

Super-Fast Rectifiers

ES5HCF--ES5JCF

Features

- For surface mounted applications
- Ideal for automated placement
- Low forward voltage drop
- High surge current capability
- RoHS Compliant



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)

Characteristic	Symbol	ES5HCF	ES5JCF	Units
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)}	5.0		A
Peak forward surge current, 8.3ms single half-sine-wave	I _{FSM}	150		A

Thermal Characteristics

Parameter	Symbol	ES5HCF	ES5JCF	Units
Typical thermal resistance (Note 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 PCB with 10 mm x 20 mm x 0.1mm copper pad areas

Super-Fast Rectifiers**ES5HCF--ES5JCF****Electrical Characteristics** (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions		Typ.	Max.	Units
Maximum instantaneous forward voltage	V_F	$I_F=5.0\text{A}$	@ $T_A=25^\circ\text{C}$	--	1.7	V
Maximum Reverse current	I_R	Rated V_R ,	@ $T_A=25^\circ\text{C}$	--	5	μA
			@ $T_A=125^\circ\text{C}$	--	200	
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

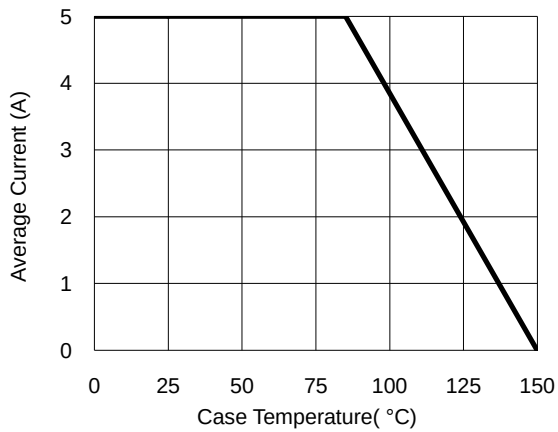


Fig.2- Surge Current Derating Curve

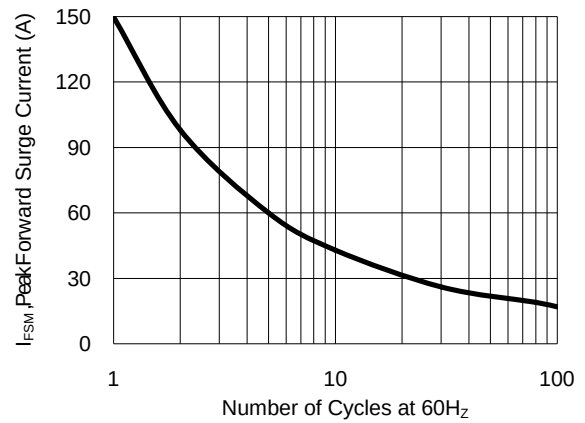


Fig.3- Typical Forward Voltage Characteristic

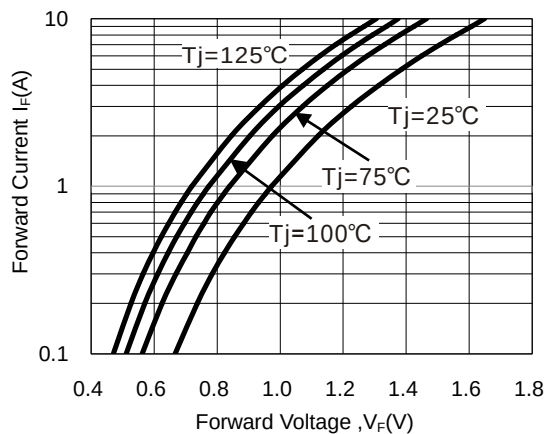
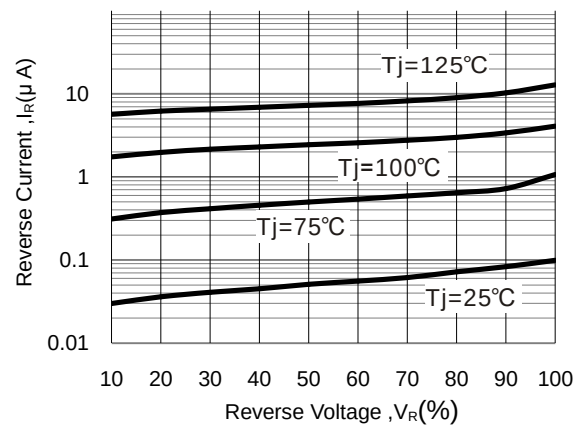


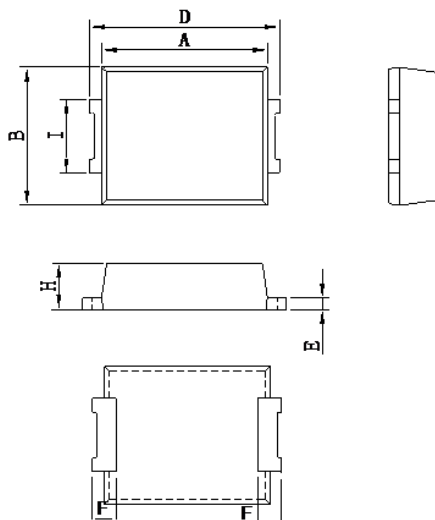
Fig.4- Typical Reverse Characteristic



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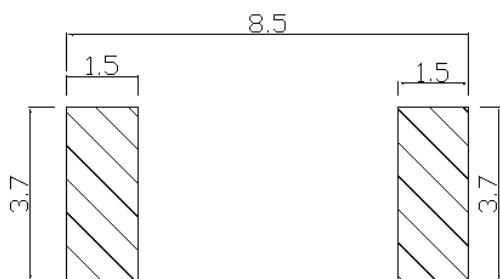
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Package Outline Dimensions(unit:mm)



SMCF		
Dim	Min	Max
A	6.8	7.2
B	5.8	6.2
D	7.8	8.2
E	0.4	0.6
F1	0.6	1.4
H	1.85	2.15
I	3.1	3.3
All Dimensions in mm		

Mounting Pad Layout(unit:mm)



Ordering Information

Part No.	Marking	Package	Shipping
ES5HCF	ES5HCF	SMCF	3000 / Tape&Reel
ES5JCF	ES5JCF	SMCF	3000 / Tape&Reel