Surface Mount Superfast Recovery Rectifier

Reverse Voltage – 50 to 600 V Forward Current –2 A

PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode

Simplified outline SMBF and symbol

FEATURES

- For surface mounted applications
- Low profile package
- Glass Passivated Chip Junction
- Superfast reverse recovery time
- Lead free in comply with EU RoHS 2011/65/EU directives

MECHANICAL DATA

- Case: SMBF
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 57mg / 0.002oz

Absolute Maximum Ratings and Characteristics

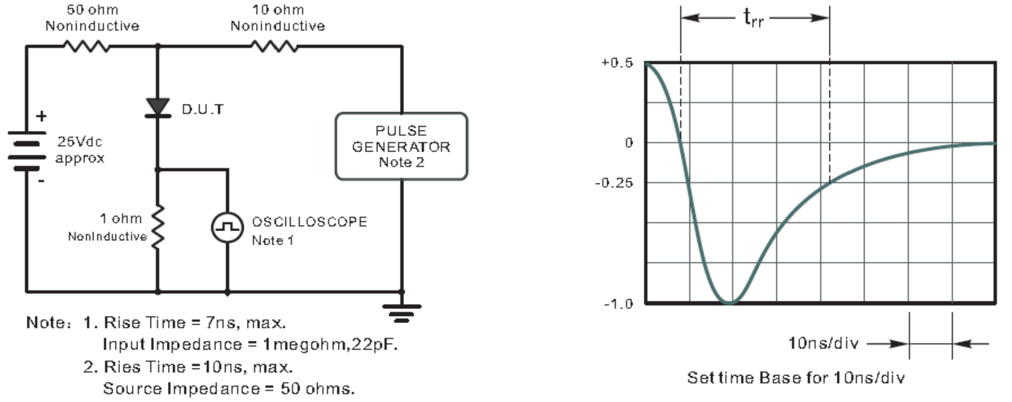
Ratings at 25 ℃ ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load.For capacitive load, derate current by 20%.

Parameter	Symbols	ES2ABF	ES2BBF	ES2CBF	ES2DBF	ES2EBF	ES2GBF	ES2JBF	Units
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	50	100	150	200	300	400	600	V
Maximum RMS voltage	V_{RMS}	35	70	105	140	210	280	420	V
Maximum DC Blocking Voltage	V_{DC}	50	100	150	200	300	400	600	V
Maximum Average Forward Rectified Current at T_L= 100 °C	$I_{F(AV)}$	2							A
Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method)	I_{FSM}	50							A
Maximum Forward Voltage at 2A	V_F	1				1.25		1.65	V
Maximum DC Reverse Current Ta = 25 °C at Rated DC Blocking Voltage Ta =125 °C	I_R	5 100							μA
Typical Junction Capacitance at V_R=4V, f=1MHz	C_j	45							pF
Maximum Reverse Recovery Time at I_F=0.5A, I_R=1A, I_{rr}=0.25A	t_{rr}	35							ns
Typical Thermal Resistance [2]	$R_{\theta JA}$	65							°C/W
Operating and Storage Temperature Range	T_j, T_{stg}	-55 ~ +150							°C

1）Measured with I_F = 0.5 A, I_R = 1 A, I_{rr} = 0.25 A

2）P.C.B. mounted with 0.5 X 0.5" (12.7 X 12.7 mm) copper pad areas.

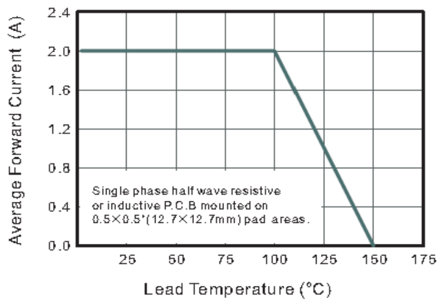
Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram



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



Single phase half wave resistive
or inductive P.C.B mounted on
0.5×0.5"(12.7×12.7mm) pad areas.

