




**SPECIFICATION SHEET**

<b>SPECIFICATION SHEET NO.</b>	P1102- SOD123F4004SD4
<b>DATE</b>	Nov. 02, 2022
<b>REVISION</b>	A0
<b>DESCRIPTION</b>	SMD General Purpose Silicon Rectifier, SOD-123FL series, SOD4004 Type, 2 Pads Reverse Voltage 400V Max. Forward Current 1.0A Max. Operating Temp. Range -55°C ~+150°C Package in Tape/Reel, 3000pcs/Reel RoHS/RoHS III compliant
<b>CUSTOMER</b>	
<b>CUSTOMER PART NUMBER</b>	
<b>CROSS REF. PART NUMBER</b>	
<b>ORIGINAL PART NUMBER</b>	MDD SOD4004
<b>PART CODE</b>	SOD123F4004SD4

<b>VENDOR APPROVE</b>		
Issued/Checked/Approved		
		
DATE: Nov. 02, 2022		

<b>CUSTOMER APPROVE</b>	
DATE:	

11/2/2022

**SMD GENERAL PURPOSE RECTIFIER SOD123FL SERIES**



**MAIN FEATURE**

- Glass Passivated Device
- Ideal For SMT Applications
- Low Reverse Leakage
- Metallurgically Bonded Construction
- High Temperature Soldering Guaranteed:  
250°C/10 Seconds, 0.375”(9.5mm) Lead Length, 5 Lbs. (2.3kg) Tension

**APPLICATION**

- For printed circuit board

**RFQ**

[Request For Quotation](#)

**PART CODE GUIDE**

SOD123F	4004	S	D4
1	2	3	4

- 1) **SOD123F**: SMD General Purpose Silicon Rectifier, SOD-123FL series,
- 2) **4004**: Type Code for original part number SOD4004
- 3) **S**: Package code, Tape/reel, 3000pcs/reel.
- 4) **D4**: Marking code for “D4” on the case surface, Different Marking for different specification..

**MORE ITEMS AVAILABLE**

SOD123F4001SD1	SOD123F4002SD2	SOD123F4003SD3	<b>SOD123F4004SD4</b>	SOD123F4005SD5
SOD123F4006SD6	SOD123F4007SD7			

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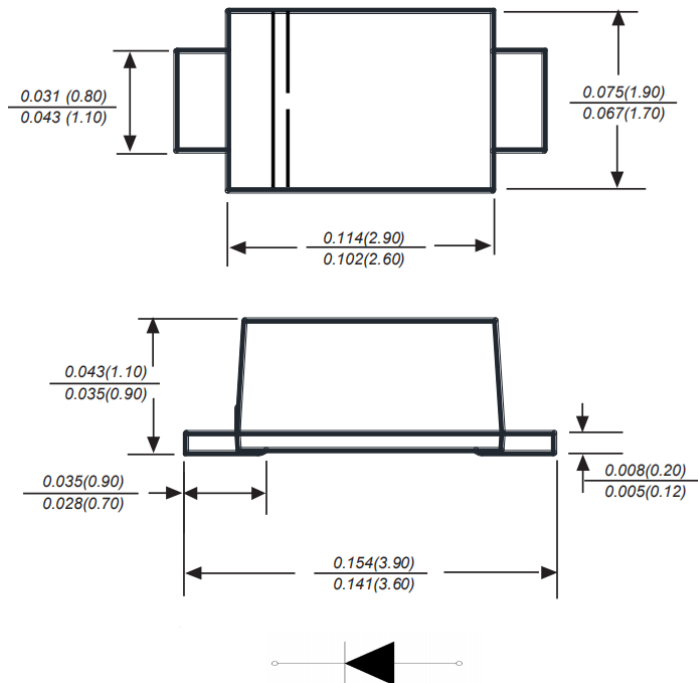
**DIMENSION (Unit: Inch/mm)**

Image for reference

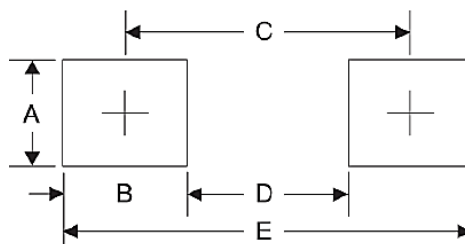


Marking: D4

SOD-123FL



Recommend Pad Layout



Symbol	Unit (Inch)	Unit (mm)
A	0.047	1.20
B	0.047	1.20
C	0.126	3.20
D	0.079	2.00
E	0.173	4.40

