

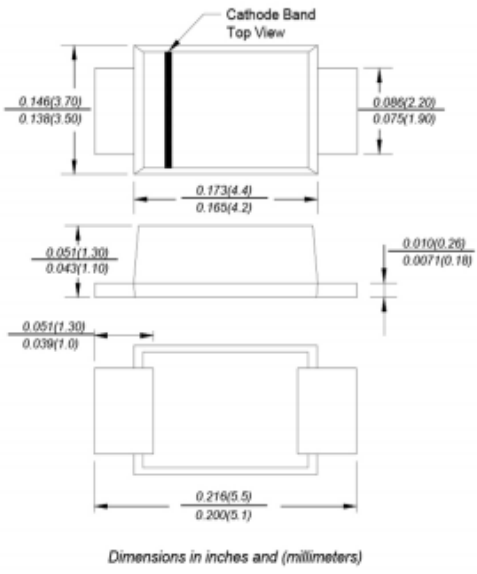


# THE DATASHEET OF ES5JBF

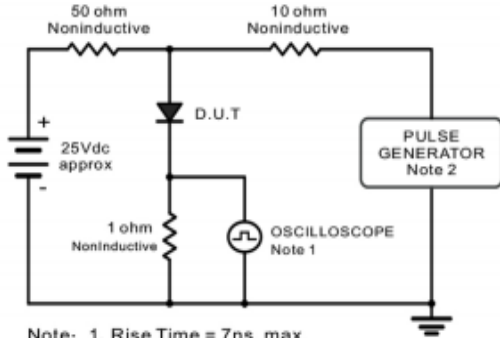


## SURFACE MOUNT SUPERFAST RECOVERY RECTIFIER

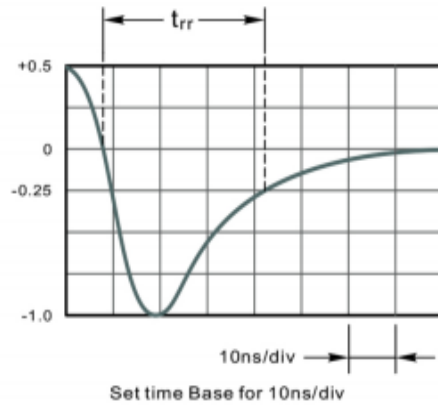
Reverse Voltage - 50 to 600 Volts Forward Current - 5.0 Amperes

SMBF	FEATURES							
 <p style="text-align: center;">Dimensions in inches and (millimeters)</p>	<ul style="list-style-type: none"> <li>◆ For surface mounted applications</li> <li>◆ Low profile package</li> <li>◆ Glass Passivated Chip Junction</li> <li>◆ Superfast reverse recovery time</li> <li>◆ Lead free in comply with EU RoHS 2011/65/EU directives</li> </ul>							
	<h3>MECHANICAL DATA</h3> <p> <b>Case:</b> JEDEC SMBF molded plastic body  <b>Terminals:</b> leads solderable per MIL-STD-750, Method 2026  <b>Mounting Position:</b> Any  <b>Weight:</b> 57mg/0.002oz         </p>							
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%.								
TWGMC Catalog Number	SYMBOLS	ES5ABF	ES5BBF	ES5DBF	ES5GBF	ES5JBF	UNITS	
Marking code								
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	VOLTS	
Maximum RMS voltage	$V_{RMS}$	35	70	140	280	420	VOLTS	
Maximum DC blocking voltage	$V_{DC}$	50	100	200	400	600	VOLTS	
Maximum average forward rectified current at $T_L=100^\circ\text{C}$	$I_{(AV)}$	5.0						Amps
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	150			135			Amps
Maximum instantaneous forward voltage at 5.0A	$V_F$	1.0			1.25	1.7		Volts
Maximum DC reverse current $T_A=25^\circ\text{C}$ at rated DC blocking voltage $T_A=125^\circ\text{C}$	$I_R$	10.0 100.0						$\mu\text{A}$
Maximum reverse recovery time (NOTE 1)	$t_{rr}$	35						ns
Typical junction capacitance (NOTE 2)	$C_J$	95						pF
Typical thermal resistance (NOTE 3)	$R_{\theta JA}$	45						$^\circ\text{C/W}$
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +150						$^\circ\text{C}$
<b>Note:</b> 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 0.5x0.5" (12.7x12.7mm) copper pad areas								

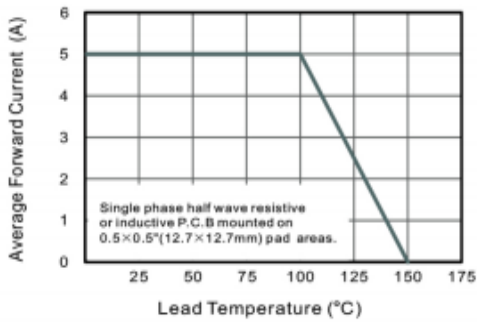
**Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram**



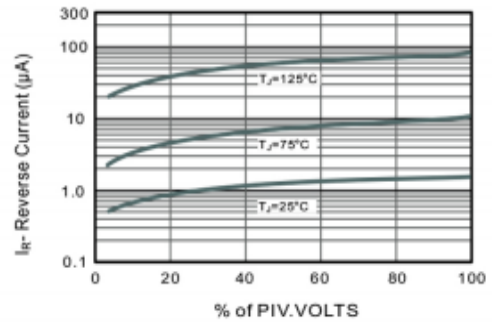
Note: 1. Rise Time = 7ns, max.  
Input Impedance = 1 megohm, 22pF.  
2. Rise Time = 10ns, max.  
Source Impedance = 50 ohms.



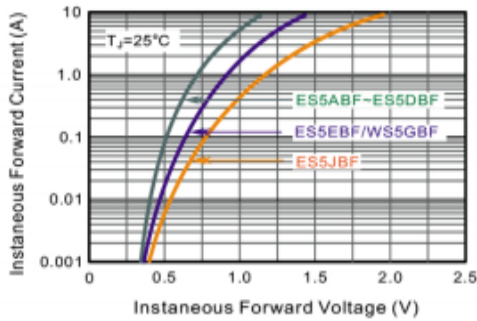
**Fig.2 Maximum Average Forward Current Rating**



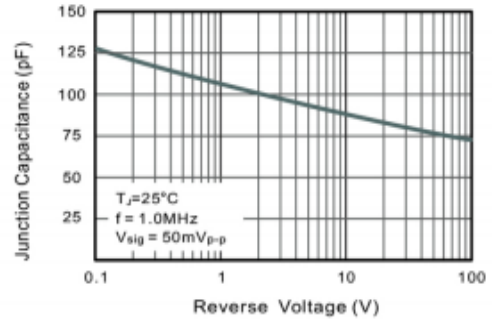
**Fig.3 Typical Reverse Characteristics**



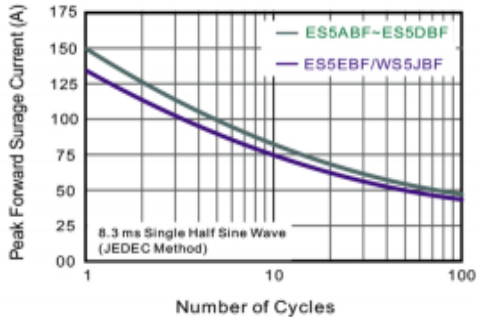
**Fig.4 Typical Forward Characteristics**



**Fig.5 Typical Junction Capacitance**



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



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