

Fast Recovery Rectifier

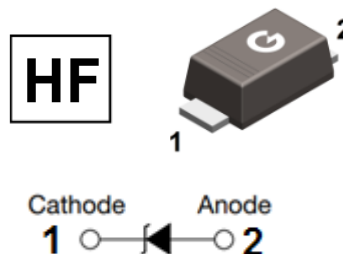
SOD1F6

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-123FL 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	SOD1F6	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	600	V
RMS Reverse Voltage	V_{RMS}	420	V
DC Blocking Voltage	V_{DC}	600	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	SOD1F6	Unit
Typical Thermal Resistance *1	$R_{\theta JA}$	85	$^\circ\text{C/W}$
	$R_{\theta JC}$	23	
	$R_{\theta JL}$	15	
Operating Junction Temperature Range	T_J	- 55 ~ + 150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	- 55 ~ + 150	$^\circ\text{C}$

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		Min.	Typ.	Max.	Unit
Reverse Breakdown Voltage	$V_{(BR)}$	$I_R = 2\mu\text{A}$		600	-	-	V
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}	$I_F = 0.5\text{A}, I_{RM} = 1\text{A}, I_{R(REC)} = 0.25\text{A}$		-	-	250	ns

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

Fig. 1 Forward Current Derating Curve

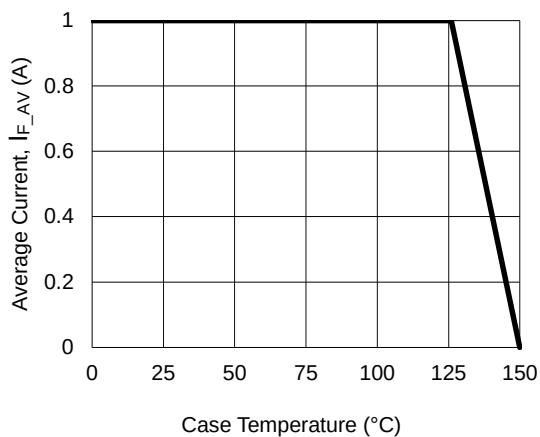


Fig. 2 Surge Current Derating Curve

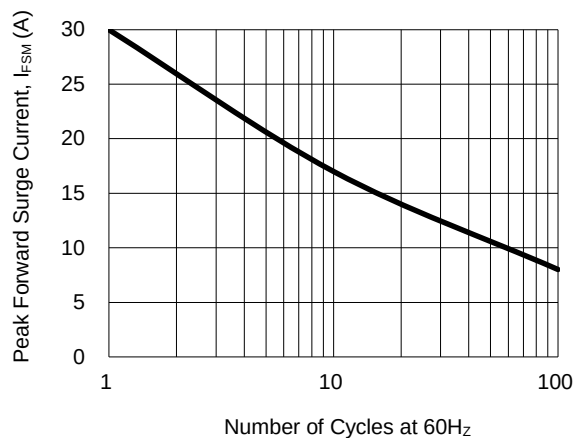


Fig. 3 Typical Forward Voltage Characteristics

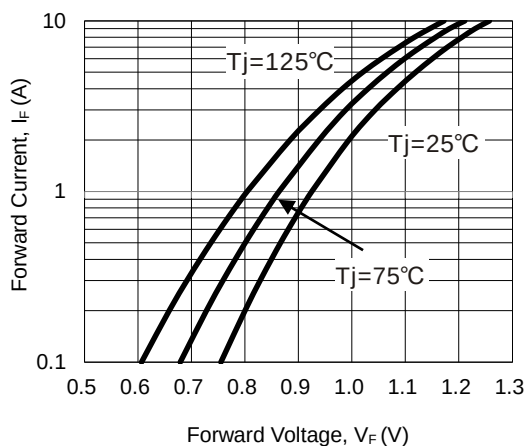
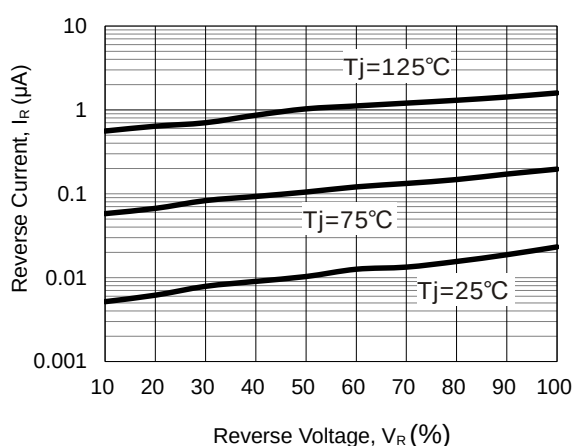