**SMD GENERAL PURPOSE RECTIFIER SOD123FL SERIES**
**MECHANICAL DATA**

Case	Terminals	Polarity	Mounting Position	Weight per piece
JEDEC SOD-123FL molded plastic body	Solder plated, Solderable per MIL-STD-750, Method 2026	Polarity symbol marking on body	Any	0.0007 Ounce, 0.020 grams

**MAX. RATING & CHARACTERISTICS**

Parameter	SYMBOLS	VALUE			UNITS
		Min.	Typical	Max.	
<b>Repetitive peak reverse voltage</b>	V <sub>RRM</sub>			400	Volts
<b>RMS voltage</b>	V <sub>RMS</sub>			280	Volts
<b>DC blocking voltage</b>	V <sub>DC</sub>			400	Volts
<b>Average forward output rectified current</b>	I <sub>AV</sub>			1.0	A
<b>Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)</b>	I <sub>FSM</sub>			30	A
<b>Instantaneous forward voltage at 1.0A</b>	V <sub>F</sub>			1.1	Volts
<b>DC reverse current at rated DC blocking voltage</b>	I <sub>R</sub>			5.0	μA
				50	μA
<b>Junction capacitance (Note 2)</b>	C <sub>J</sub>		8		pF
<b>Thermal resistance (Note 3)</b>	R <sub>QJA</sub>		90		°C/W
<b>Operating junction temperature range</b>	T <sub>J</sub>	-55		+150	°C
<b>Storage temperature range</b>	T <sub>STG</sub>	-55		+150	°C

**Note**

- Ratings at 25 C ambient temperature unless otherwise specified. Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.
- Averaged over any 20ms period.
- Measured at 1.0MHz and applied reverse voltage of 4.0Voltage
- Thermal resistance from junction to ambient at 0.375" (9.5mm)lead length, P.C.B. mounted

