



SPECIFICATION SHEET NO.	S0515 – SM4004PL00S0A4	
ORIGINAL MFG/PART NO.	MDD Diodes/SM4004PL	
NEXTGEN PART CODE	SM4004PL00S0A4	Indicate This Code For <a href="#">RFQ</a> /Order
DATE	May. 15, 2025	
REVISION	A3	Updated With Most Recent Data
DESCRIPTION AND MAIN PARAMETRICS	<p>SMD General Purpose Silicon Rectifier, Case SOD-123FL, SM Series, 2 Pads</p> <p>Repetitive Peak Reverse Voltage <math>V_{RRM}</math>: 400V Max.</p> <p>RMS Voltage <math>V_{RMS}</math>: 280V Max.</p> <p>Average Forward Rectified Current <math>I(AV)</math>: 1.0A Max</p> <p>Operating and Storage Temperature Range (<math>T_J</math>, <math>T_{STG}</math>): -55°C ~+150°C</p> <p>Package in Tape/Reel, 3000pcs/Reel</p> <p>RoHS/RoHS III compliant, RoHS Annex III lead Exemption (Exempt per RoHS EU 2015/863) and Halogen Free (HF)</p>	
CUSTOMER		
CUSTOMER PART NUMBER		
CROSS REF. PART NUMBER		
MEMO		

VENDOR APPROVE		
Issued/Checked/Approved		
Effective Date: May. 15, 2025		

CUSTOMER APPROVE
Date:

## MAIN FEATURE

- Glass Passivated Device
- Case Type SOD-123FL
- Ideal For Surface Mounted Applications
- Low Reverse Leakage
- Metallurgically Bonded Construction
- High temperature soldering guaranteed: 250°C/10 seconds
- Meet MSL 1 Requirement
- Cross Competitors Parts and More.
- RoHS/RoHS III compliant, RoHS Annex III lead Exemption (Exempt per RoHS EU 2015/863) and Halogen Free (HF)



*Image shown is a representation only. Exact specifications should be obtained from the product dimension.*



## APPLICATION

- For Printed Circuit Board

## ELECTRICAL CHARACTERISTICS

- See Page 5 ~ Page 6 For Different Part Code.
- All Products Parameters are Subject To NextGen Components' Final Confirmation.

## HOW TO ORDER

- Please Follow Up Part Code Guide And Indicate NextGen Part Code SM4004PL00S0A4 For RFQ and Order.

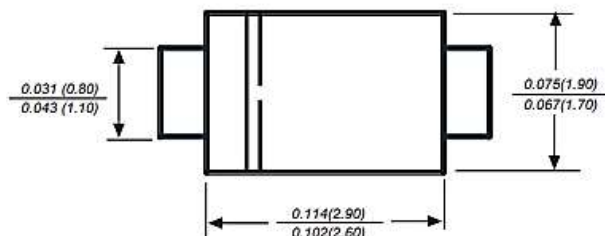
## PART CODE GUIDE

**RFQ**  
[Request For Quotation](#)

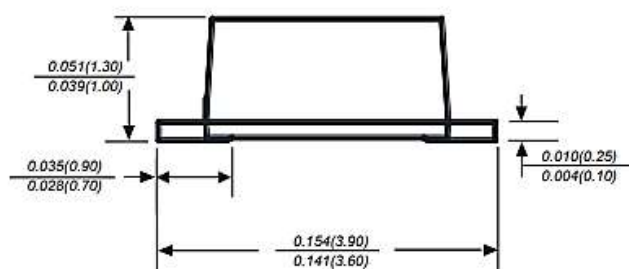
CODE	NAME	KEY SPECIFICATION OPTION
SM	Product Series Code	SMD General Purpose Silicon Rectifier, Case SOD-123FL, 2 Pads
4004PL	Parameters Code	Letter or Digits (A~Z, a~z or 0~9)
00S0	Internal Control Code	Letter or Digits (A~Z, a~z or 0~9)
A4	Marking Code	Marking "A4"
XX	Special/Custom Parameters Code	Letter or Digits (A~Z, a~z or 0~9) for Special Parametric; Blank: N/A

