




SPECIFICATION SHEET

SPECIFICATION SHEET NO.	P1102- SOD123F4004SD4
DATE	Nov. 02, 2022
REVISION	A0
DESCRIPTION	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
CUSTOMER	
CUSTOMER PART NUMBER	
CROSS REF. PART NUMBER	
ORIGINAL PART NUMBER	MDD SOD4004
PART CODE	SOD123F4004SD4

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

CUSTOMER APPROVE	
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	SOD123F4004SD4	SOD123F4005SD5
SOD123F4006SD6	SOD123F4007SD7			

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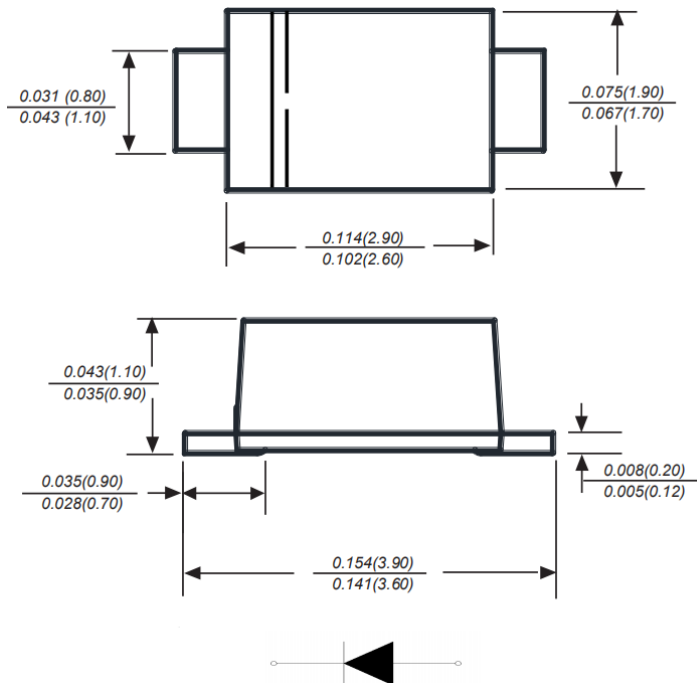
DIMENSION (Unit: Inch/mm)

Image for reference

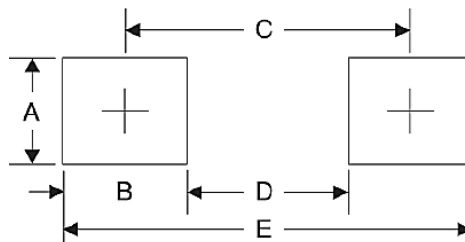


Marking: D4

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.	
Repetitive peak reverse voltage	V _{RRM}			400	Volts
RMS voltage	V _{RMS}			280	Volts
DC blocking voltage	V _{DC}			400	Volts
Average forward output rectified current	I _{AV}			1.0	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I _{FSM}			30	A
Instantaneous forward voltage at 1.0A	V _F			1.1	Volts
DC reverse current at rated DC blocking voltage	I _R			5.0	μA
				50	μA
Junction capacitance (Note 2)	C _J		8		pF
Thermal resistance (Note 3)	R _{QJA}		90		°C/W
Operating junction temperature range	T _J	-55		+150	°C
Storage temperature range	T _{STG}	-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

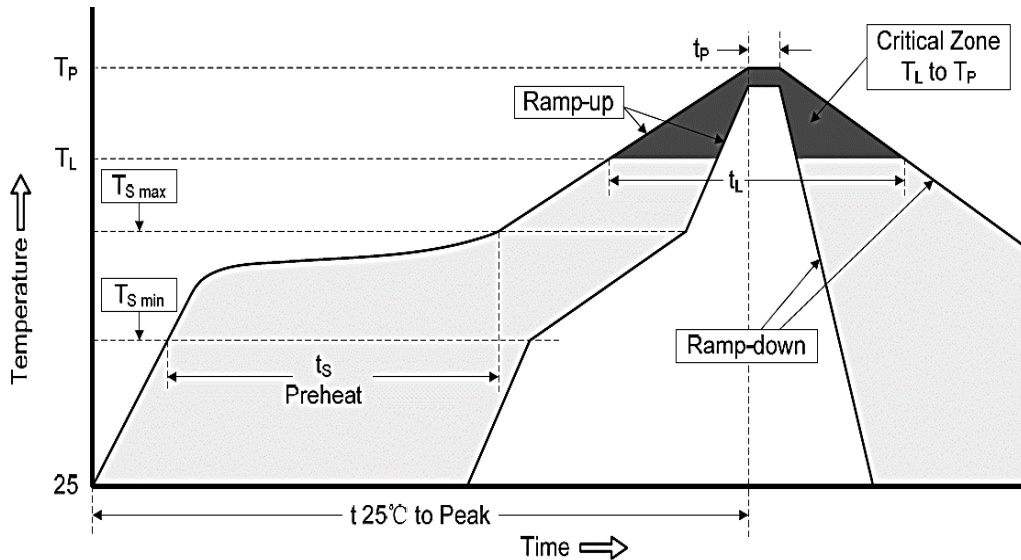
11/2/2022

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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