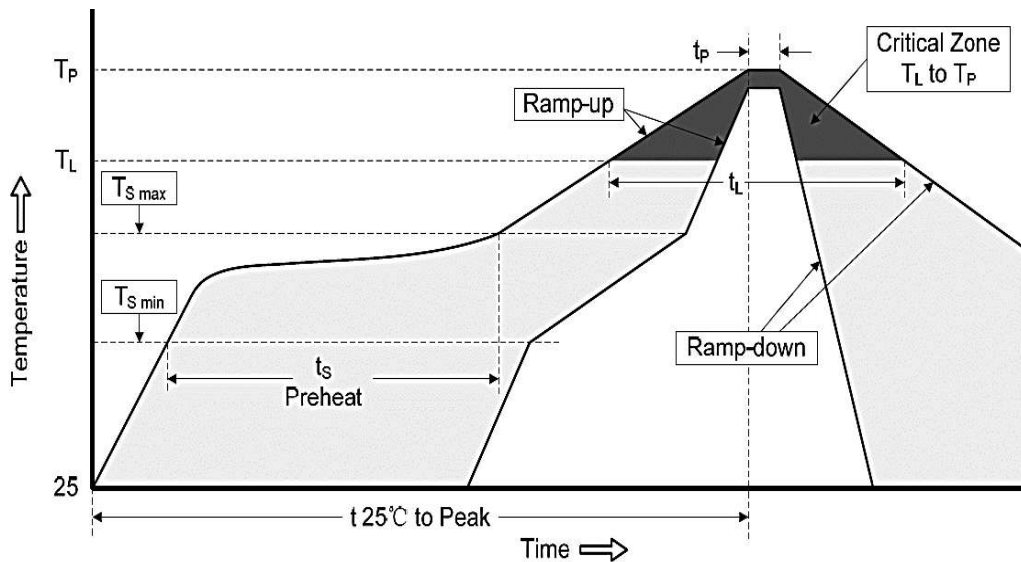
11/2/2022

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**RELIABILITY**

Number	Experiment Items	Experiment Method And Conditions	Reference Documents
1	Solder Resistance Test	Test 260°C± 5°C for 10 ± 2 sec. Immerse body into solder 1/16" ± 1/32"	MIL-STD-750D METHOD-2031.2
2	Solderability Test	230°C ±5°C for 5 sec.	MIL-STD-750D METHOD-2026.1 0
3	Pull Test	1 kg in axial lead direction for 10 sec.	MIL-STD-750D METHOD-2036.4
4	Bend Test	0.5Kg Weight Applied To Each Lead, Bending Arcs 90 °C ± 5 °C For 3 Times	MIL-STD-750D METHOD-2036.4
5	High Temperature Reverse Bias Test	TA=100°C for 1000 Hours at VR=80% Rated VR	MIL-STD-750D METHOD-1038.4
6	Forward Operation Life Test	TA=25°C Rated Average Rectified Current	MIL-STD-750D METHOD-1027.3
7	Intermittent Operation Life Test	On state: 5 min with rated IRMS Power Off state: 5 min with Cool Forced Air. On and off for 1000 cycles.	MIL-STD-750D METHOD-1036.3
8	Pressure Cooker Test	15 PSIG, TA=121°C, 4 hours	MIL-S-19500 APPENOIXC
9	Temperature Cycling Test	-55°C~+125°C; 30 Minutes For Dwelled Time 5 minutes for transferred time. Total: 10 cycles.	MIL-STD-750D METHOD-1051.7
10	Thermal Shock Test	0°C for 5 minutes., 100°C for 5minutes, Total: 10 cycles	MIL-STD-750D METHOD-1056.7
11	Forward Surge Test	8.3ms Single Sale Sine-wave One Surge.	MIL-STD-750D METHOD-4066.4
12	Humidity Test	TA=65°C, RH=98% for 1000 hours.	MIL-STD-750D METHOD-1021.3
13	High Temperature Storage life Test	150°C for 1000 Hours	MIL-STD-750D METHOD-1031.5

**SMD GENERAL PURPOSE RECTIFIER SOD123FL SERIES**

**SUGGESTED REFLOW PROFILE (For Reference Only)**



<b>Profile Feature</b>		Pb-Free Assembly
<b>Average Ramp-up Rate (Ts Max to Tp)</b>		3°C/second Max
<b>Preheat</b>	<b>Temperature Min (Ts Min.)</b>	150°C
	<b>Temperature Max (Ts Max.)</b>	200°C
	<b>Time (ts Min. to ts Max.)</b>	60 ~ 180 seconds
<b>Time maintained above</b>	<b>Temperature (Tl)</b>	217°C
	<b>Time (tl)</b>	60 ~ 150 seconds
<b>Peak/Classification Temperature (Tp)</b>		260 °C
<b>Time within 5°C of actual Peak Temperature (tp)</b>		20 ~ 40 seconds
<b>Ramp-down rate</b>		6 °C /Second Max.
<b>Time 25 °C to Peak Temperature</b>		8 minutes Max.
<b>Suggest reflow times</b>		3 Times Max.

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**RATINGS AND CHARACTERISTIC CURVES (For Reference Only)**

Fig.1 Forward Current Derating Curve

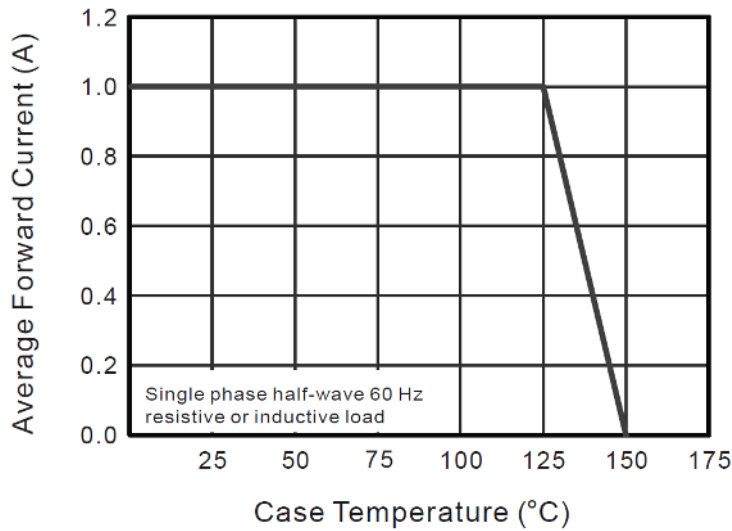
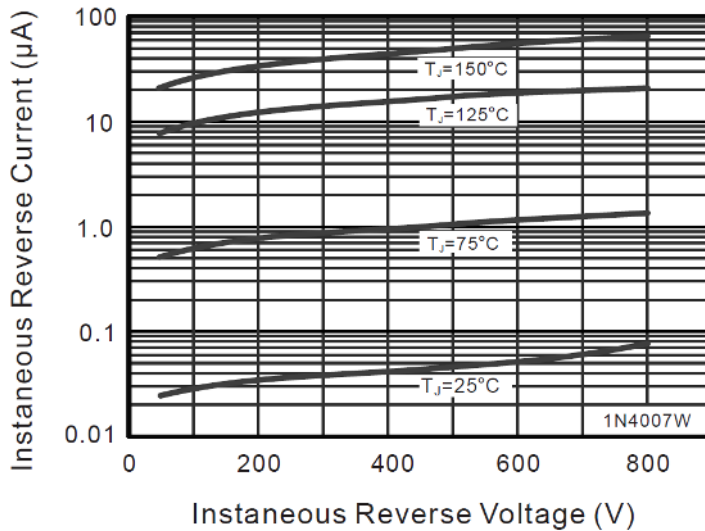


