

**Surface Mount Superfast Recovery Rectifier**

**Reverse Voltage – 50 to 600 V**

**Forward Current – 5 A**

**FEATURES**

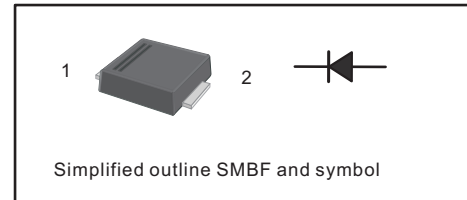
- For surface mounted applications
- Low profile package
- Glass Passivated Chip Junction
- Superfast reverse recovery time
- Lead free in comply with EU RoHS 2011/65/EU directives

**MECHANICAL DATA**

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

**PINNING**

PIN	DESCRIPTION
1	Cathode
2	Anode



**Absolute Maximum Ratings and Characteristics**

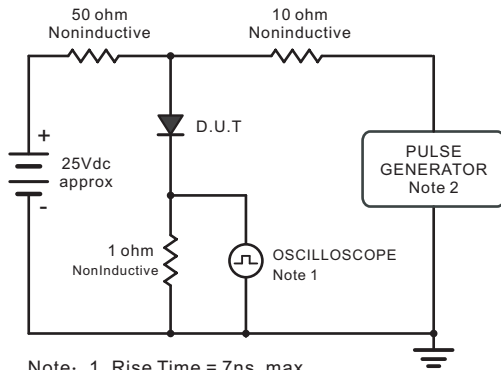
Ratings at 25 °C ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%.

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 $T_L = 100\text{ °C}$	$I_{F(AV)}$	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 $T_a = 25\text{ °C}$ $T_a = 125\text{ °C}$	$I_R$	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								$^{\circ}\text{C/W}$
Operating and Storage Temperature Range	$T_j, T_{stg}$	-55 ~ +150							$^{\circ}\text{C}$	

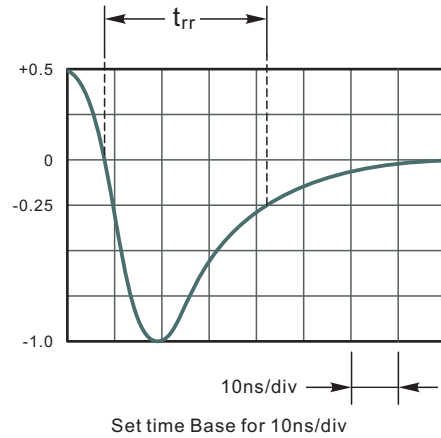
1) Measured with  $I_F = 0.5\text{ A}$ ,  $I_R = 1\text{ A}$ ,  $I_{rr} = 0.25\text{ A}$

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

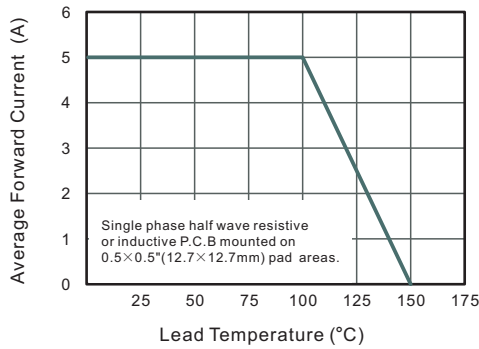
**Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram**



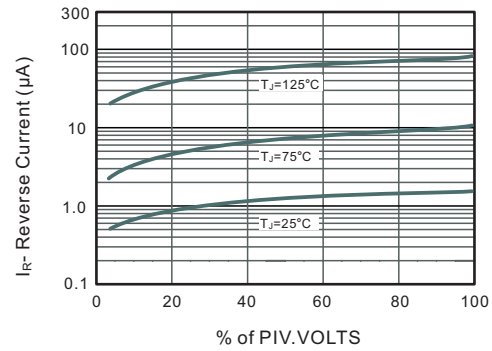
Note: 1. Rise Time = 7ns, max.  
Input Impedance = 1megohm, 22pF.  
2. Rise Time = 10ns, max.  
Source Impedance = 50 ohms.



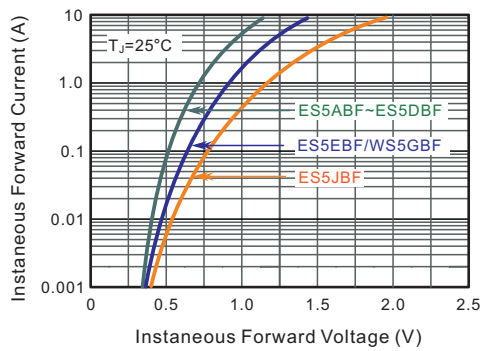
**Fig.2 Maximum Average Forward Current Rating**



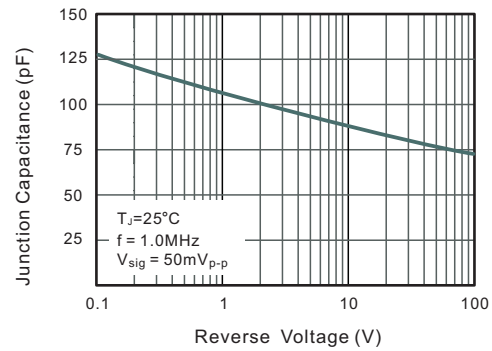
**Fig.3 Typical Reverse Characteristics**



