

Super-Fast Recovery Rectifier

ES3HBF - ES3JBF

Features

- Low forward voltage drop
- High forward surge current capability
- Low-profile SMD ideal for automated manufacturing
- RoHS compliant with Halogen-free



Mechanical Data

- Case: SMBF molded plastic
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Solder plated; solderable per MIL- STD-202, Method 208
- Polarity: Color band denotes cathode end

Maximum Ratings (@T_A = 25°C unless otherwise specified)

Parameter	Symbol	ES3HBF	ES3JBF	Unit
Peak Repetitive Reverse Voltage	V _R RM	500	600	V
RMS Reverse Voltage	V _R RMS	350	420	V
DC Blocking Voltage	V _D C	500	600	V
Maximum Average Forward Output Current	I _{F(AV)}	3.0		A
Peak Forward Surge Current, 8.3ms Single Half Sine wave	I _F SM	100		A

Thermal Characteristics

Parameter	Symbol	ES3HB	ES3JB	Unit
Typical Thermal Resistance *1	R _θ JA	65		°C/W
	R _θ JC	16		
	R _θ JL	15		
Operating Junction Temperature Range	T _J	-55 ~ +150		°C
Storage Temperature Range	T _{STG}	-55 ~ +150		°C

Note *1: Device mounted on p.c.b. with 10 mm x 20 mm x 0.1mm copper pad area

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Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Typ.	Max.	Unit	
Maximum Instantaneous Forward Voltage	V_F	$I_F = 3.0\text{A}$	-	1.7	V	
Maximum Reverse Current	I_R	Rated	@ $T_A = 25^\circ\text{C}$	-	10	μA
		V_R	@ $T_A = 125^\circ\text{C}$	-	500	
Maximum Reverse Recovery Time	t_{rr}	$I_F = 0.5\text{A}$, $I_{RM} = 1\text{A}$, $I_{R(\text{REC})} = 0.25\text{A}$	-	35	ns	

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Ratings and Characteristic Curves (@T_A = 25°C unless otherwise noted)

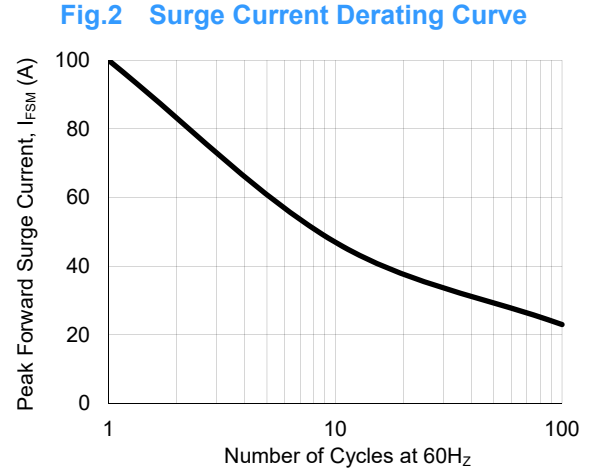
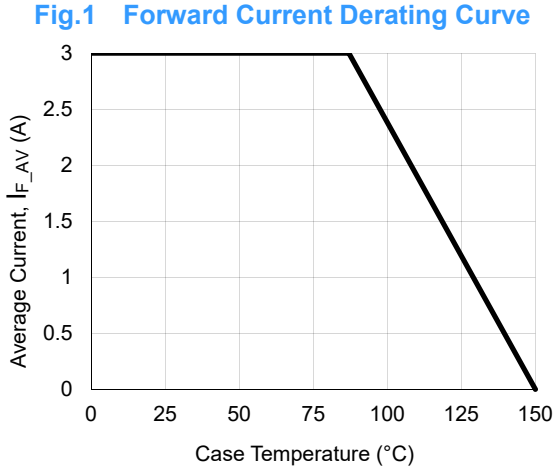


