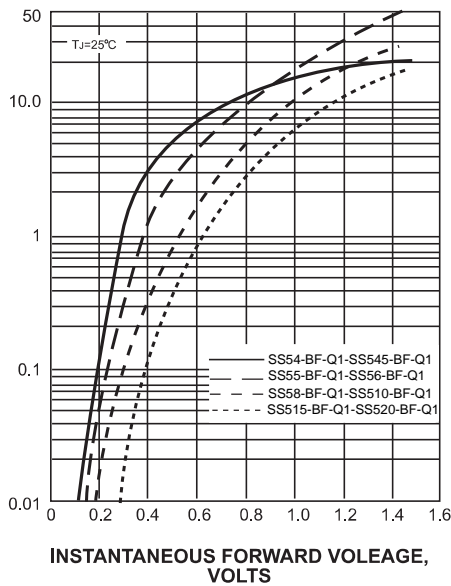
PEAK FORWARD SURGE CURRENT, AMPERES

FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



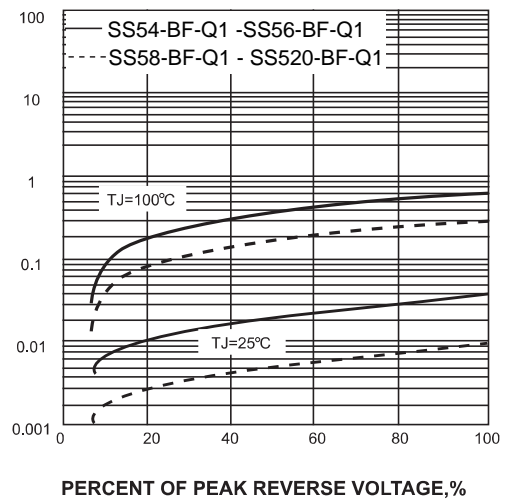
INSTANTANEOUS FORWARD CURRENT, AMPERES

FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



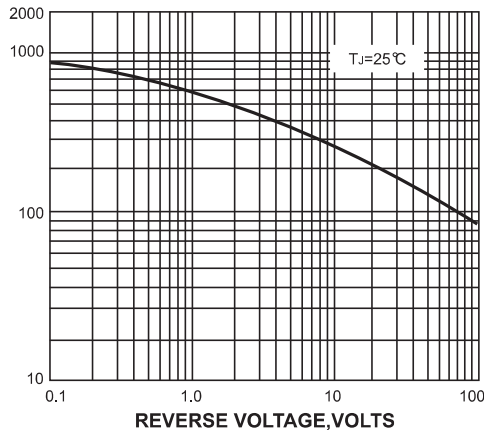
INSTANTANEOUS REVERSE CURRENT, MILLIAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS



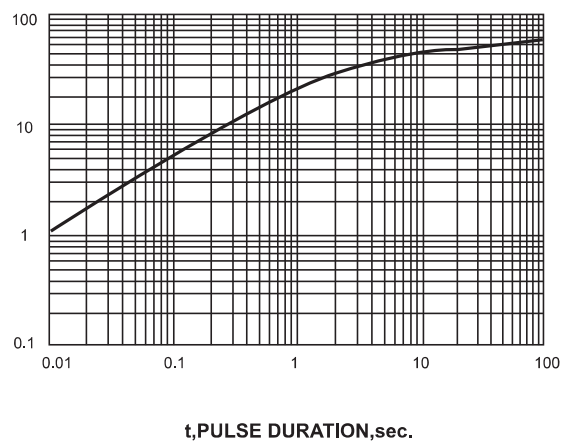
JUNCTION CAPACITANCE, pF

FIG. 5-TYPICAL JUNCTION CAPACITANCE

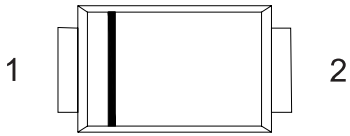



TRANSIENT THERMAL IMPEDANCE, °C/W

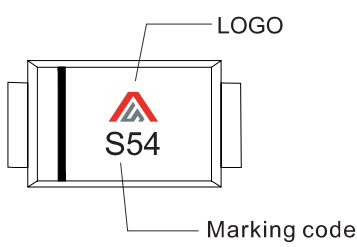
FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE



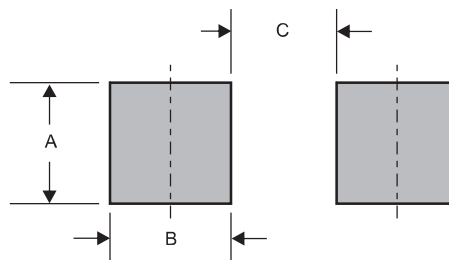
Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Marking

Type number	Marking code	Example
SS54-BF-Q1	S54	
SS545-BF-Q1	S545	
SS55-BF-Q1	S55	
SS56-BF-Q1	S56	
SS58-BF-Q1	S58	
SS510-BF-Q1	S510	
SS515-BF-Q1	S515	
SS520-BF-Q1	S520	

Suggested solder pad layout



Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SMBF	0.098 (2.50)	0.071 (1.80)	0.118 (3.00)