SURFACE MOUNT SUPER FAST RECTIFIER

FEATURES

- Glass Passivated Die Construction
- Super-Fast Recovery Time For High Efficiency
- Low Forward Voltage Drop and High Current Capability
- Ideally Suited for Automated Assembly
- Plastic Material: UL Flammability Classification Rating 94V-0

SMB F

MECHANICAL DATA

- Case: SMBF Molded plastic
- Terminals: Pure tin plated, lead free
- Polarity: Indicated by cathode band
- Weight: 57mg (approx.)

Cathode

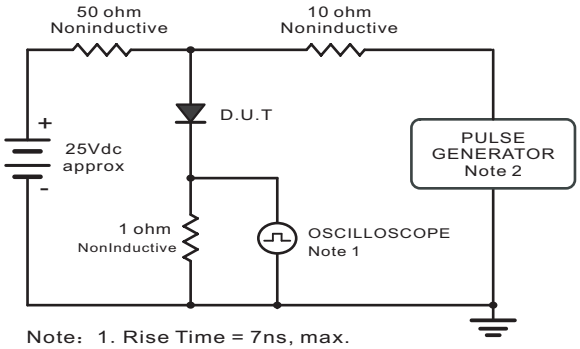
MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%.

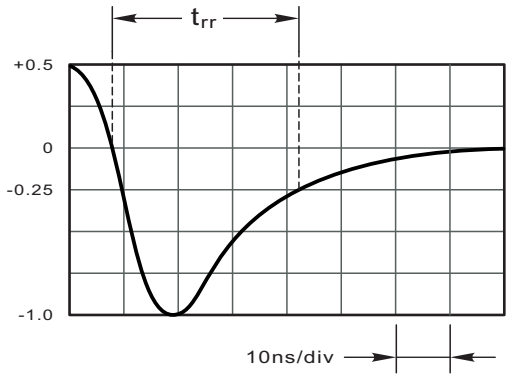
Parameter		Symbol	ES5ABF	ES5BBF	ES5DBF	ES5GBF	ES5JBF	Unit
Maximum Repetitive Peak Reverse Voltage		V_{RRM}	50	100	200	400	600	V
Maximum RMS Voltage		V_{RMS}	35	70	140	280	420	V
Maximum DC Blocking Voltage		V_{DC}	50	100	200	400	600	V
Maximum Average Forward Rectified Current at T_A =75 °C		$I_{F(AV)}$	5.0					A
Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC)		I_{FSM}	150			135		A
Maximum Instantaneous Forward Voltage at 5 A		V_F	1.0			1.25	1.7	V
Maximum DC Reverse Current at Rated DC Blocking Voltage	T_A = 25 °C T_A =100 °C	I_R	10.0 100.0					μA
Maximum reverse recovery time (NOTE1)		t_{rr}	35					nS
Typical Junction Capacitance (NOTE2)		C_J	95					pF
Maximum Thermal Resistance (NOTE3)		$R_{\theta JL}$	45					°C/W
Operating and Storage Temperature Range		$T_{J, TS}$	- 50 to + 150					°C

Note: 1.Reverse recovery condition I_F=0.5A,I_R=1.0A,Irr=0.25A
2.Measured at 1MHz and applied reverse voltage of 4.0V D.C.
3.P.C.B. mounted with 0.2x0.2”(5.0x5.0mm) copper pad areas

Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram



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



Set time Base for 10ns/div

Fig.2 Maximum Average Forward Current Rating

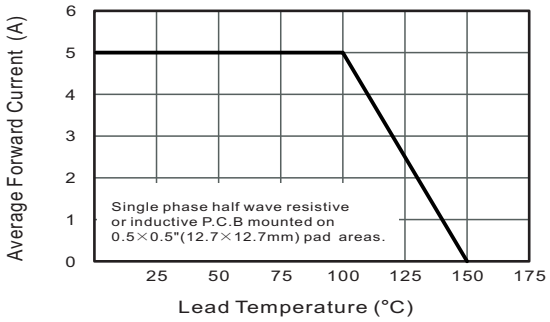


Fig.3 Typical Reverse Characteristics

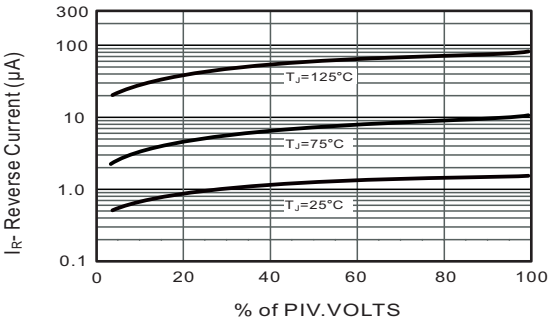


Fig.4 Typical Forward Characteristics

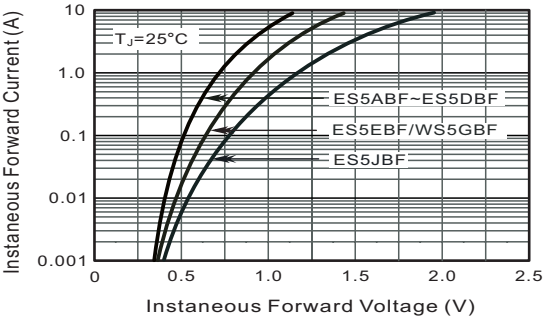


Fig.5 Typical Junction Capacitance

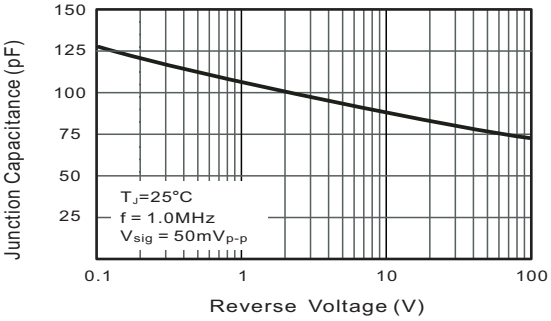
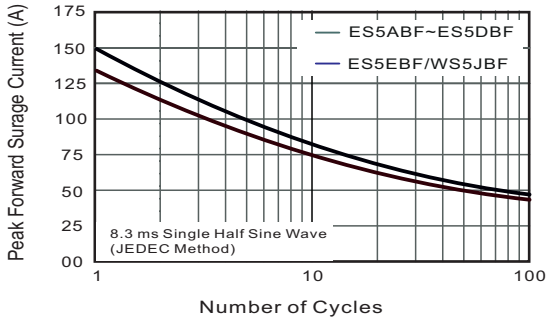
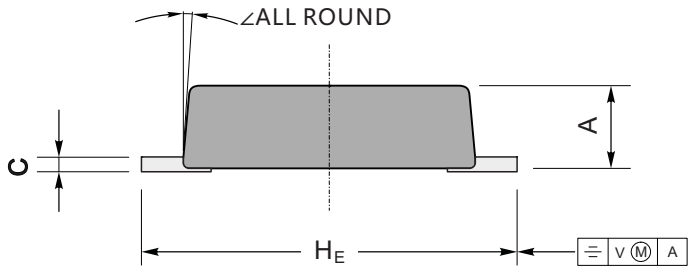
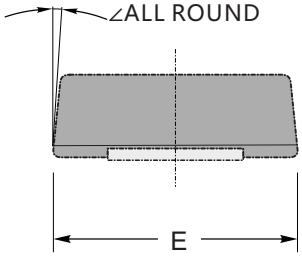


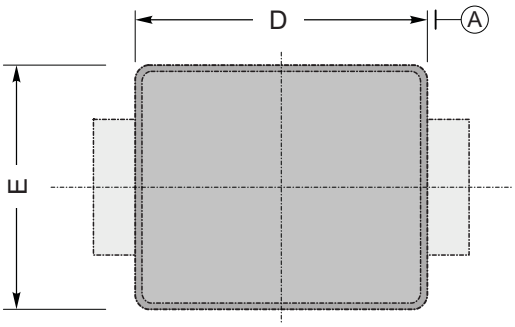
Fig.6 Maximum Non-Repetitive Peak Forward Surage Current



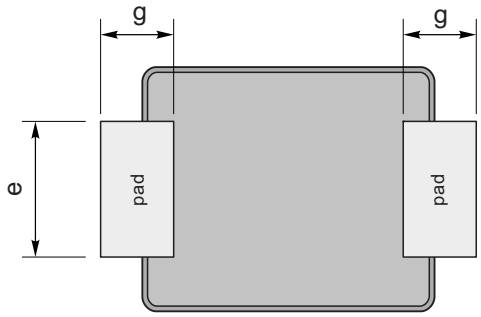
SMBF Package Outline Dimensions







Top View



Bottom View

UNIT		A	C	D	E	H_E	e	g	∠
mm	max	1.3	0.26	4.4	3.7	5.5	2.2	1.0	9°
	min	1.1	0.18	4.2	3.5	5.1	1.9		
mil	max	51	10	173	146	216	86	40	
	min	43	7	165	138	200	75		