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March 2016

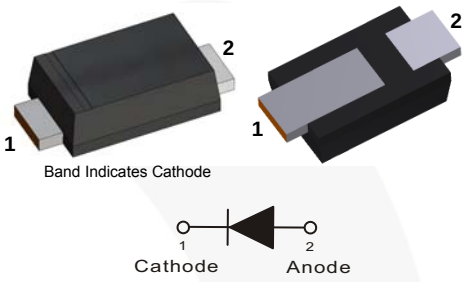
SS12FP - S115FP
1 A, 20 V - 150 V Surface Mount Schottky Barrier Rectifiers

Features

- Larger Cathode Pad for Improved Power Dissipation
- Ultra Thin Profile - Package Height < 1.0 mm
- High Surge Current Capability
- Low Power Loss, High Efficiency
- 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
SS12FP	2FP	SOD-123HE	Tape and Reel
SS13FP	3FP	SOD-123HE	Tape and Reel
SS14FP	4FP	SOD-123HE	Tape and Reel
SS16FP	6FP	SOD-123HE	Tape and Reel
S110FP	0FP	SOD-123HE	Tape and Reel
S115FP	AFP	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
		SS12 FP	SS13 FP	SS14 FP	SS16 FP	S110 FP	S115 FP	
V_{RRM}	Repetitive Peak Reverse Voltage	20	30	40	60	100	150	V
V_{RMS}	RMS Reverse Voltage	14	21	28	42	70	105	V
V_R	DC Blocking Voltage	20	30	40	60	100	150	V
$I_{F(AV)}$	Average Forward Rectified Current	1						A
I_{FSM}	Peak Forward Surge Current: 8.3 ms Single Half Sine-Wave Superimposed on Rated Load	30						A
T_J	Operating Junction Temperature Range	-55 to +125		-55 to +150				°C
T_{STG}	Storage Temperature Range	-55 to +150						°C

Thermal Characteristics[1]

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

Symbol	Parameter	Value	Unit
ψ_{JL}	Thermal Characteristics, Junction-to-Lead[2]	10	°C/W
$R_{\theta JA}$	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	Value						Unit
			SS12 FP	SS13 FP	SS14 FP	SS16 FP	S110 FP	S115 FP	
V_F	Maximum Instantaneous Forward Voltage[3]	I_F = 0.5 A			0.51	0.58	0.70	0.75	V
		I_F = 1.0 A	0.45	0.50	0.55	0.70	0.80	0.90	
I_R	Maximum Reverse Current at Rated V_R	T_J = 25°C	0.40				0.05		mA
		T_J = 125°C					0.50		
C_J	Typical Junction Capacitance	V_R = 4 V, f = 1 MHz	54				28		pF
T_{rr}	Typical Reverse Recovery Time	I_F = 0.5 A, I_R = 1 A, I_{RR} = 0.25 A	6				14		ns

Note:

