

SURFACE MOUNT ULTRA FAST RECTIFIER

Features

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ For surface mounted applications
- ◆ Ultra fast switching for high efficiency
- ◆ Low reverse leakage
- ◆ Built-in strain relief, ideal for automated placement
- ◆ High forward surge current capability
- ◆ High temperature soldering guaranteed
250 °C/10 seconds at terminals

Mechanical Data

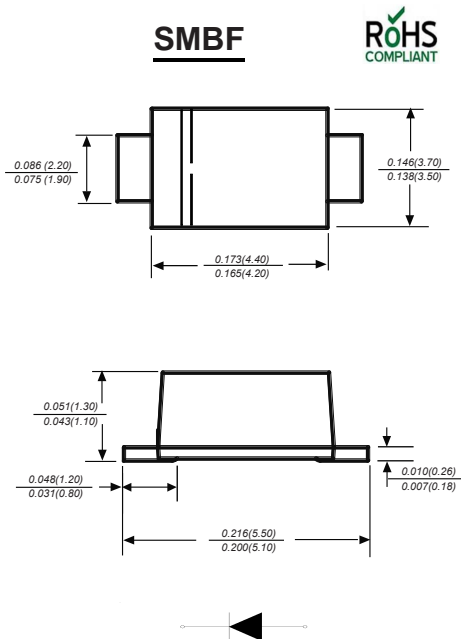
Case : JEDEC SMBF Molded plastic body

Terminals : Solder plated, solderable per MIL-STD-750, Method 2026

Polarity : Polarity symbol marking on body

Mounting Position : Any

Weight : 0.002 ounce, 0.057 grams



Maximum Ratings And Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

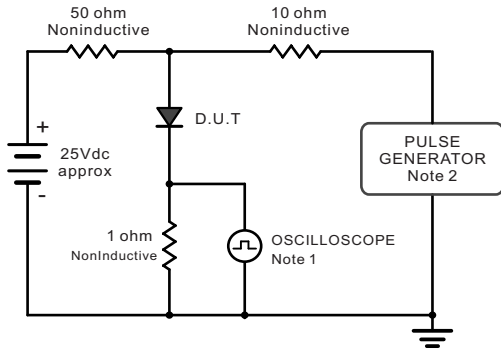
Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.

Parameter	SYMBOLS	US2ABF	US2BBF	US2DBF	US2GBF	US2JBF	US2KBF	US2MBF	UNITS	
		MDD U2AB	MDD U2BB	MDD U2DB	MDD U2GB	MDD U2JB	MDD U2KB	MDD U2MB		
Maximum repetitive peak reverse voltage	V_{RMM}	50	100	200	400	600	800	1000	V	
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	560	700	V	
Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	800	1000	V	
Maximum average forward rectified current at $T_L=55^\circ\text{C}$	$I_{(AV)}$	2.0							A	
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	50							A	
Maximum instantaneous forward voltage at 2.0A	V_F	1.0		1.30		1.60			V	
Maximum DC reverse current $T_A=25^\circ\text{C}$ at rated DC blocking voltage $T_A=125^\circ\text{C}$	I_R	5.0 100.0							μA	
Maximum reverse recovery time	t_{rr}	50				75				ns
Typical thermal resistance	$R_{\theta JA}$	60.0							$^\circ\text{C}/\text{W}$	
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150							$^\circ\text{C}$	

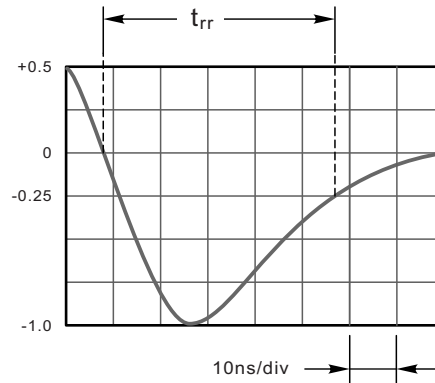
Note: 1. Reverse recovery condition $I_F=0.5\text{A}, I_R=1.0\text{A}, I_{rr}=0.25\text{A}$
 2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.
 3. P.C.B. mounted with $0.5 \times 0.5''$ (12.7x12.7mm) copper pad areas

Ratings And Characteristic Curves

Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram



Note: 1. Rise Time = 7ns, max.
 Input Impedance = 1megohm, 22pF.
 2. Rises Time = 10ns, max.
 Source Impedance = 50 ohms.



