

Super-Fast Recovery Rectifier

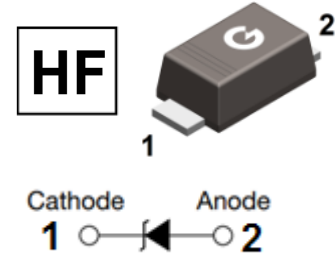
SOD1E1- SOD1E4

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°C unless otherwise specified)

Parameter	Symbol	SOD1E1	SOD1E2	SOD1E3	SOD1E4	Unit
Peak Repetitive Reverse Voltage	V _{RRM}	50	100	150	200	V
RMS Reverse Voltage	V _{RMS}	35	70	105	140	V
DC Blocking Voltage	V _{DC}	50	100	150	200	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	SOD1E1	SOD1E2	SOD1E3	SOD1E4	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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SOD1E1- SOD1E4

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

Parameter	Symbol	Test Condition		Min.	Typ.	Max.	Unit
Reverse Breakdown Voltage	$V_{(BR)}$	$I_R = 2\mu\text{A}$, SOD1E1		50	-	-	V
		$I_R = 2\mu\text{A}$, SOD1E2		100	-	-	V
		$I_R = 2\mu\text{A}$, SOD1E3		150	-	-	V
		$I_R = 2\mu\text{A}$, SOD1E4		200	-	-	V
Maximum Instantaneous Forward Voltage	V_F	$I_F = 1.0\text{A}$		-	-	0.95	V
Maximum Reverse Current	I_R	Rated	@ $T_A = 25^\circ\text{C}$	-	-	5.0	μA
		V_R	@ $T_A = 125^\circ\text{C}$	-	-	100	
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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SOD1E1- SOD1E4

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

Fig.1 Forward Current Derating Curve

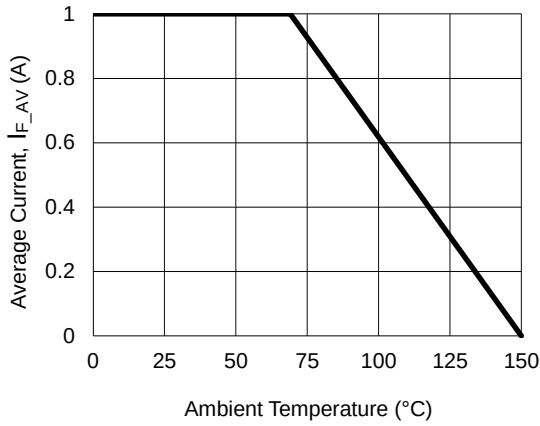


Fig.2 Surge Current Derating Curve

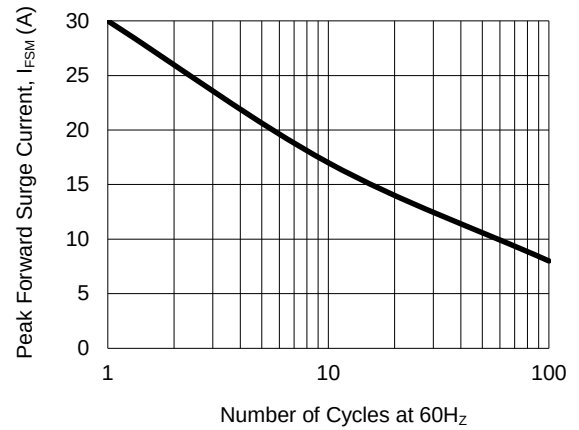


Fig.3 Typical Forward Voltage Characteristics

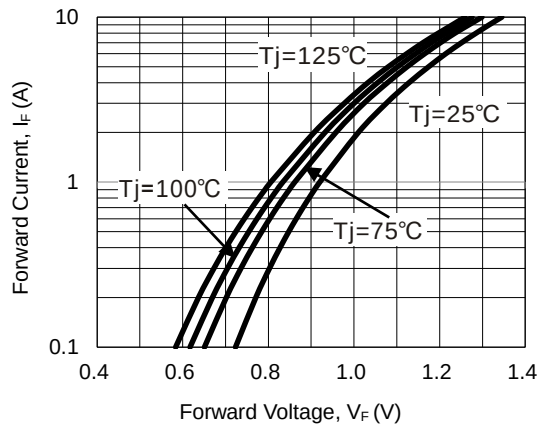
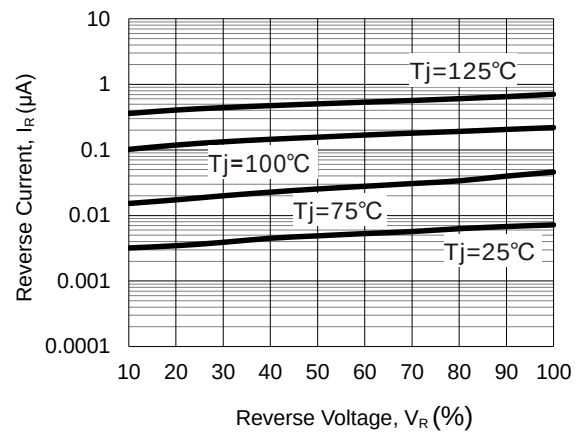


