

Super-Fast Recovery Rectifier

ES3HCF - ES3JCF

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: SMCF 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	ES3HCF	ES3JCF	Unit
Peak Repetitive Reverse Voltage	V _{RRM}	500	600	V
RMS Reverse Voltage	V _{RMS}	350	420	V
DC Blocking Voltage	V _{DC}	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 _{FSM}	100		A

Thermal Characteristics

Parameter	Symbol	ES3HCF	ES3JCF	Unit
Typical Thermal Resistance *1	R _{θJA}	27		°C/W
	R _{θJC}	10		
	R _{θJL}	4		
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}	$I_F = 0.5\text{A}$, $I_{RM} = 1\text{A}$, $I_{R(REC)} = 0.25\text{A}$	-	35	ns	

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Ratings and Characteristic Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.1 Forward Current Derating Curve

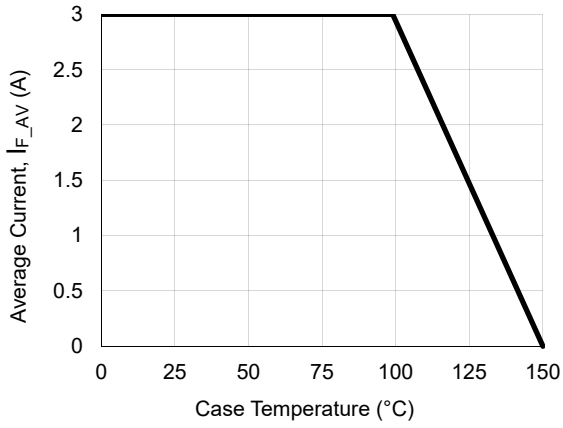


Fig.2 Surge Current Derating Curve

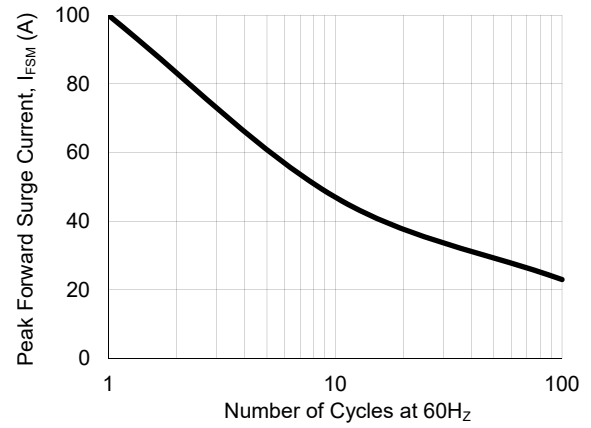


Fig.3 Typical Forward Voltage Characteristics

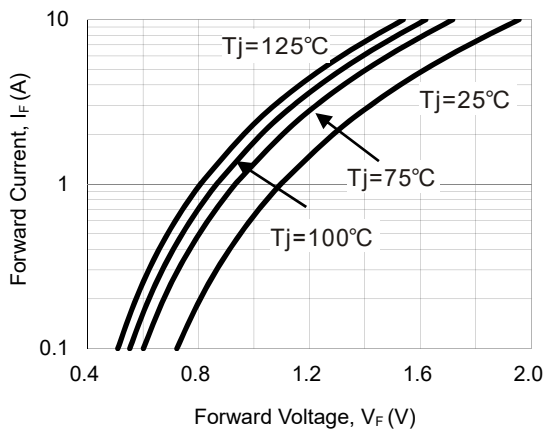
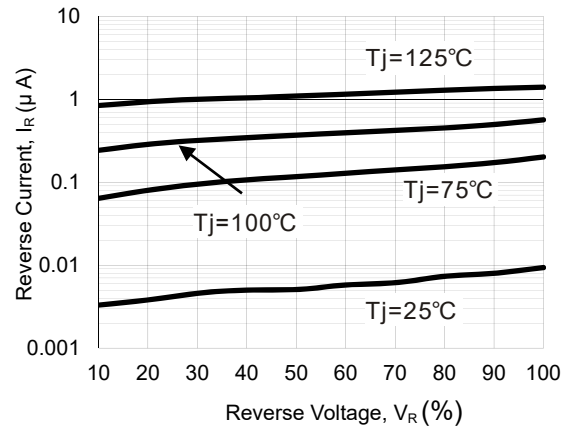


