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January 2016

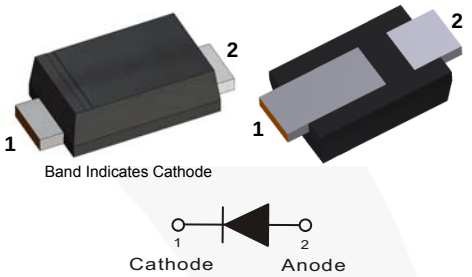
RS1JFP - RS1MFP
Surface Mount Fast Recovery Rectifiers

Features

- Low Power Loss, High Efficiency
- Larger Cathode Pad for Improved Power Dissipation
- Ultra Thin Profile - Package Height <1.0 mm
- High Surge Capacity
- Low Forward Voltage: 1.3 V Maximum
- UL Flammability 94V-0 Classification
- MSL 1 per J-STD-020
- RoHS Compliant / Green Molding Compound
- Industrial Device Qualified per AEC-Q101 Standards

  * See authorized use policy

SOD-123HE



Ordering Information

Part Number	Top Mark	Package	Packing Method
RS1JFP	JLS	SOD-123HE	Tape and Reel
RS1KFP	KLS	SOD-123HE	Tape and Reel
RS1MFP	MLS	SOD-123HE	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
		RS1JFP	RS1KFP	RS1MFP	
V_{RRM}	Repetitive Peak Reverse Voltage	600	800	1000	V
V_{RMS}	RMS Reverse Voltage	420	560	700	V
V_R	DC Blocking Voltage	600	800	1000	V
$I_{F(AV)}$	Average Forward Rectified Current	1.2			A
I_{FSM}	Peak Forward Surge Current: 8.3 ms Single Half Sine-Wave Superimposed on Rated Load	50			A
T_J	Operating Junction Temperature Range	-55 to +150			°C
T_{STG}	Storage Temperature Range	-55 to +150			°C

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Thermal Characteristics[1]

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

Symbol	Parameter	Value	Unit
ψ_{JL}	Typical Thermal Characteristics, Junction-to-Lead[2]	12	°C/W
$R_{\theta JA}$	Typical Thermal Resistance, Junction-to-Ambient	140	°C/W

Notes:

1. Per JESD51-3 recommended thermal test board. Device mounted on FR-4 PCB, board size = 76.2 mm x 114.3 mm.
2. 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	Instantaneous Forward Voltage[3]	I_F = 1.2 A			1.3	V
I_R	Reverse Current at Rated V_R	T_J = 25°C			5	µA
		T_J = 125°C			150	
C_J	Junction Capacitance	V_R = 0 V, f = 1 MHz		18		pF
T_{rr}	Reverse Recovery Time	I_F = 0.5 A, I_R = 1 A, I_{rr} = 0.25 A			300	ns

Note:

3. Pulse test with PW = 300 µs, 1% duty cycle

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Typical Performance Characteristics