Set time Base for 10ns/div

Fig.2 Maximum Average Forward Current Rating

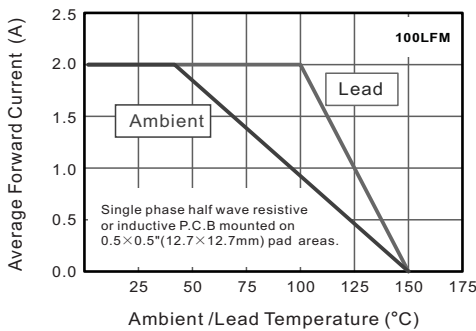


Fig.3 Typical Reverse Characteristics

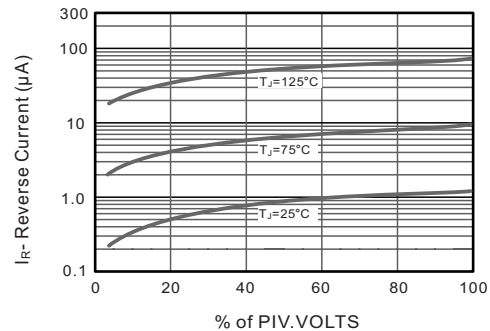


Fig.3 Typical Instaneous Forward Characteristics

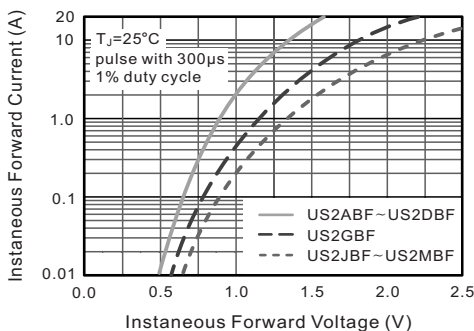
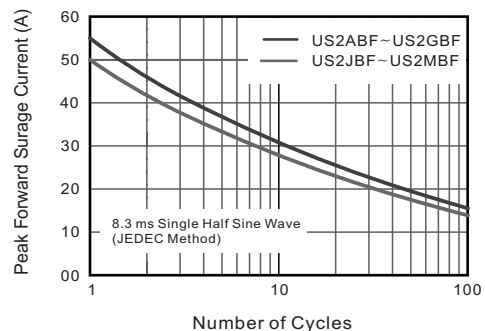
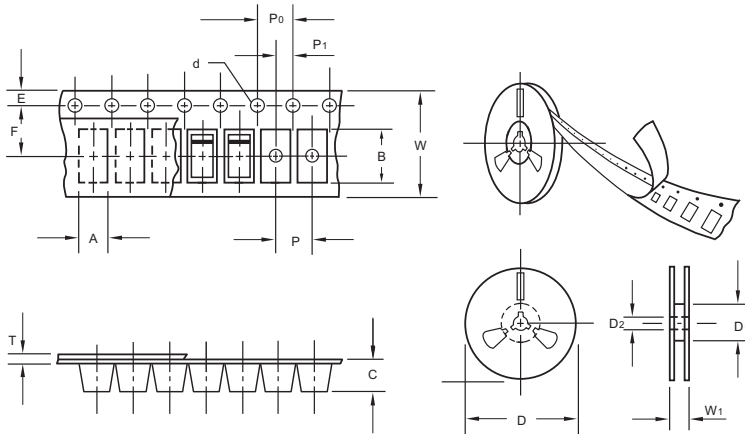


Fig.4 Maximum Non-Repetitive Peak Forward Surge Current



The curve above is for reference only.

Packing information



unit:mm

Item	Symbol	Tolerance	SMBF
Carrier width	A	0.1	3.81
Carrier length	B	0.1	5.61
Carrier depth	C	0.1	1.60
Sprocket hole	d	0.05	1.50
13" Reel outside diameter	D	2.0	330.00
13" Reel inner diameter	D ₁	min	50.00
Feed hole diameter	D ₂	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	5.50
Punch hole pitch	P	0.1	4.00
Sprocket hole pitch	P ₀	0.1	4.00
Embossment center	P ₁	0.1	2.00
Overall tape thickness	T	0.1	0.30
Tape width	W	0.3	12.00
Reel width	W ₁	1.0	12.30

Note: Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.

Reel packing

PACKAGE	REEL SIZE	REEL (pcs)	COMPONENT SPACING (mm)	BOX (pcs)	INNER BOX (mm)	REEL DIA, (mm)	CARTON SIZE (mm)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
SMBF	13"	5,000	4.0	10,000	190*190*41	330	365*365*360	80,000	14.0

Suggested Pad Layout



Symbol	Unit (mm)	Unit (inch)
A	2.54	0.100
B	1.8	0.071
C	4.8	0.189
D	3.0	0.118
E	6.6	0.260