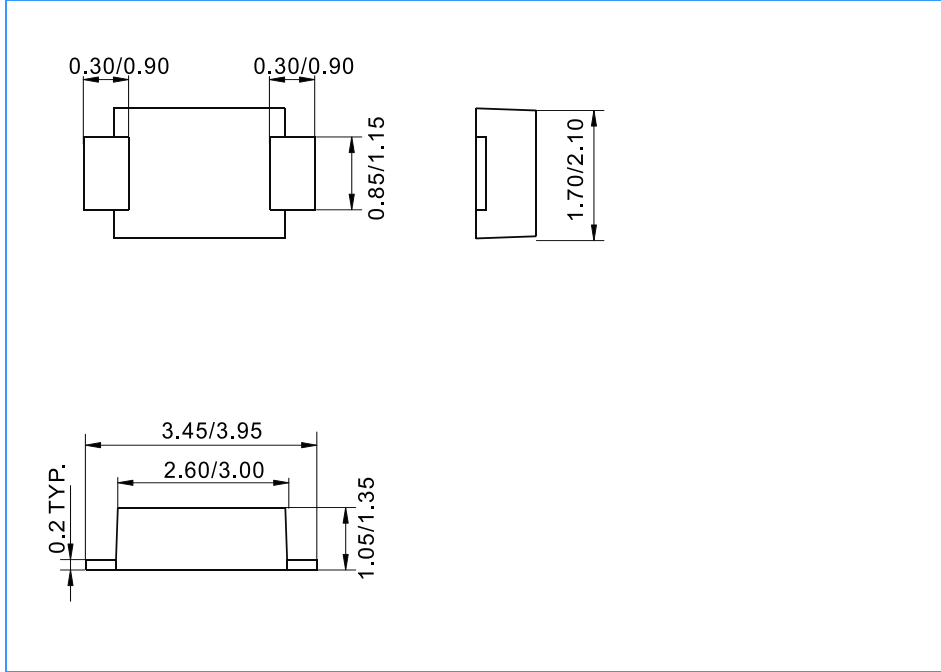
Fig.4 Typical Reverse Characteristics



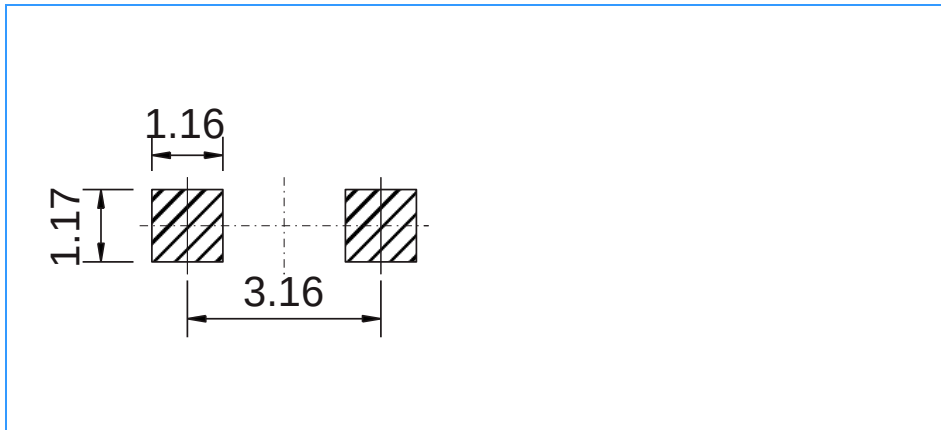
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SOD1E1- SOD1E4

Package Outline Dimensions (Unit: mm)



Mounting Pad Layout (Unit: mm)



Ordering Information

Part Number	Marking	Package	Shipping Quantity
SOD1E1	E1	SOD-123FL	10000 pcs / Tape & Reel
SOD1E2	E2	SOD-123FL	10000 pcs / Tape & Reel
SOD1E3	E3	SOD-123FL	10000 pcs / Tape & Reel
SOD1E4	E4	SOD-123FL	10000 pcs / Tape & Reel