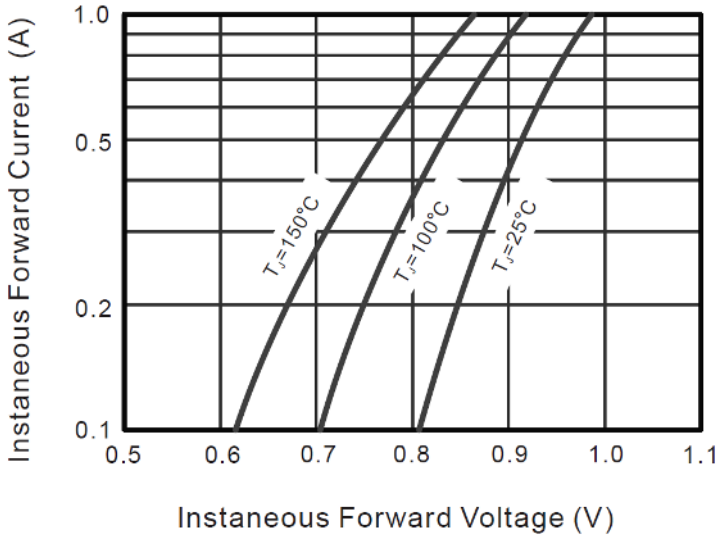
Fig.2 Typical Instaneous Reverse Characteristics



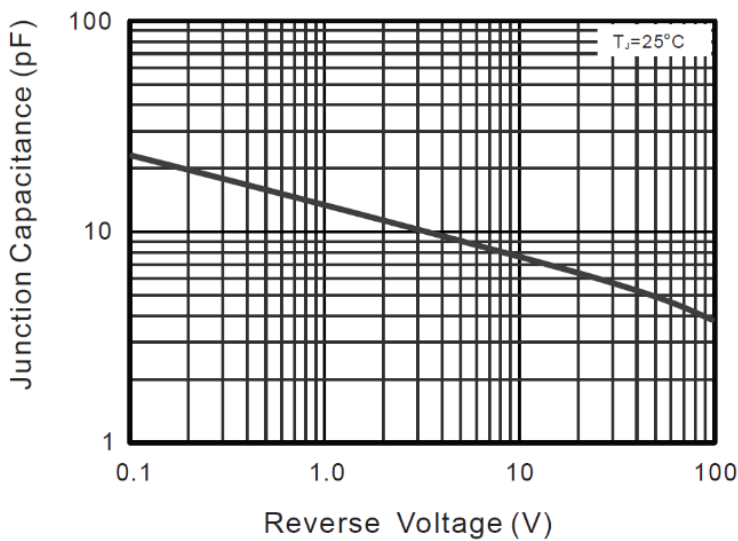
**SMD GENERAL PURPOSE RECTIFIER SOD123FL SERIES**

**RATINGS AND CHARACTERISTIC CURVES (For Reference Only)**

**Fig.3 Typical Forward Characteristic**



**Fig.4 Typical Junction Capacitance**

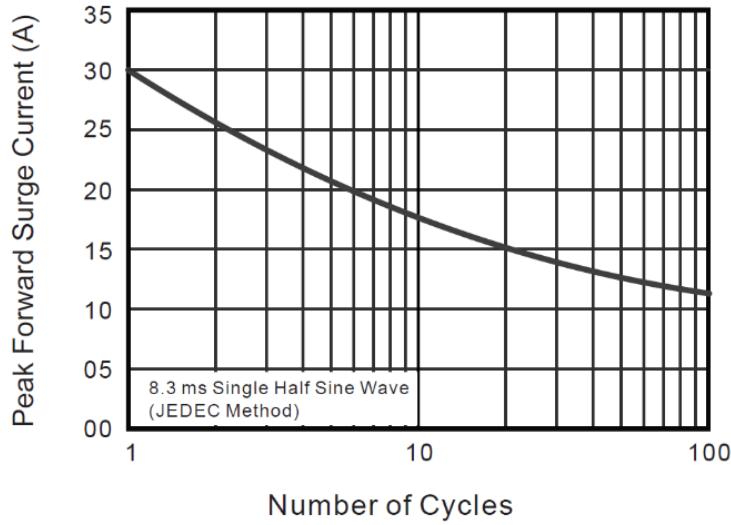




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**RATINGS AND CHARACTERISTIC CURVES (For Reference Only)**