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

Typical Performance Characteristics

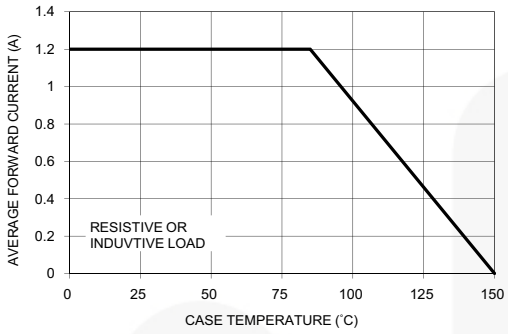


Figure 1. Forward Current Derating Curve

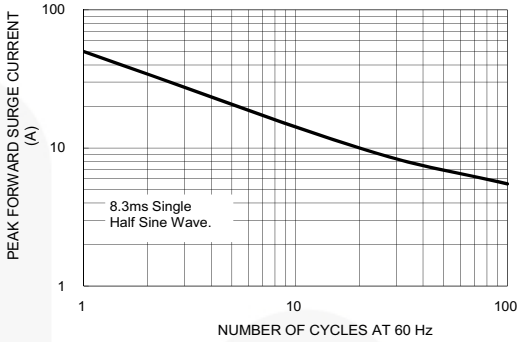


Figure 2. Maximum Non-Repetitive Forward Surge Curren

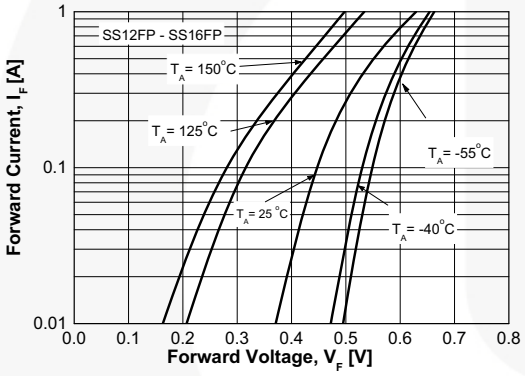


Figure 3. Typical Forward Characteristics

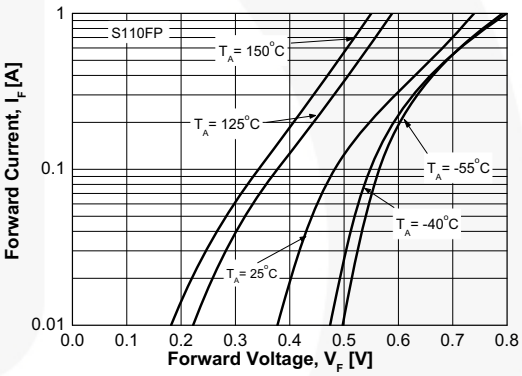


Figure 4. Typical Forward Characteristics

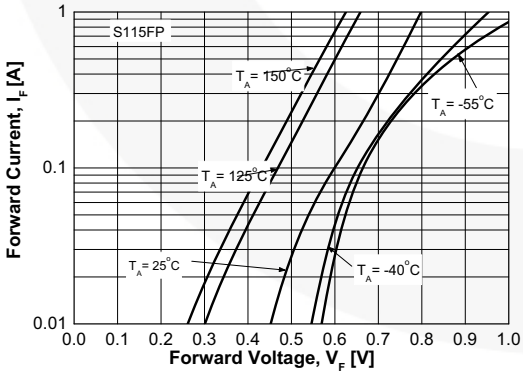


Figure 5. Typical Forward Characteristics

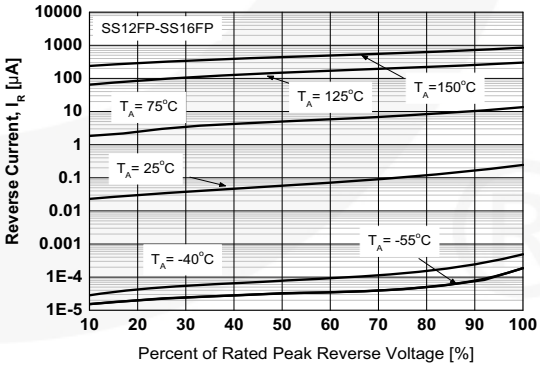


Figure 6. Typical Reverse Characteristics

Typical Performance Characteristics (Continued)