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SUGGESTED REFLOW PROFILE (For Reference Only)



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

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RATINGS AND CHARACTERISTIC CURVES (For Reference Only)

Fig.1 Forward Current Derating Curve

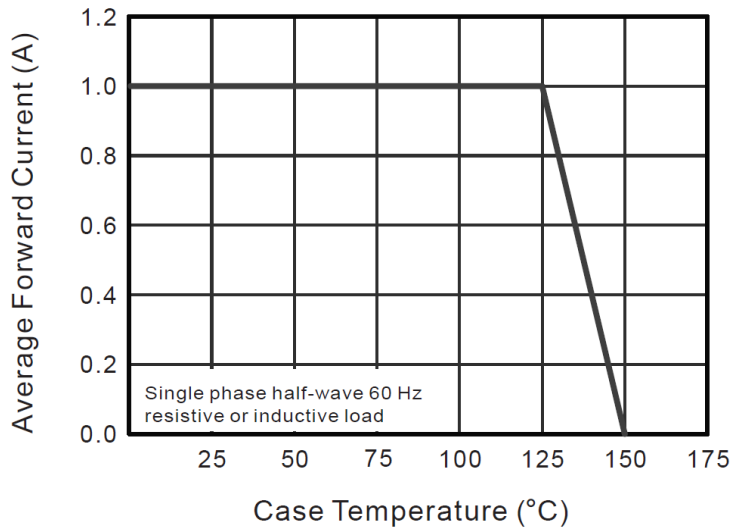
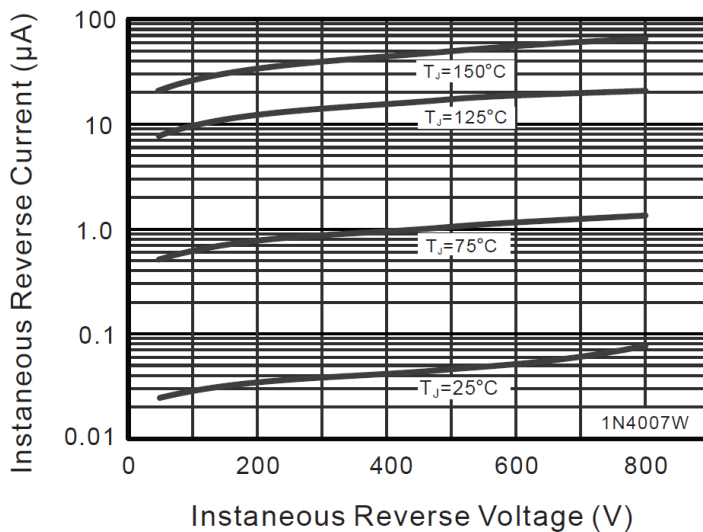


Fig.2 Typical Instaneous Reverse Characteristics



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RATINGS AND CHARACTERISTIC CURVES (For Reference Only)

Fig.3 Typical Forward Characteristic

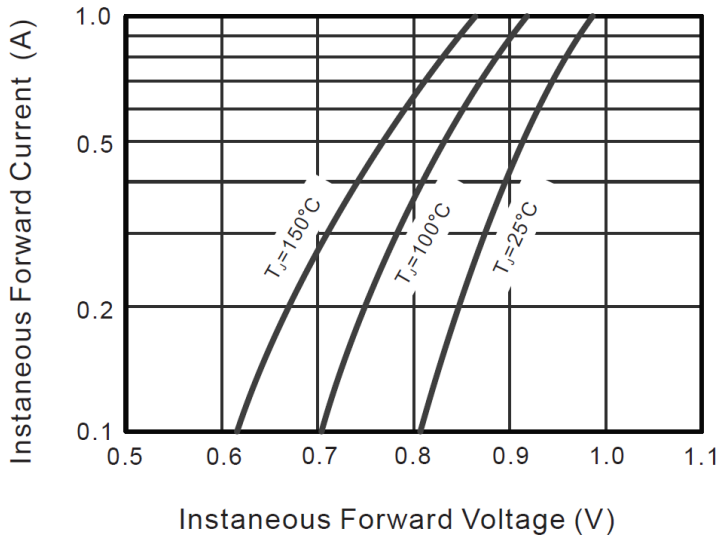
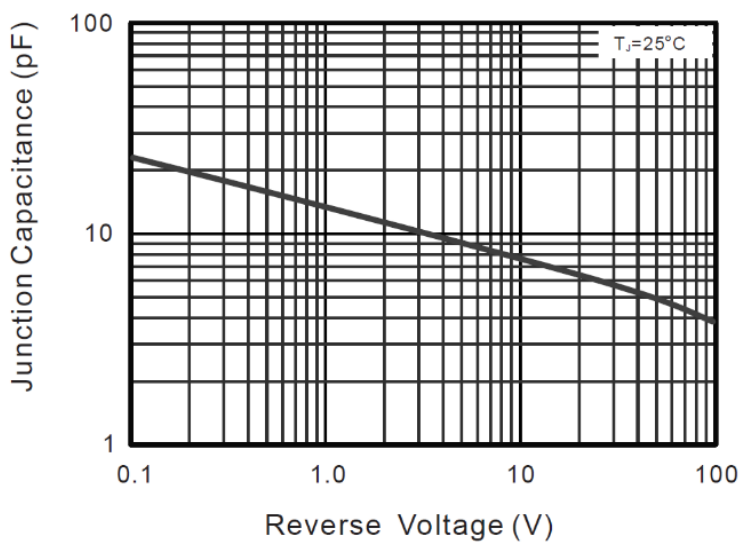


