

Super-Fast Recovery Rectifier

SOD1U1 - SOD1U4

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	SOD1U1	SOD1U2	SOD1U3	SOD1U4	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
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	SOD1U1	SOD1U2	SOD1U3	SOD1U4	Unit
Typical Thermal Resistance *1	R _{θJA}	85				°C/W
	R _{θJC}	23				
	R _{θJL}	15				
Operating Junction Temperature Range	T _J	-55 ~ +175				°C
Storage Temperature Range	T _{STG}	-55 ~ +175				°C

Note *1: Device mounted on p.c.b. with 10 mm x 20 mm x 0.1mm copper pad area

Super-Fast Recovery Rectifier**SOD1U1 - SOD1U4****Electrical Characteristics** (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition		Typ.	Max.	Unit
Instantaneous Forward Voltage	V_F	$I_F = 1.0\text{A}$		-	0.95	V
Reverse Current	I_R	Rated V_R	@ $T_A = 25^\circ\text{C}$	-	5.0	μA
			@ $T_A = 125^\circ\text{C}$	-	200	
Reverse Recovery Time	t_{rr}	$I_F = 0.5\text{A}$, $I_{RM} = 1\text{A}$, $I_{R(REC)} = 0.25\text{A}$		-	25	ns

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

Fig.1 Forward Current Derating Curve

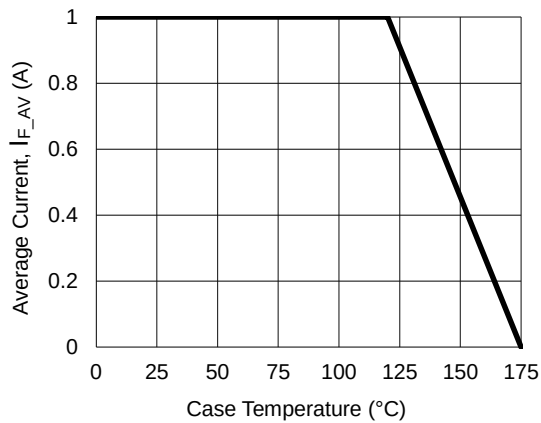


Fig.2 Surge Current Derating Curve

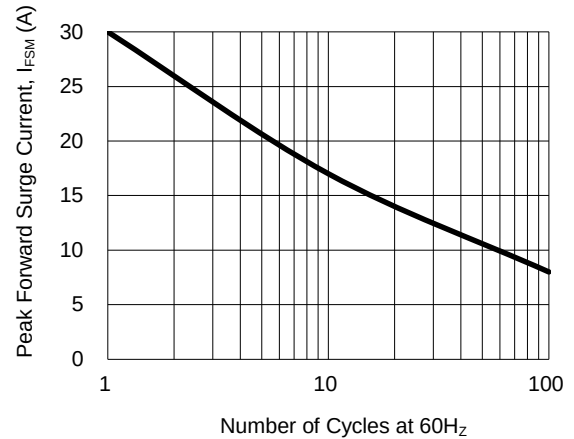


Fig.3 Typical Forward Voltage Characteristics

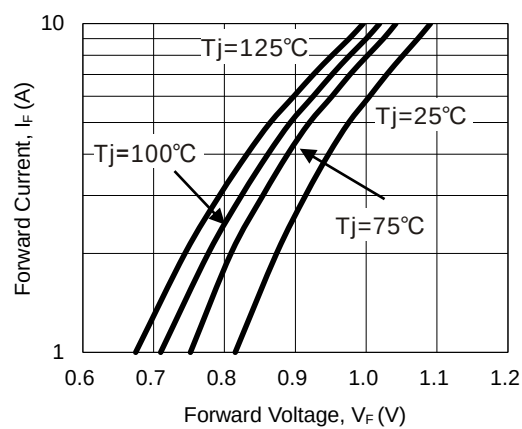
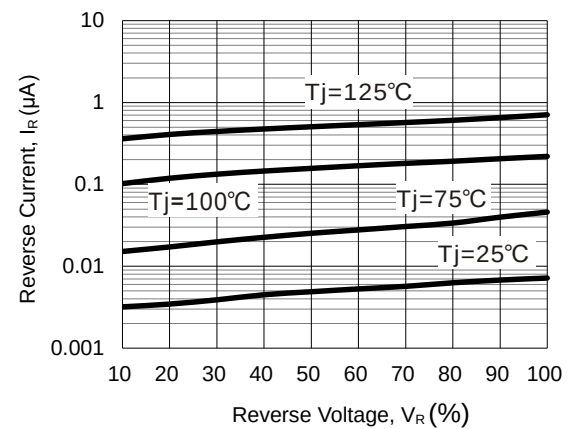