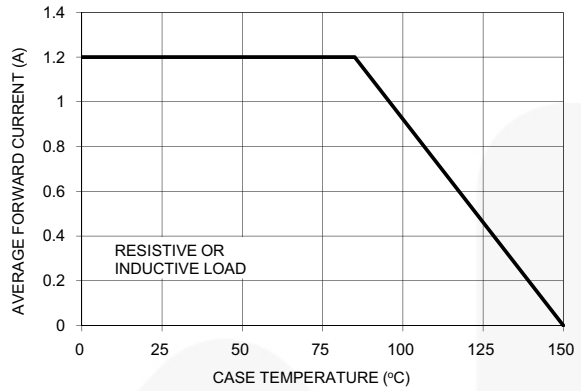


Figure 1. Maximum Forward Current Derating Voltage

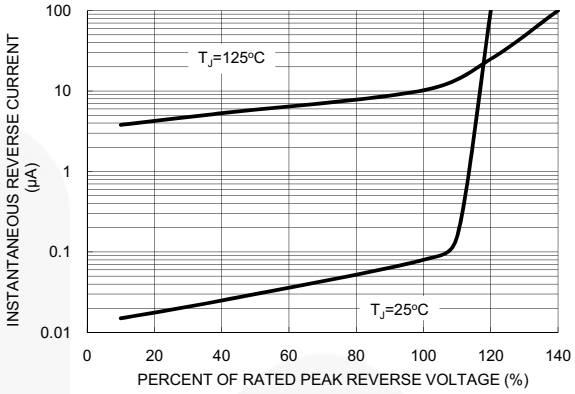


Figure 2. Typical Reverse Characteristics

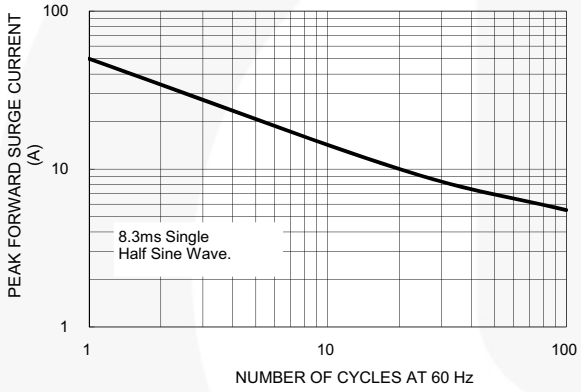


Figure 3. Maximum Non-Repetitive Forward Surge Current

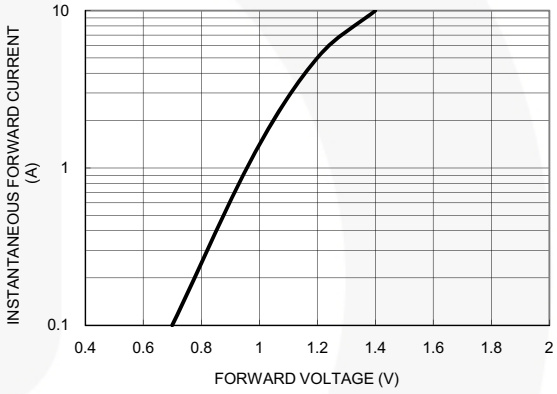


Figure 4. Typical Instantaneous Forward Characteristics

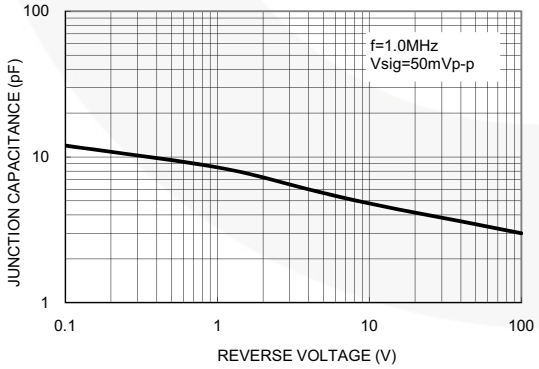


Figure 5. Typical Junction Capacitance

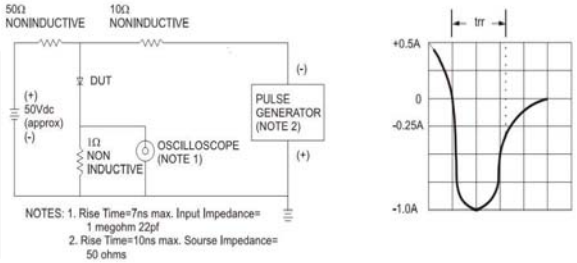
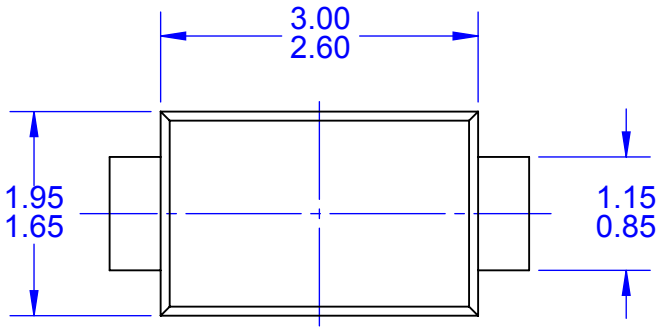
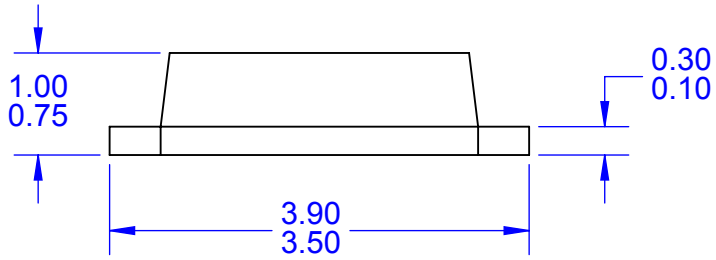
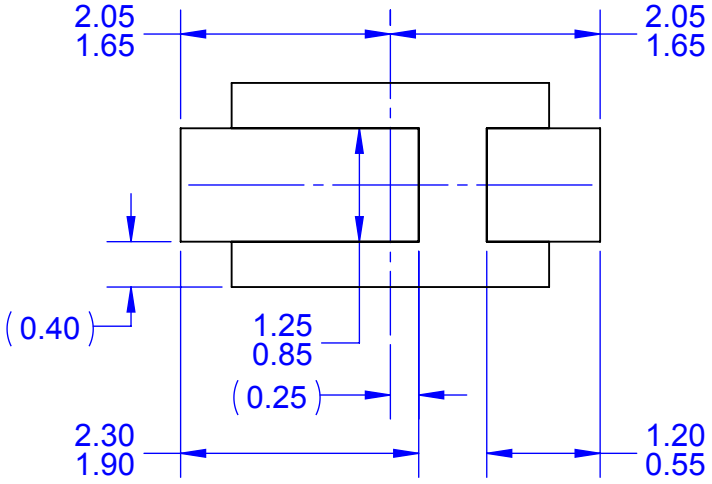


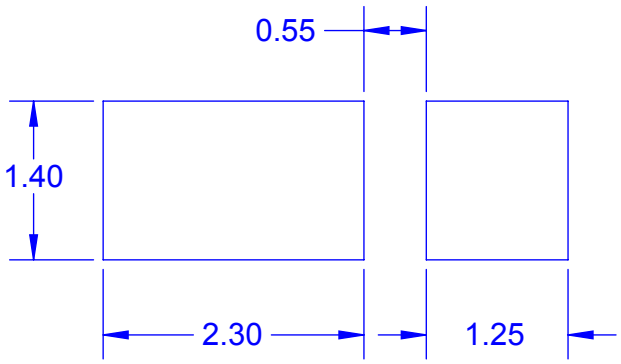
Figure 6. Reverse Recovery Time Characteristic and Test Circuit Diagram

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