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March 2016

SS22FA - S215FA
2 A, 20 V - 150 V Surface Mount Schottky Barrier Rectifiers

Features

- Low Power Loss, High Efficiency
- Guard Ring for Overvoltage Protection
- High Surge Current Capability
- 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-123FA



Ordering Information

Part Number	Top Mark	Package	Packing Method
SS22FA	22L	SOD-123FA	Tape and Reel
SS23FA	23L	SOD-123FA	Tape and Reel
SS25FA	25L	SOD-123FA	Tape and Reel
SS29FA	29L	SOD-123FA	Tape and Reel
S210FA	20L	SOD-123FA	Tape and Reel
S215FA	2AL	SOD-123FA	Tape and Reel

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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
		SS22 FA	SS23 FA	SS25 FA	SS29 FA	S210 FA	S215 FA	
V_{RRM}	Repetitive Peak Reverse Voltage	20	30	50	90	100	150	V
V_{RMS}	RMS Reverse Voltage	14	21	35	63	70	105	V
V_R	DC Blocking Voltage	20	30	50	90	100	150	V
$I_{F(AV)}$	Average Forward Rectified Current	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 +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	16	°C/W
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	152	°C/W

Note:

1. Per JESD51-3 Recommended Thermal Test Board. Device mounted on FR-4 PCB, board size = 76.2mm x 114.3mm.

Electrical Characteristics

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

Symbol	Parameter	Conditions	Value						Unit
			SS22 FA	SS23 FA	SS25 FA	SS29 FA	S210 FA	S215 FA	
V_F	Maximum Instantaneous Forward Voltage[2]	I_F = 2 A	0.50		0.70	0.85		0.95	V
I_R	Maximum Reverse Current at Rated V_R	T_J = 25°C	0.4			0.1			mA
		T_J = 100°C	15		10				
		T_J = 125°C				5			
C_J	Typical Junction Capacitance	V_R = 4 V, f = 1 MHz	120		93	62		48	pF
T_{rr}	Typical Reverse Recovery Time	I_F = 0.5 A, I_R = 1 A, I_{RR} = 0.25 A	10		9	7		13	ns

Note:

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

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Typical Performance Characteristics