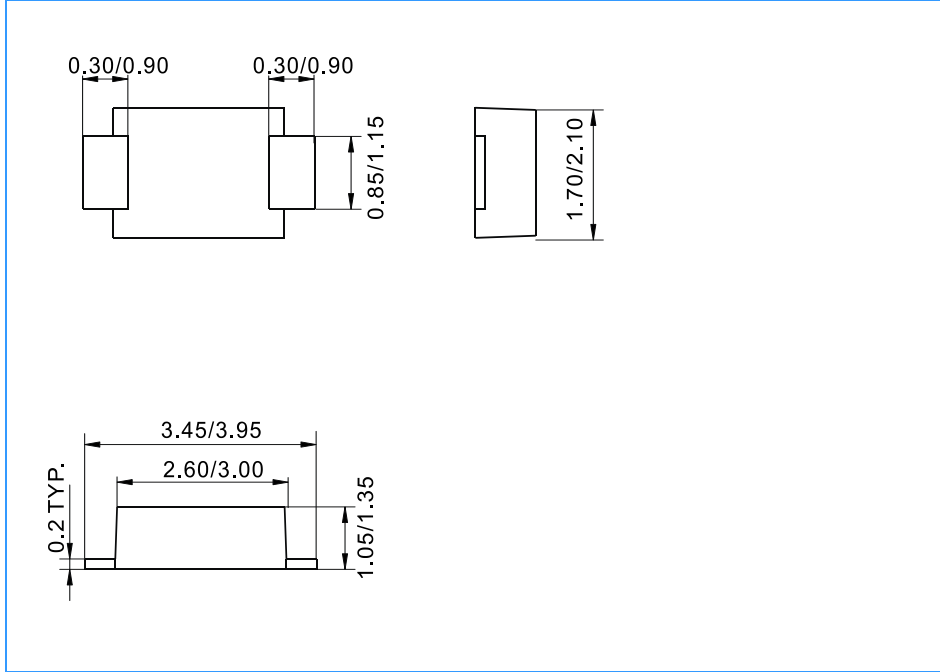
Fig.4 Typical Reverse Characteristics



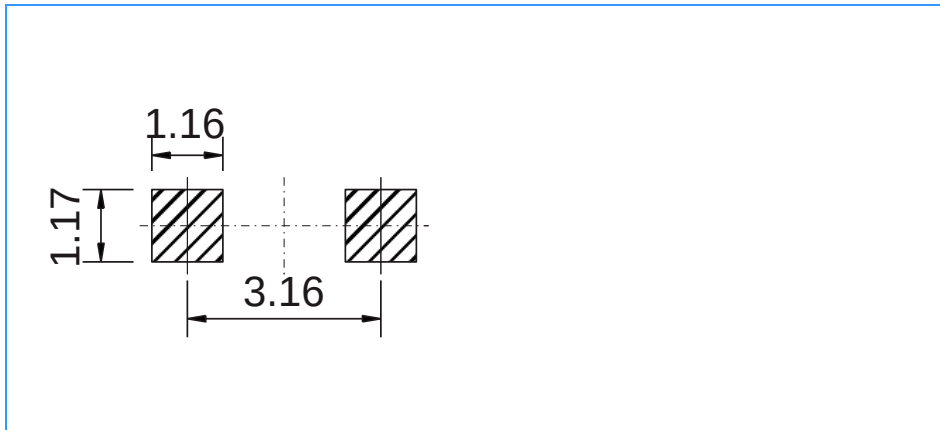
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Package Outline Dimensions (Unit: mm)



Mounting Pad Layout (Unit: mm)



Ordering Information

Part Number	Marking	Package	Shipping Quantity
SOD1U1	U1	SOD-123FL	10000 / Tape & Reel
SOD1U2	U2	SOD-123FL	10000 / Tape & Reel
SOD1U3	U3	SOD-123FL	10000 / Tape & Reel
SOD1U4	U4	SOD-123FL	10000 / Tape & Reel