Fig.3 Typical Forward Voltage Characteristics

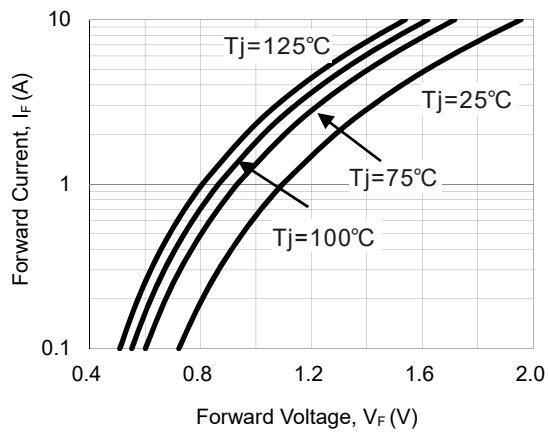
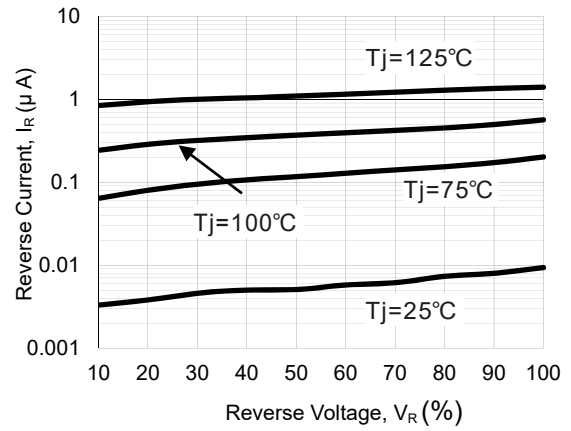


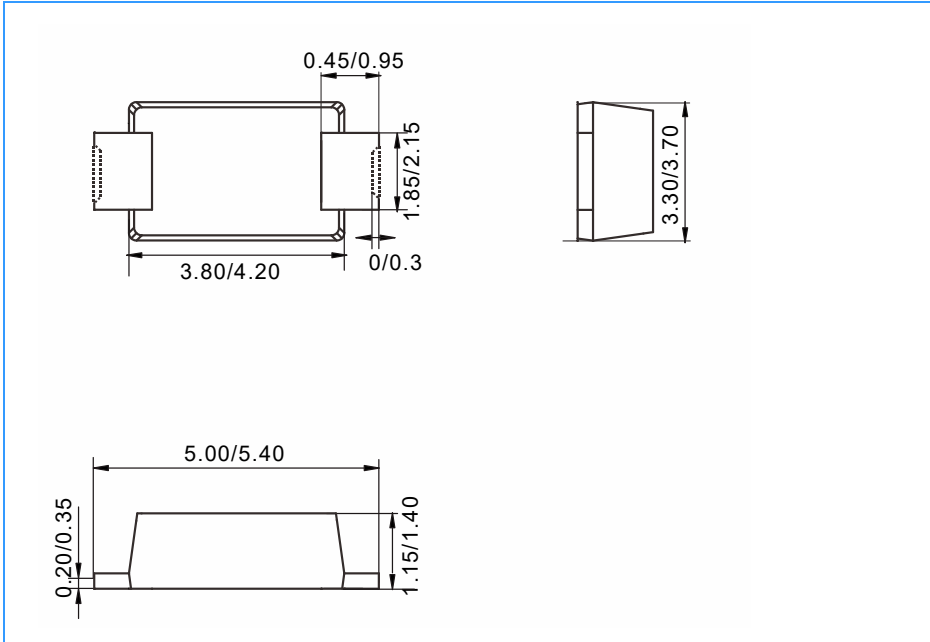
Fig.4 Typical Reverse Characteristics



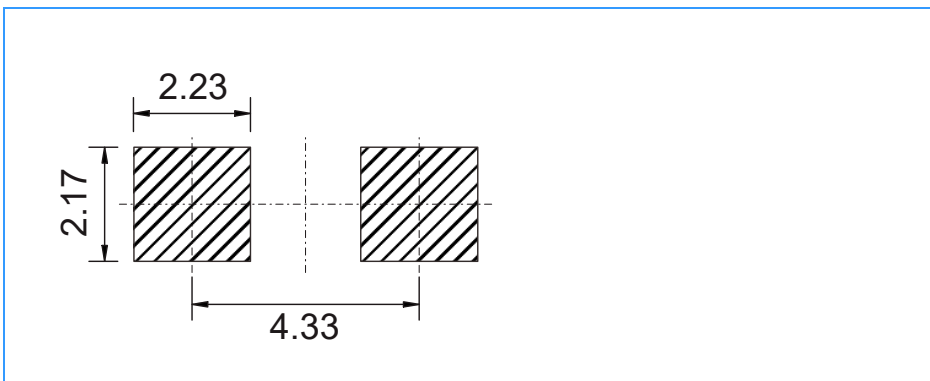
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Package Outline Dimensions (unit: mm)



Mounting Pad Layout (unit: mm)



Ordering Information

Part Number	Marking	Package	Shipping Quantity
ES3HBF	ES3HBF	SMBF	4000 / Tape & Reel
ES3JBF	ES3JBF	SMBF	4000 / Tape & Reel