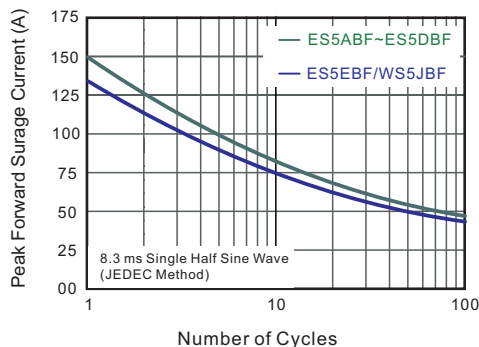
**Fig.4 Typical Forward Characteristics**



**Fig.5 Typical Junction Capacitance**



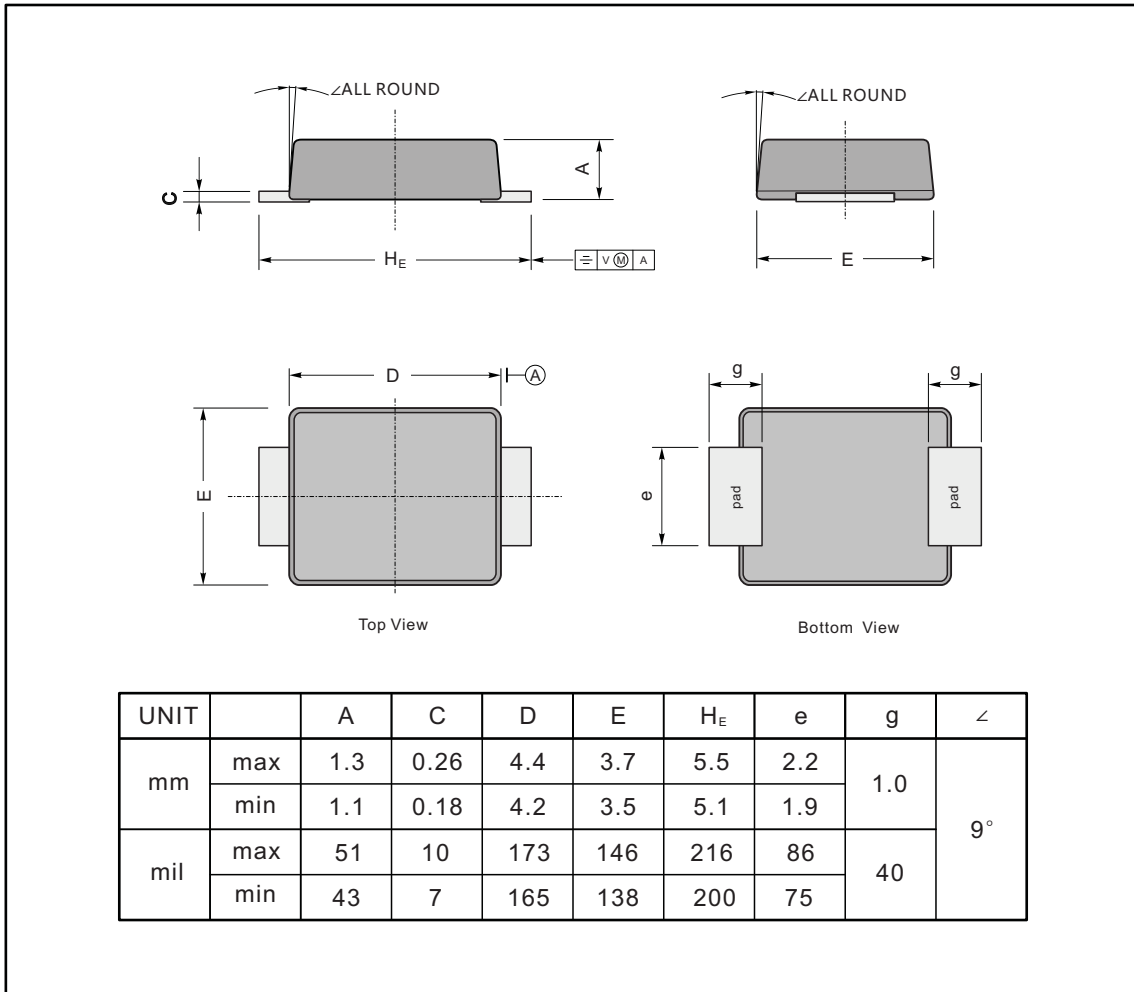
**Fig.6 Maximum Non-Repetitive Peak Forward Surge Current**



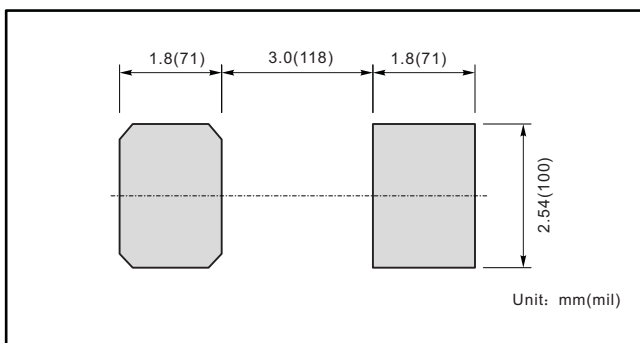
**PACKAGE OUTLINE**

Plastic surface mounted package; 2 leads

SMBF



**The recommended mounting pad size**



**Marking**

Type number	Marking code
ES5ABF	E5AB
ES5BBF	E5BB
ES5CBF	E5CB
ES5DBF	E5DB
ES5EBF	E5EB
ES5GBF	E5GB
ES5JBF	E5JB