

## Surface Mount Superfast Recovery Rectifier

Reverse Voltage – 50 to 600 V Forward Current – 5 A

### 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

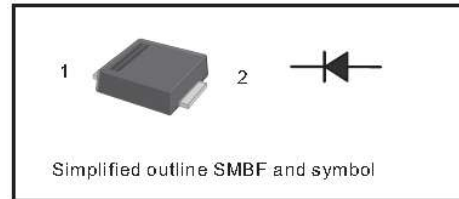
- Case: SMBF
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 57mg / 0.002oz

### Absolute Maximum Ratings and Characteristics

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

### PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode

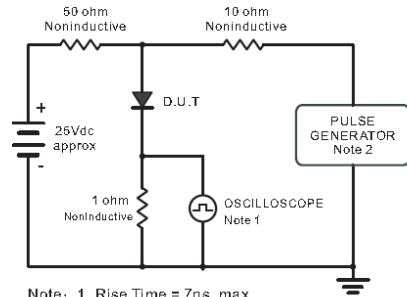


Parameter	Symbols	ES5ABF	ES5BF	ES5CBF	ES5DBF	ES5EBF	ES5GBF	ES5JBF	Units
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	50	100	150	200	300	400	600	V
Maximum RMS voltage	$V_{RMS}$	35	70	105	140	210	280	420	V
Maximum DC Blocking Voltage	$V_{DC}$	50	100	150	200	300	400	600	V
Maximum Average Forward Rectified Current at $T_L = 100^\circ\text{C}$	$I_{F(AV)}$	5							A
Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method)	$I_{FSM}$	150				135			A
Maximum Forward Voltage at 5A	$V_F$	1.0				1.25		1.7	V
Maximum DC Reverse Current at Rated DC Blocking Voltage $T_a = 25^\circ\text{C}$ $T_a = 125^\circ\text{C}$	$I_R$					10 100			$\mu\text{A}$
Typical Junction Capacitance	$C_j$					95			pF
Maximum Reverse Recovery Time at $I_F = 0.5\text{A}$ , $I_R = 1\text{A}$ , $I_{rr} = 0.25\text{A}$	$t_{rr}$					35			ns
Typical Thermal Resistance <sup>2)</sup>	$R_{\theta JA}$					45			$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	$T_J, T_{stg}$					-55 ~ +150			$^\circ\text{C}$

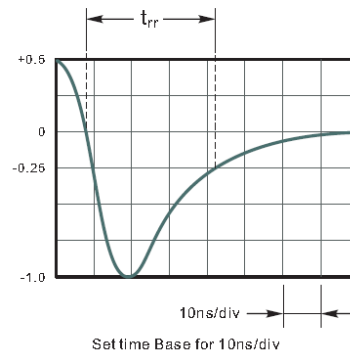
1 ) Measured with  $I_F = 0.5\text{ A}$ ,  $I_R = 1\text{ A}$ ,  $I_{rr} = 0.25\text{ A}$

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

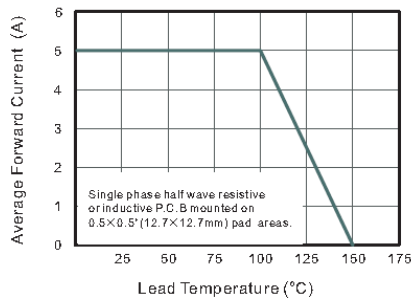
**Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram**



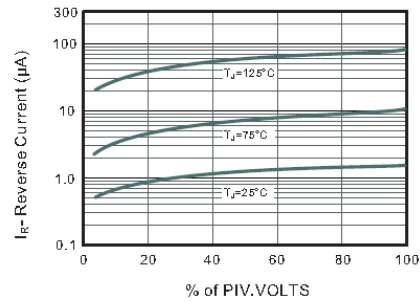
Note: 1. Rise Time = 7ns, max.  
Input Impedance = 1megohm, 22pF.  
2. Rise Time = 10ns, max.  
Source Impedance = 50 ohms.