Fig.3 Typical Reverse Characteristics

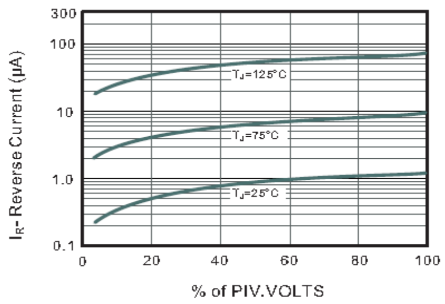


Fig.4 Typical Forward Characteristics

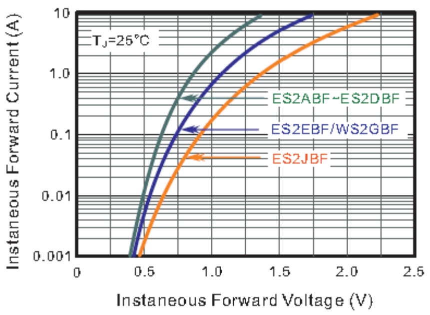


Fig.5 Typical Junction Capacitance

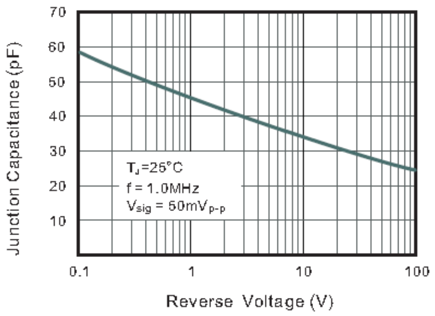
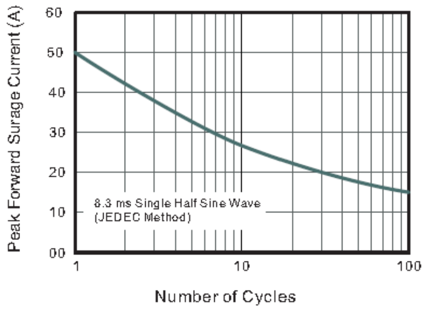


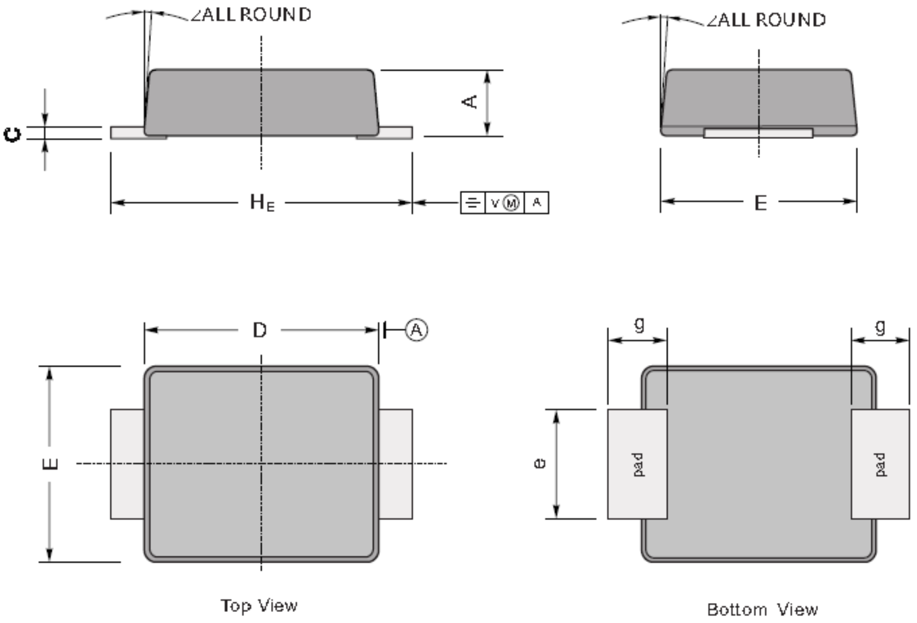
Fig.6 Maximum Non-Repetitive Peak Forward Surge Current



8.3 ms Single Half Sine Wave
(JEDEC Method)

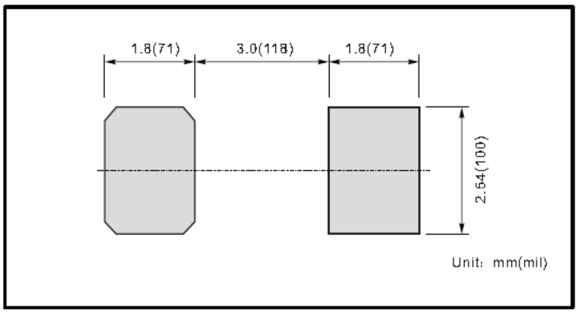
PACKAGE OUTLINE

Plastic surface mounted package; 2 leads SMBF



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		

The recommended mounting pad size



Marking

Type number	Marking code
ES2ABF	E2AB
ES2BBF	E2BB
ES2CBF	E2CB
ES2DBF	E2DB
ES2EBF	E2EB
ES2GBF	E2GB
ES2JBF	E2JB