

## SURFACE MOUNT SUPERFAST RECOVERY RECTIFIER

Reverse Voltage - 50 to 600 Volts Forward Current - 3.0 Amperes

<p style="text-align: center;"><b>SMBF</b></p> <p style="text-align: center; font-size: small;">Dimensions in inches and (millimeters)</p>	<p style="text-align: center;"><b>FEATURES</b></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>
<p><b>MECHANICAL DATA</b></p> <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

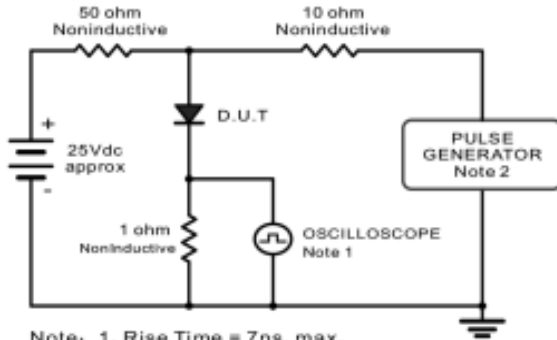
Ratings at 25°C ambient temperature unless otherwise specified.  
 Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.

TWGMC Catalog Number	SYMBOLS	ES3ABF	ES3BBF	ES3DBF	ES3GBF	ES3JBF	UNITS
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 $T_L=100^\circ\text{C}$	$I_{(AV)}$	3.0					Amps
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	100					Amps
Maximum instantaneous forward voltage at 3.0A	$V_F$	1.0		1.25		1.7	Volts
Maximum DC reverse current $T_A=25^\circ\text{C}$ at rated DC blocking voltage $T_A=125^\circ\text{C}$	$I_R$	5.0 100.0					$\mu\text{A}$
Maximum reverse recovery time (NOTE 1)	$t_{rr}$	35					ns
Typical junction capacitance (NOTE 2)	$C_J$	45.0					pF
Typical thermal resistance (NOTE 3)	$R_{\theta JA}$	55.0					$^\circ\text{C/W}$
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +150					$^\circ\text{C}$

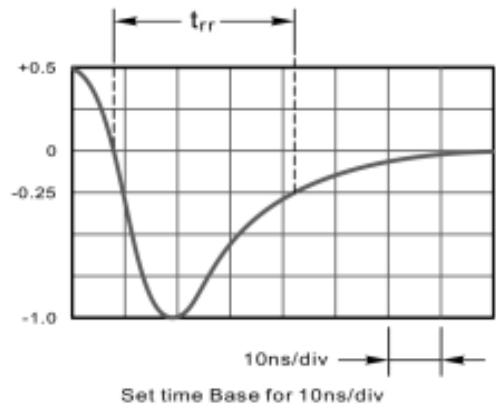
**Note:** 1. Reverse recovery condition  $I_F=0.5\text{A}, I_R=1.0\text{A}, I_{rr}=0.25\text{A}$   
 2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.  
 3. P.C.B. mounted with 0.5x0.5" (12.7x12.7mm) copper pad areas

**RATINGS AND CHARACTERISTIC CURVES ES3ABF THRU ES3JBF**

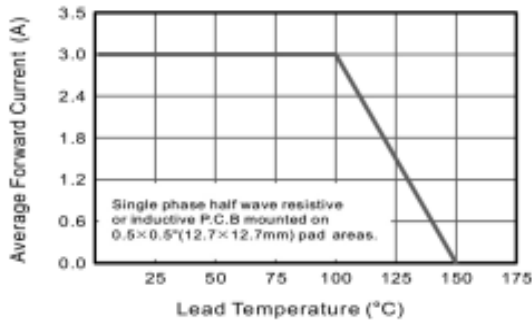
**Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram**



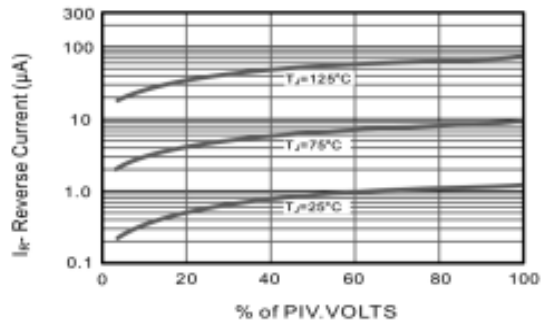
Note: 1. Rise Time = 7ns, max.  
Input Impedance = 1megohm, 22pF.  
2. Rise Time = 10ns, max.  
Source Impedance = 50 ohms.



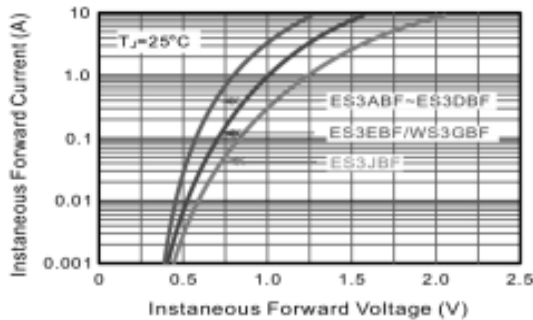
**Fig.2 Maximum Average Forward Current Rating**



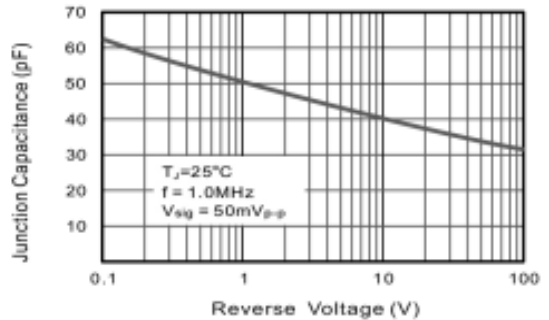
**Fig.3 Typical Reverse Characteristics**



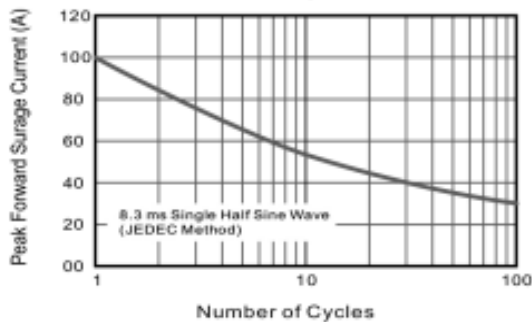
**Fig.4 Typical Forward Characteristics**



**Fig.5 Typical Junction Capacitance**



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



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