DIMENSION - Unit: mm, Case SOD-123FL, Inch/mm

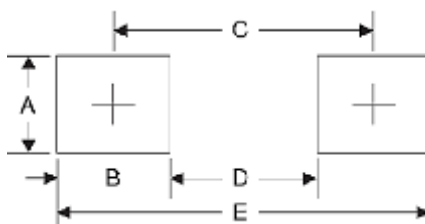
Top View



Side View



Recommend Pad Layout



SYMBOL	A	B	C	D	E
Unit (Inch)	0.047	0.047	0.126	0.079	0.173
Unit (mm)	1.2	1.2	3.2	2	4.4

## 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	0.00053 Ounce, 0.015 Grams

## MAX. RATINGS & ELECTRICAL CHARACTERISTICS

- 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%.

PARAMETER	SYMBOLS	VALUE	UNITS
Maximum Average Forward Rectified Current at TL (NOTE 1)	I (AV)	1.0	A
Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed On Rated Load (JEDEC Method)	I FSM	25	A
Typical Thermal Resistance (Note 2 )	R θJA	180	°C/W
Operating Junction Temperature Range	T J	-55 to +150	°C
Storage Temperature Range	T STG	-55 to +150	°C

Note:

1. Averaged Over Any 20ms Period.
2. Thermal Resistance From Junction To Ambient At 0.375" (9.5mm) Lead Length, P.C.B. Mounted.

# MAX. RATINGS & ELECTRICAL CHARACTERISTICS - FOR DIFFERENT PART CODE

- 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%.

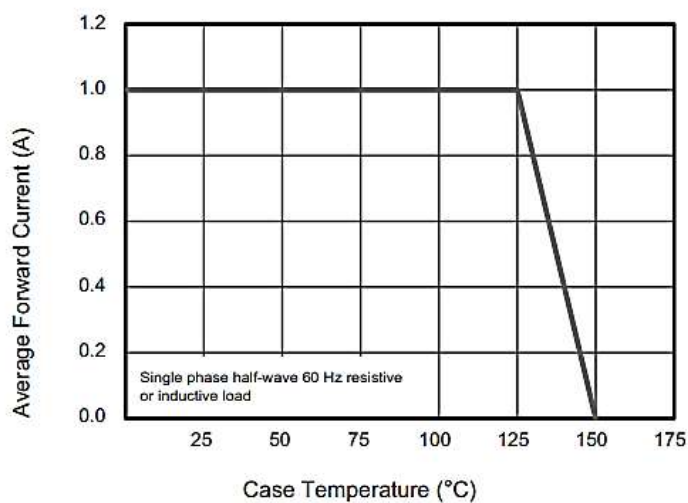
PART CODE	Max. Repetitive Peak Reverse Voltage	Max. RMS Voltage	Max. DC Blocking Voltage	Max. Inst. Forward Voltage @ 1.0A	Maximum DC Reverse Current At Rated DC Blocking Voltage		Typical Junction Cap. (Note 1)	Marking List
					@ 25 °C	@ 125 °C		
	V <sub>RRM</sub>	V <sub>RMS</sub>	V <sub>DC</sub>	V <sub>F</sub>	I <sub>R</sub>		C <sub>J</sub>	
	V	V	V	V	μA		pF	
SM4001PL00S0A1	50	35	50	1.1	10	50	4	A1
SM4002PL00S0A2	100	70	100	1.1	10	50	4	A2
SM4003PL00S0A3	200	140	200	1.1	10	50	4	A3
SM4004PL00S0A4	400	280	400	1.1	10	50	4	A4
SM4005PL00S0A5	600	420	600	1.1	10	50	4	A5
SM4006PL00S0A6	800	560	800	1.1	10	50	4	A6
SM4007PL00S0A7	1000	700	1000	1.1	10	50	4	A7