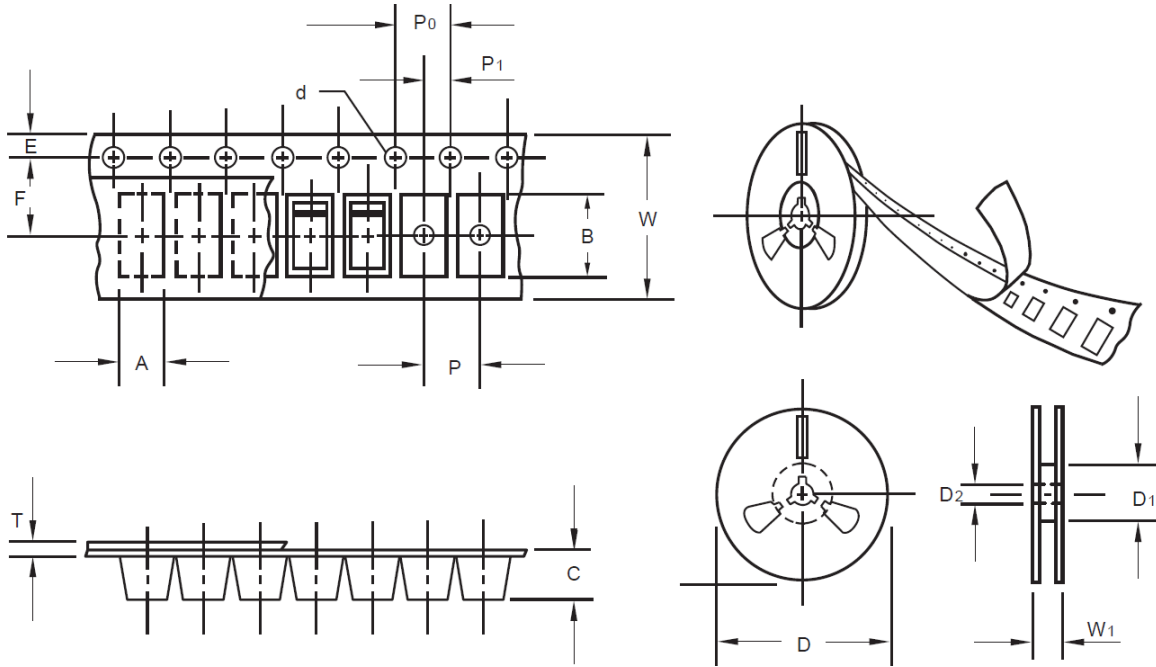
Fig.5 Maximum Non-Repetitive Peak Forward Surge Current



**SMD GENERAL PURPOSE RECTIFIER SOD123FL SERIES**

**TAPE/REEL (Unit: mm)**

All Devices are packed in accordance with EIA standard RS-481-A and specifications.



Item	Symbol	Tolerance	SOD-123FL
Carrier width	A	0.1	2.10
Carrier Length	B	0.1	4.00
Carrier Depth	C	0.1	1.60
Sprocket hole	d	0.05	1.55
7"Reel outside diameter	D	2.0	178.00
7"Reel inner diameter	D1	Min.	50.00
Feed hole diameter	D2	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	3.50
Punch hole pitch	P	0.1	4.00
Sprocket hole pitch	P0	0.1	4.00
Embossment center	P1	0.1	2.00
Overall tape thickness	T	0.1	0.25
Tape width	W	0.3	8.15
Reel width	W1	1.0	10.50

**SMD GENERAL PURPOSE RECTIFIER SOD123FL SERIES**

**PACKAGE For Reference**

<b>Case Code</b>	SOD-123FL
Reel Size	7"
Reel Size	178 mm
MPQ/Reel	3000 pcs
Qty. /Box	6000 pcs
G.W/Box	1 lbs

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