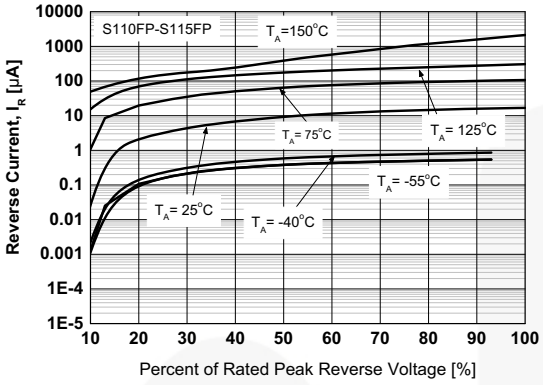


Figure 7. Typical Reverse Characteristics

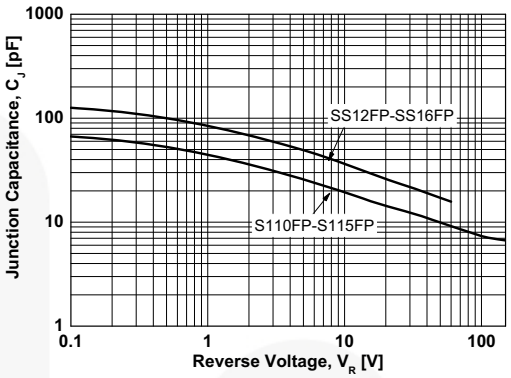
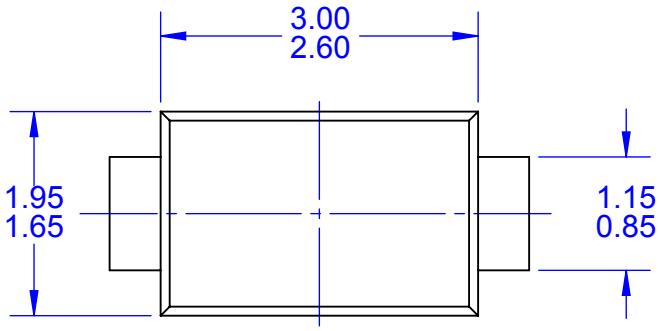
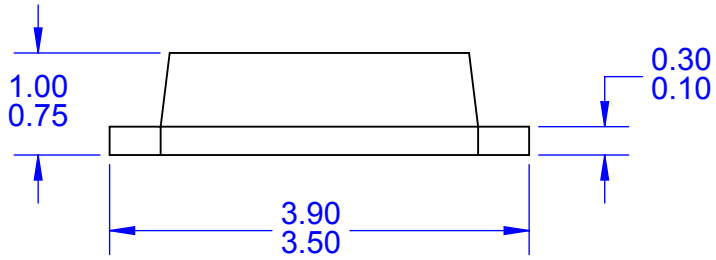
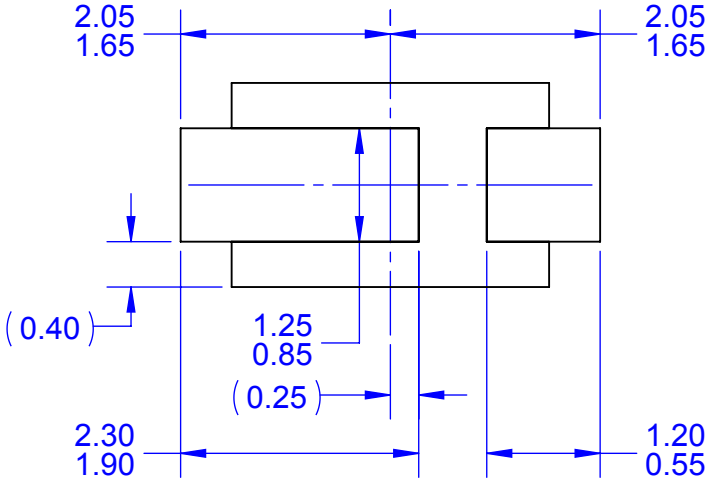
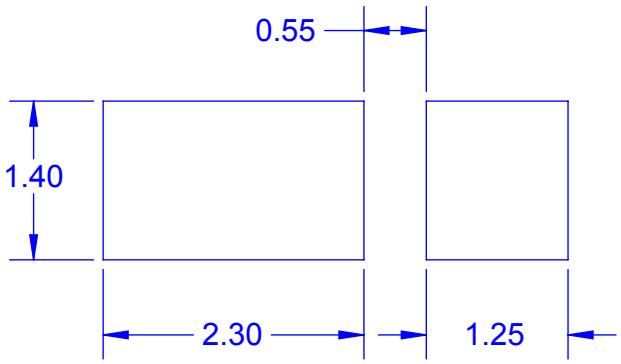


Figure 8. Typical Junction Capacitance









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