

Fast Recovery Rectifier

SOF1F1 - SOF1F4

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: SOD-123F 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 (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	SOF1F1	SOF1F2	SOF1F4	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	100	200	400	V
RMS Reverse Voltage	V_{RMS}	70	140	280	V
DC Blocking Voltage	V_{DC}	100	200	400	V
Maximum Average Forward Output Current	I_{F_AV}	1.0			A
Peak Forward Surge Current, 8.3ms Single Half Sine wave	I_{FSM}	30			A

Thermal Characteristics

Parameter	Symbol	SOF1F1	SOF1F2	SOF1F4	Unit
Typical Thermal Resistance *1	R _{θJA}	85			°C/W
	R _{θJC}	23			
	R _{θJL}	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	$I_F=1.0\text{A}$		-	1.3	V
Maximum Reverse Current	I_R	Rated V_R	@ $T_A=25^\circ\text{C}$	-	5	μA
			@ $T_A=125^\circ\text{C}$	-	50	
Maximum Reverse Recovery Time	t_{rr}	$I_F=0.5\text{A}, I_{RM}=1\text{A}, I_{R(REC)}=0.25\text{A}$		-	150	ns

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

Fig. 1 Forward Current Derating Curve

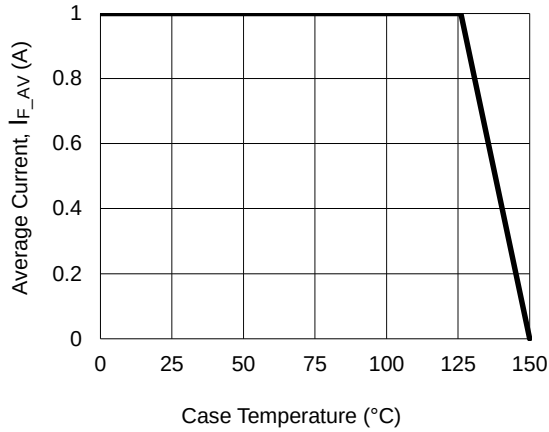


Fig. 2 Surge Current Derating Curve

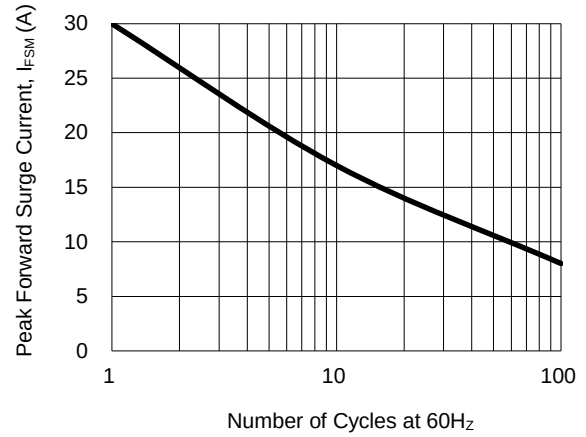


Fig. 3 Typical Forward Voltage Characteristics

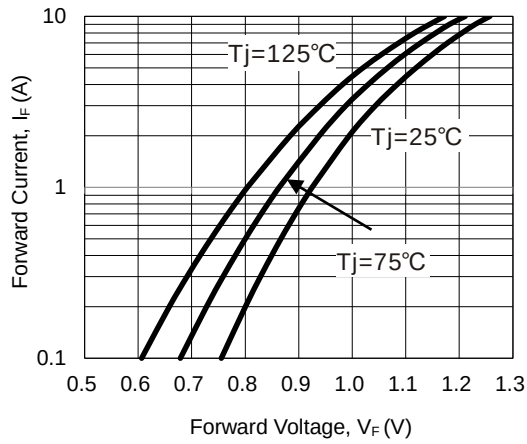
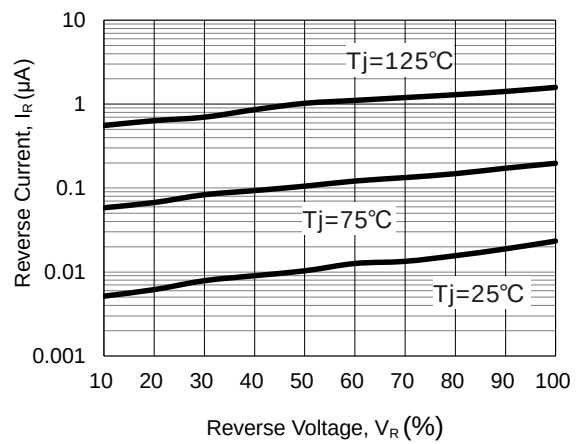