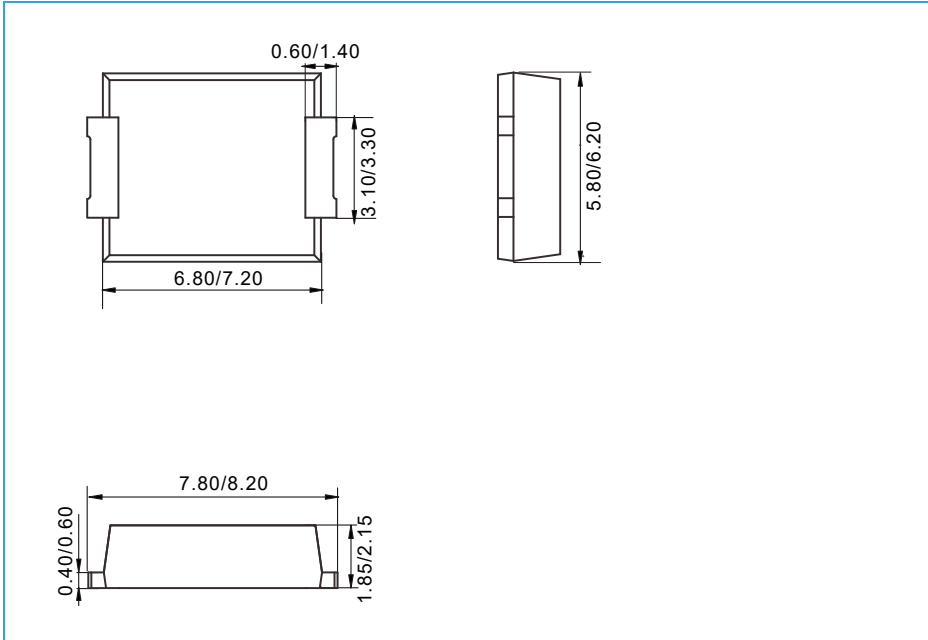
Fig.4 Typical Reverse Characteristics



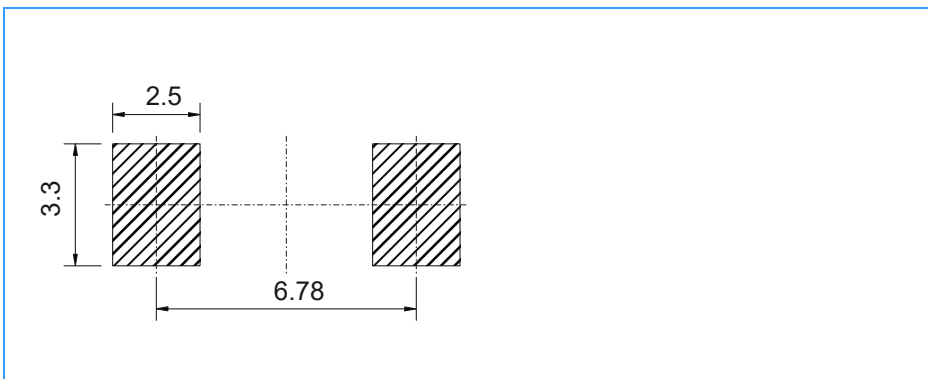
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Package Outline Dimensions (unit: mm)



Mounting Pad Layout (unit: mm)



Ordering Information

Part Number	Marking	Package	Shipping Quantity
ES3HCF	ES3HCF	SMCF	3000 / Tape & Reel
ES3JCF	ES3JCF	SMCF	3000 / Tape & Reel