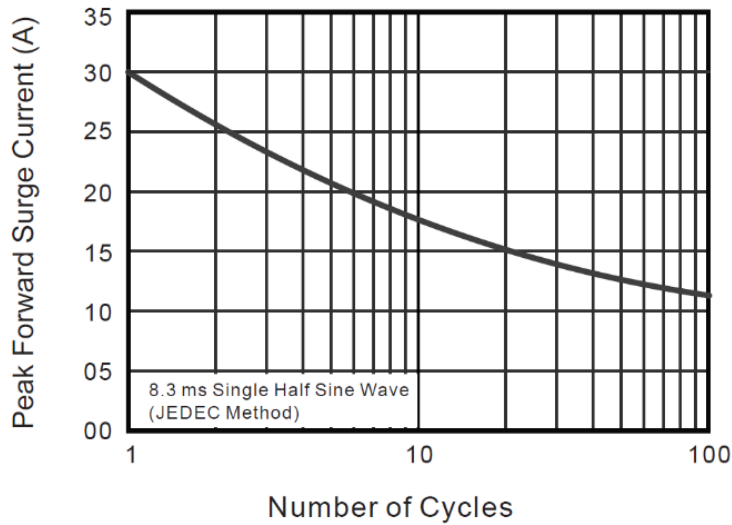
Fig.4 Typical Junction Capacitance



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RATINGS AND CHARACTERISTIC CURVES (For Reference Only)

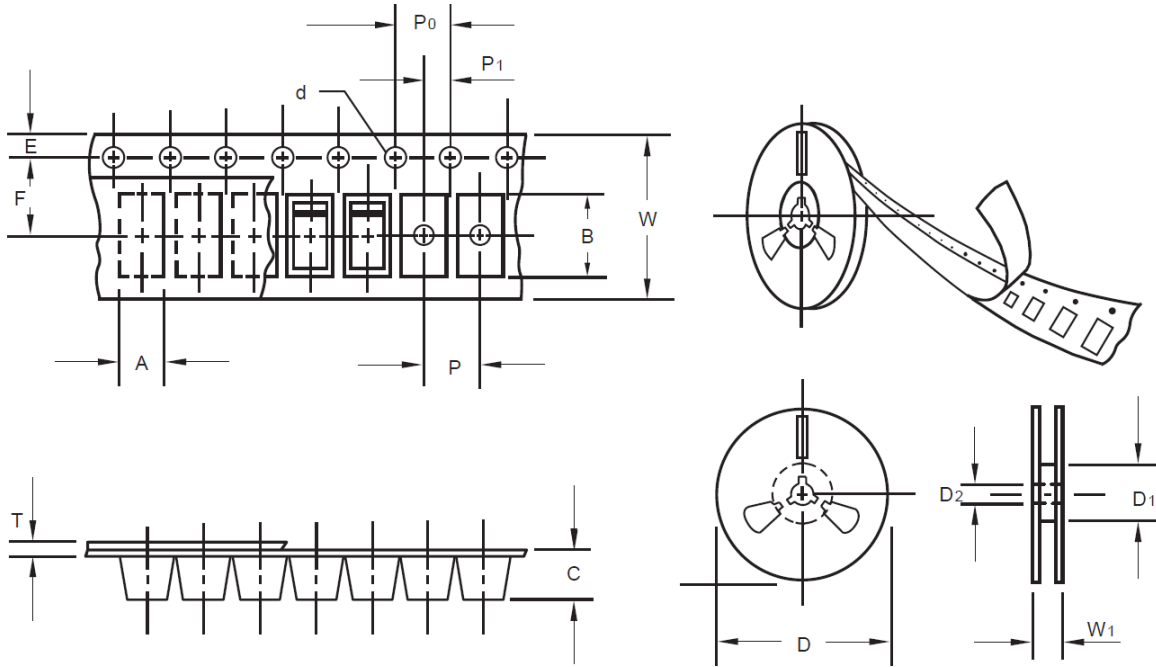
Fig.5 Maximum Non-Repetitive Peak Forward Surge Current



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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

Case Code	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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