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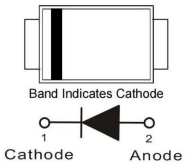
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S1AFL - S1MFL
Surface General-Purpose Rectifier

Features

- Ultra Thin Profile – Maximum Height of 1.08 mm
- UL Flammability 94V-0 Classification
- Glass Passivated Junction
- MSL 1
- RoHS Compliant / Green Mold Compound
- Industrial Device Qualified per AEC-Q101 Standards.
  * see authorized use policy

SOD-123F



Ordering Information

Part Number	Top Mark	Package	Packing Method
S1AFL	1A	SOD-123F	Tape and Reel
S1BFL	1B	SOD-123F	Tape and Reel
S1DFL	1D	SOD-123F	Tape and Reel
S1GFL	1G	SOD-123F	Tape and Reel
S1JFL	1J	SOD-123F	Tape and Reel
S1MFL	1M	SOD-123F	Tape and Reel

Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Value						Unit
		S1AFL	S1BFL	S1DFL	S1GFL	S1JFL	S1MFL	
V_{RRM}	Recurrent Peak Reverse Voltage	50	100	200	400	600	1000	V
V_{RMS}	RMS Voltage	35	70	140	280	420	700	V
V_{DC}	DC Blocking Voltage	50	100	200	400	600	1000	V
$I_{F(AV)}$	Average Forward Current(1)	1						A
I_{FSM}	Peak One Cycle Surge Forward Current (Non-Repetitive) at 60Hz	30						A
T_J, T_{STG}	Operating and Storage Temperature Range	-50 to +150						°C

Note:

1. Pulse test: 300 μs pulse width, 1% duty cycle

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Thermal Characteristics[2]

Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Value	Unit
Ψ_{JL}	Typical Thermal Characteristics, Junction-to-Lead[3]	25	°C/W
$R_{\theta JA}$	Typical Thermal Resistance, Junction-to-Ambient	140	°C/W

Note:

2. Per JESD51-3 recommended thermal test board. Device mounted on FR-4 PCB, board size = 76.2 mm x 114.3 mm.
3. Thermocouple soldered at cathode lead.

Electrical Characteristics

Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Conditions		Min.	Typ.	Max.	Unit
V_F	Forward Voltage	I_F = 1 A				1.1	V
I_R	Reverse Current	$V_R = V_{DC}$	T_A = 25°C			1	µA
			T_A = 125°C			50	
T_{rr}	Reverse Recovery Time	I_F = 0.5 A, I_R = 1 A, I_{rr} = 0.25 A			1.304	2	µs
C_J	Junction Capacitance	V_R = 4 V, f = 1.0 MHz			4		pF

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Typical Performance Characteristics

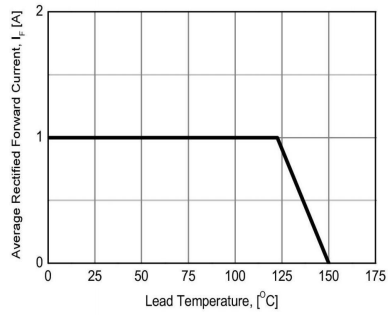


Figure 1. Forward Current Derating Curve

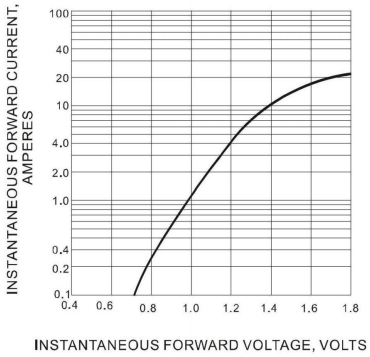


Figure 2. Typical Instantaneous Forward Characteristics

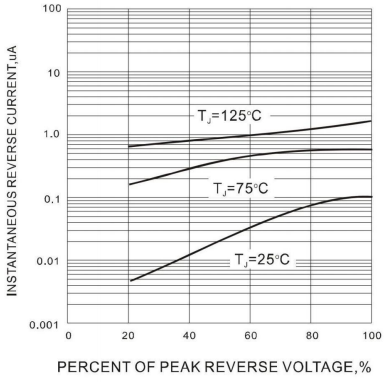


Figure 3. Typical Reverse Characteristic

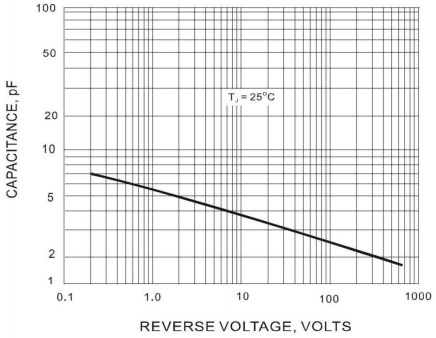


Figure 4. Typical Junction Capacitance

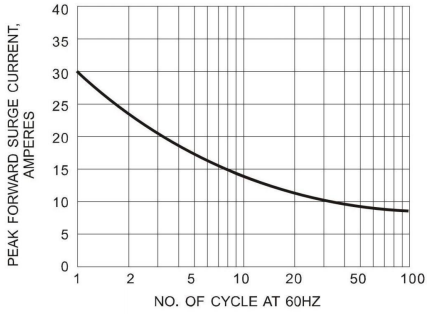


Figure 5. Maximum Non-Repetitive Surge Current

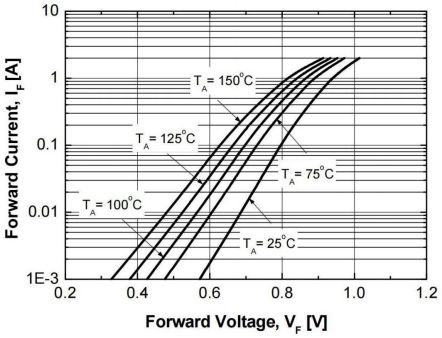


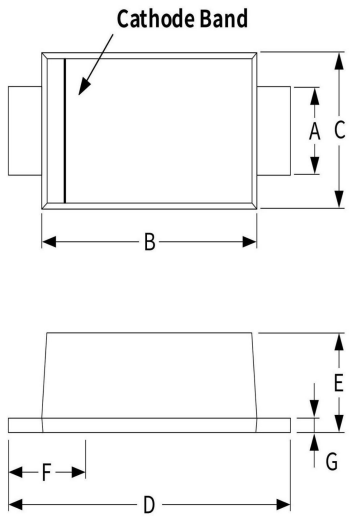
Figure 6. Typical Forward Characteristics

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Ordering Information

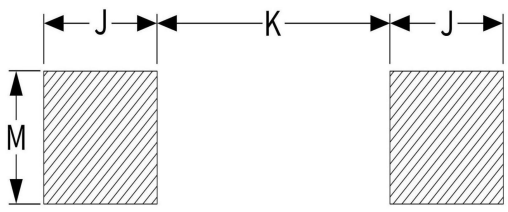
PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOD-123FL	R1	0.0169	3000	30000	240000	7''

Package Outline Dimensions (SOD -123FL)



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.90	1.10	0.035	0.430
B	2.55	2.85	0.100	0.111
C	1.60	1.90	0.063	0.074
D	3.60	3.90	0.031	0.043
E	1.00	1.20	0.031	0.035
F	0.40	0.90	0.047	0.055
G	0.10	0.25	0.003	0.007

Suggested Pad Lavout



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	1.00	-	0.040	-
K	-	1.90	-	0.074
M	1.50	-	0.059	-