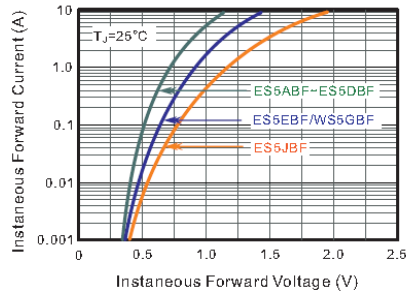
**Fig.2 Maximum Average Forward Current Rating**



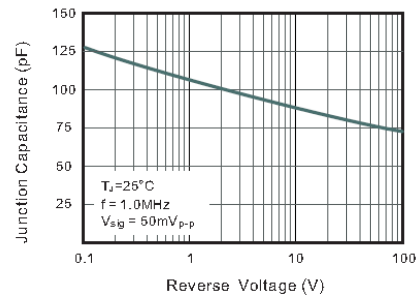
**Fig.3 Typical Reverse Characteristics**



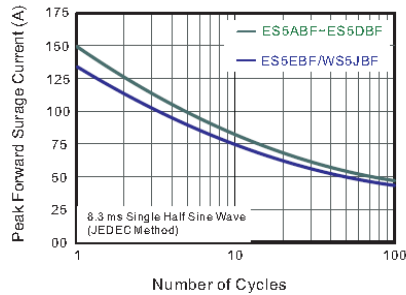
**Fig.4 Typical Forward Characteristics**



**Fig.5 Typical Junction Capacitance**



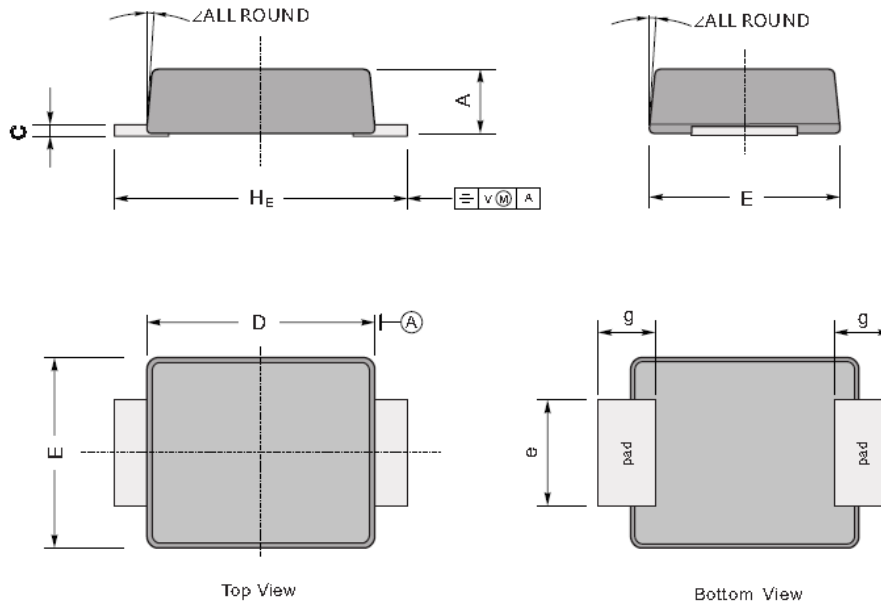
**Fig.6 Maximum Non-Repetitive Peak Forward Surge Current**



## PACKAGE OUTLINE

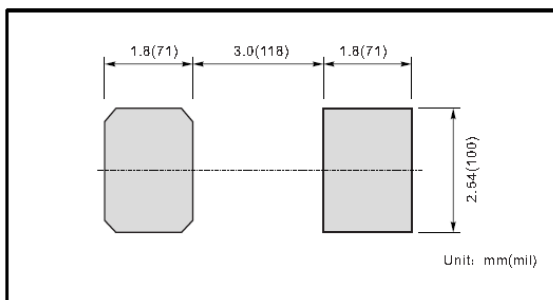
Plastic surface mounted package; 2 leads

SMBF



UNIT		A	C	D	E	$H_E$	e	g	$\angle$
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
ES5ABF	E5AB
ES5BBF	E5BB
ES5CBF	E5CB
ES5DBF	E5DB
ES5EBF	E5EB
ES5GBF	E5GB
ES5JBF	E5JB