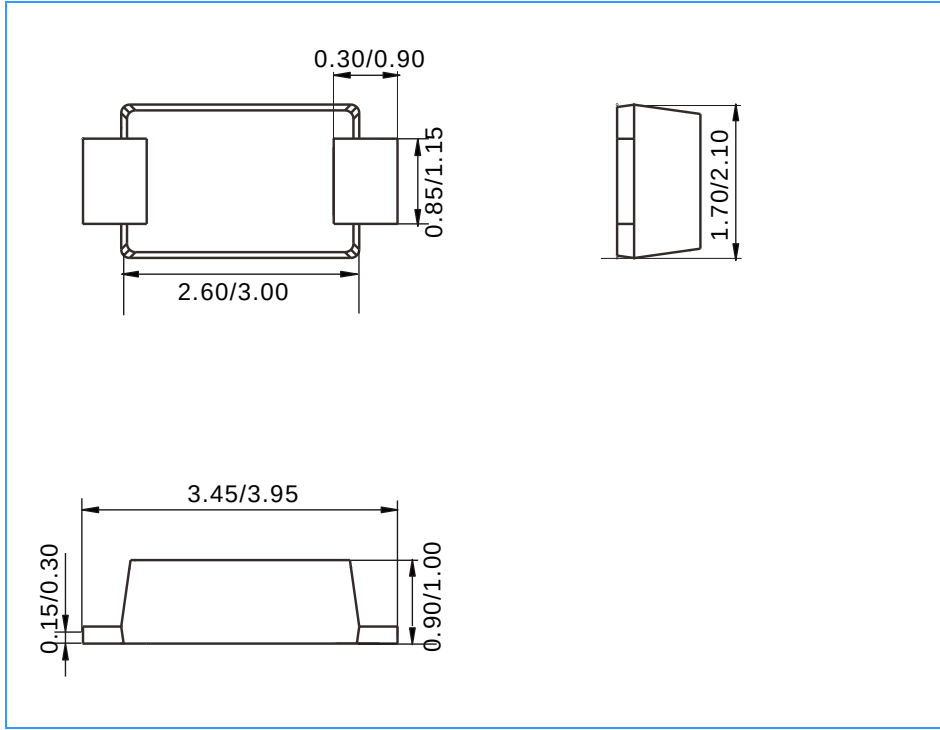
Fig. 4 Typical Reverse Characteristics



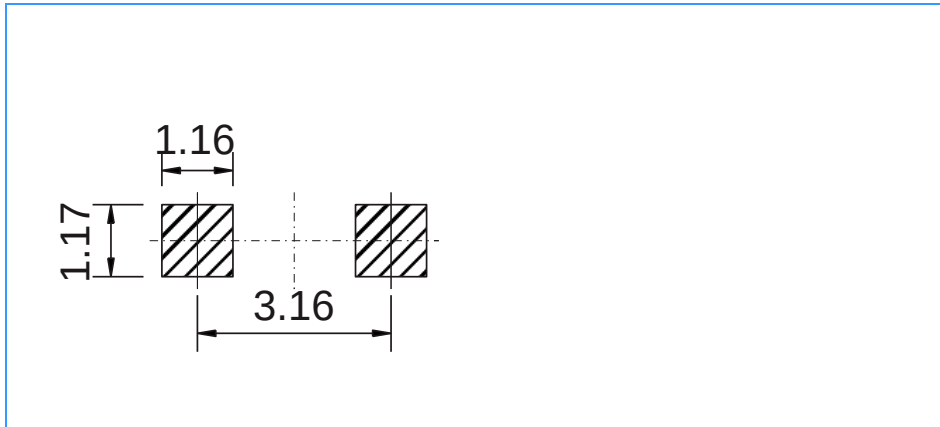
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Package Outline Dimensions (Unit: mm)



Mounting Pad Layout (Unit: mm)



Ordering Information

Part Number	Marking	Package	Shipping Quantity
SOF1F1	FB	SOD-123F	10000 / Tape & Reel
SOF1F2	FD	SOD-123F	10000 / Tape & Reel
SOF1F4	FG	SOD-123F	10000 / Tape & Reel