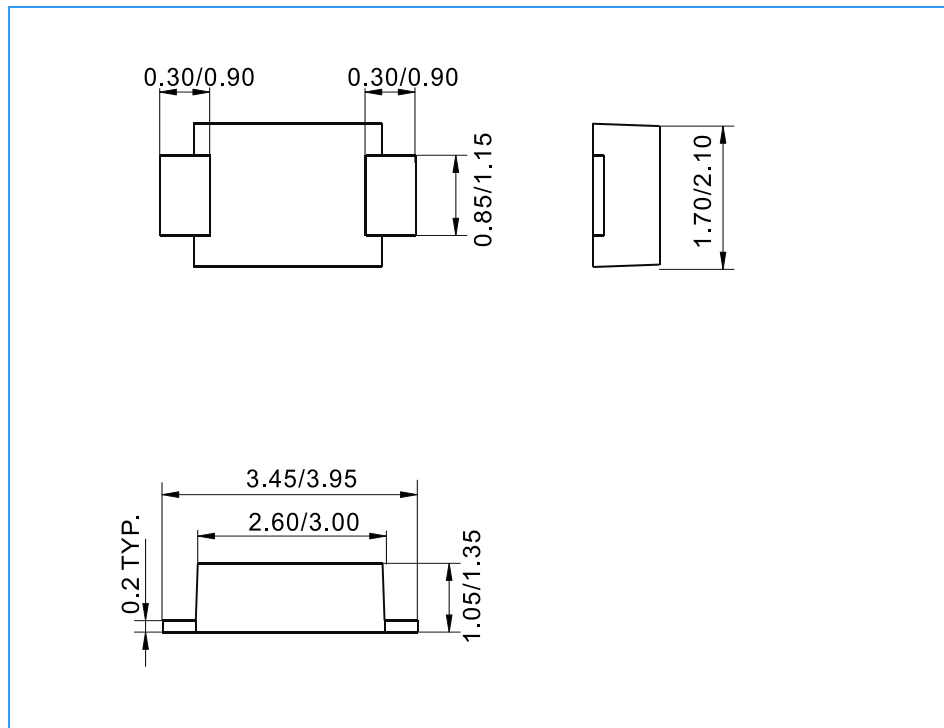
Fig. 4 Typical Reverse Characteristics



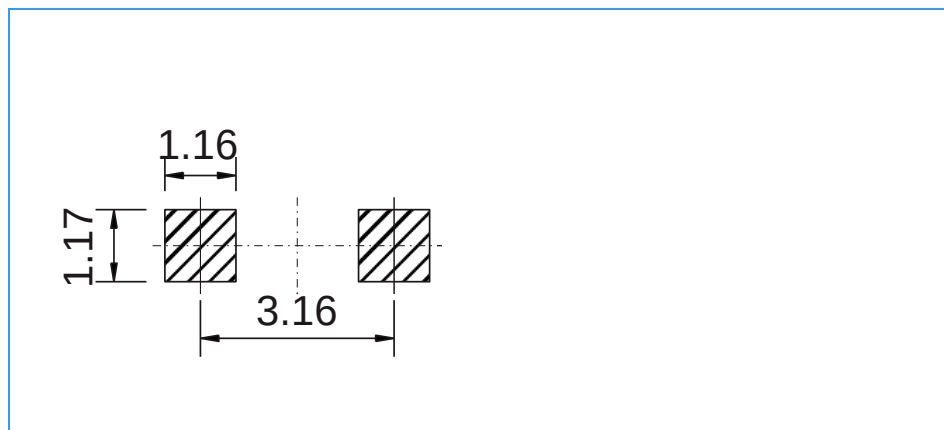
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Package Outline Dimensions (Unit: mm)



Mounting Pad Layout (Unit: mm)



Ordering Information

Part Number	Marking	Package	Shipping Quantity
SOD1F6	FJ	SOD-123FL	10000 pcs / Tape & Reel