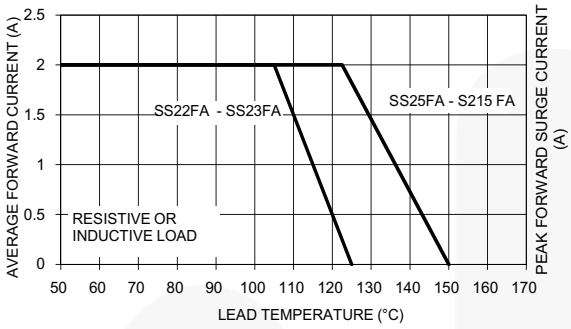


Figure 1. Forward Current Derating Curve

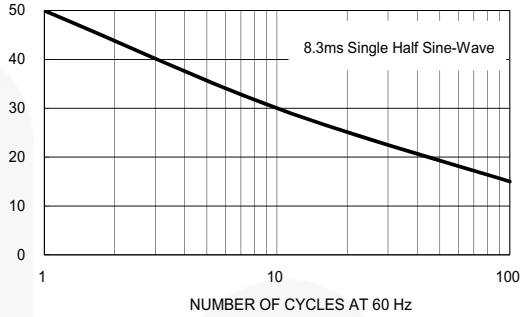


Figure 2. Maximum Non-Repetitive Forward Surge Current

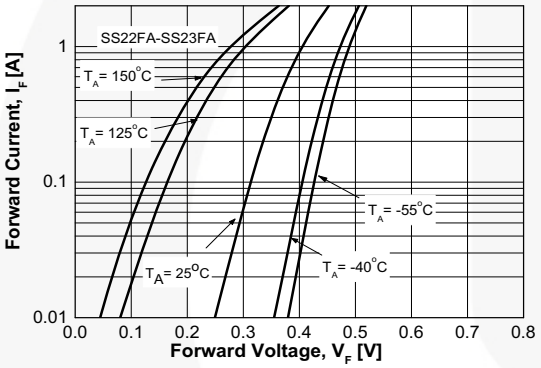


Figure 3. Typical Forward Characteristics

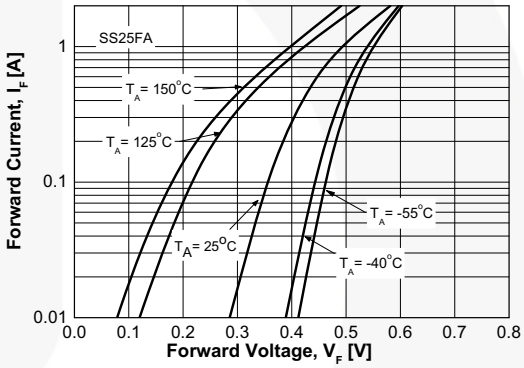


Figure 4. Typical Forward Characteristics

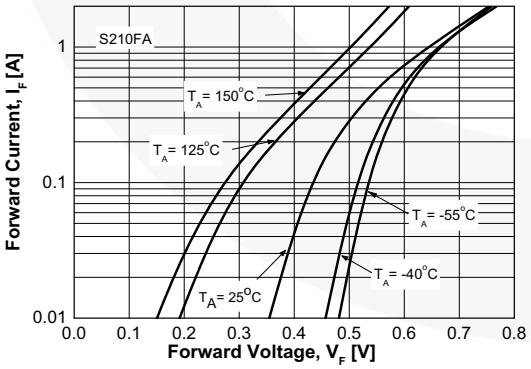


Figure 5. Typical Forward Characteristics

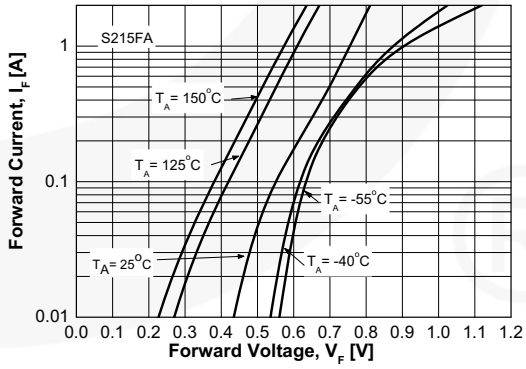


Figure 6. Typical Forward Characteristics

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Typical Performance Characteristics (Continued)

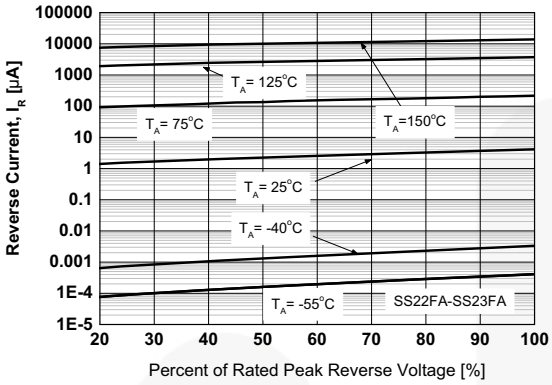


Figure 7. Typical Reverse Characteristics

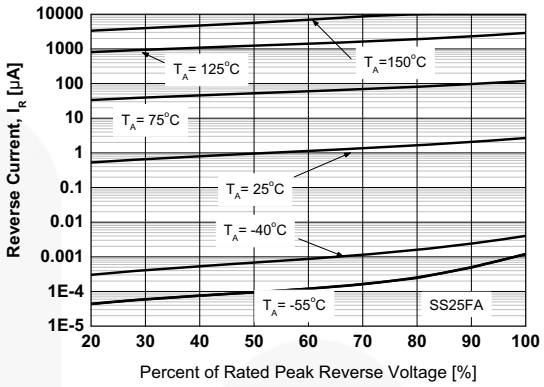


Figure 8. Typical Reverse Characteristics

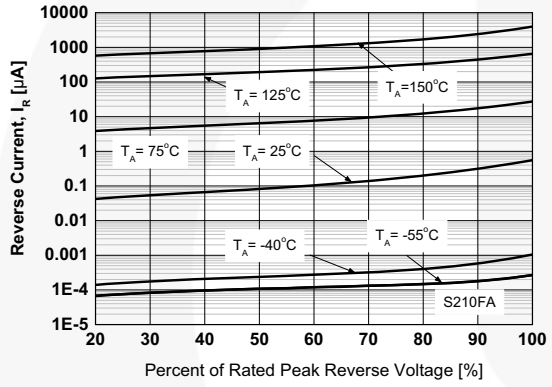


Figure 9. Typical Reverse Characteristics

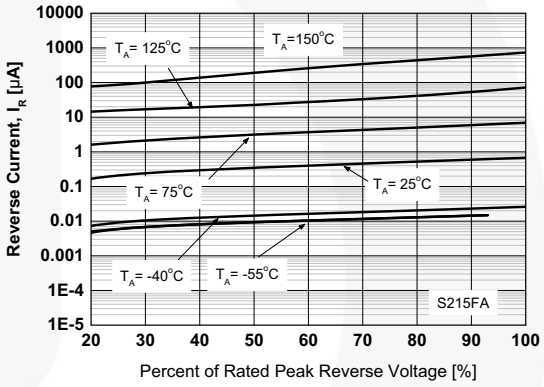


Figure 10. Typical Reverse Characteristics

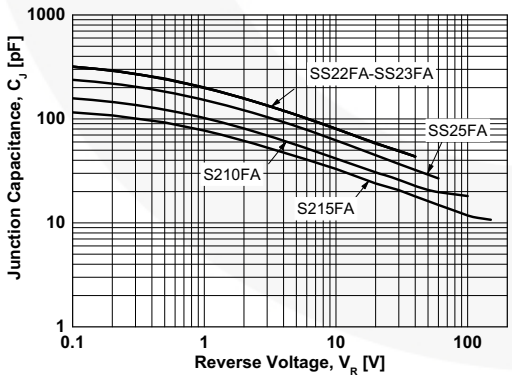
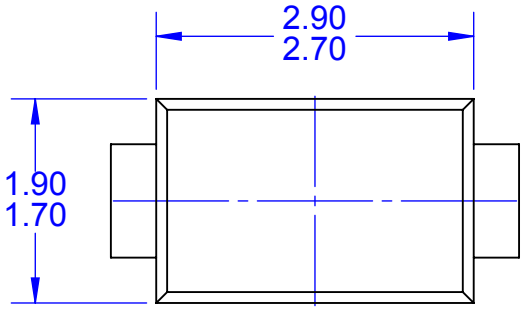
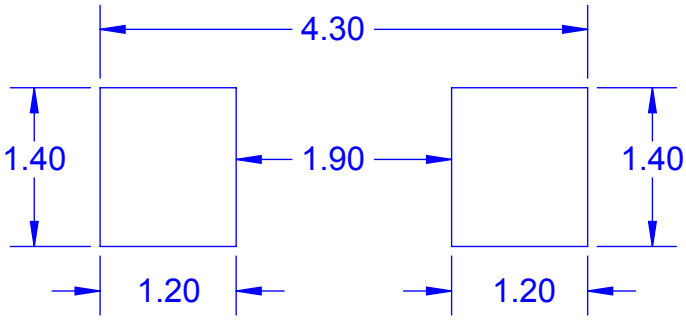


Figure 11. Typical Junction Capacitance

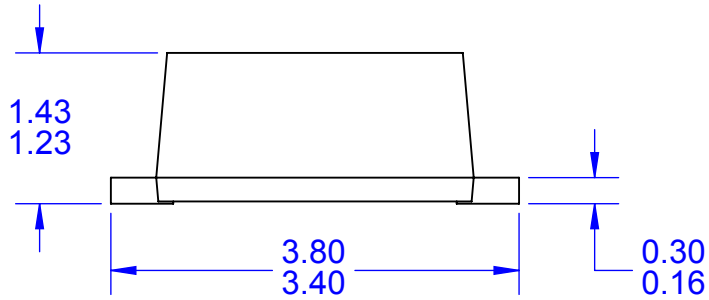
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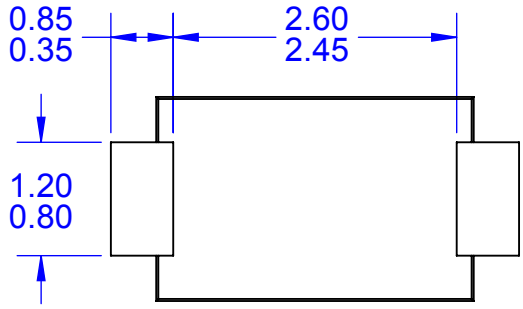
TOP VIEW



LAND PATTERN RECOMMENDATION



FRONT VIEW



BOTTOM VIEW

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