## Note:

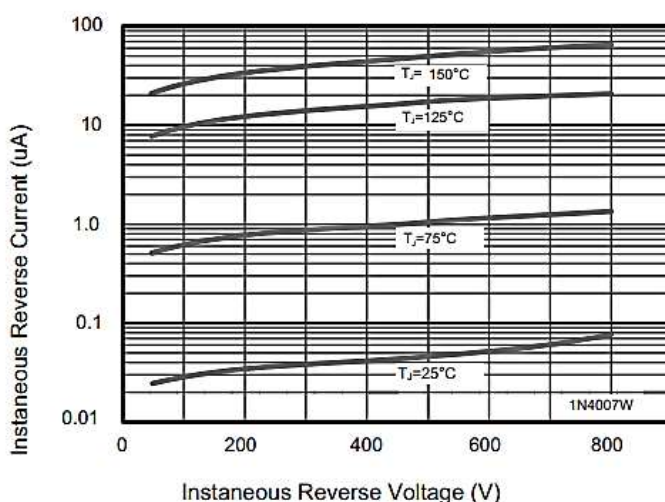
1. Measured at 1MHz And Applied Reverse Voltage Of 4.0V D.C
2. Thermal Resistance From Junction To Ambient At 0.375" (9.5mm)lead Length, P.C.B. Mounted

RATINGS AND CHARACTERISTICS CURVES- For Reference Only, Ta=25°C Unless Otherwise Specified.

**Fig.1 Forward Current Derating Curve**

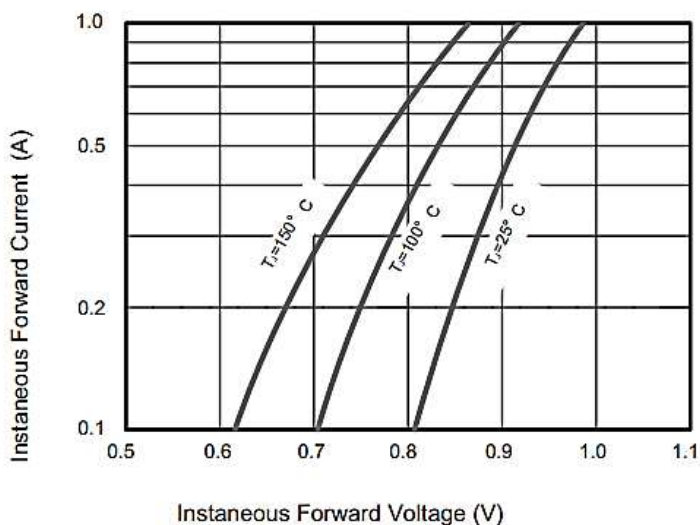


**Fig.2 Typical Instaneous Reverse Characteristics**

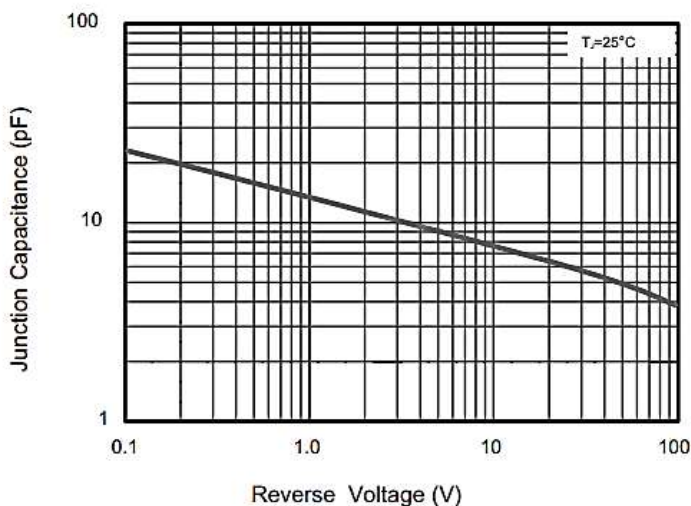


RATINGS AND CHARACTERISTICS CURVES- For Reference Only,  $T_a=25^{\circ}\text{C}$  Unless Otherwise Specified.

**Fig.3 Typical Forward Characteristic**

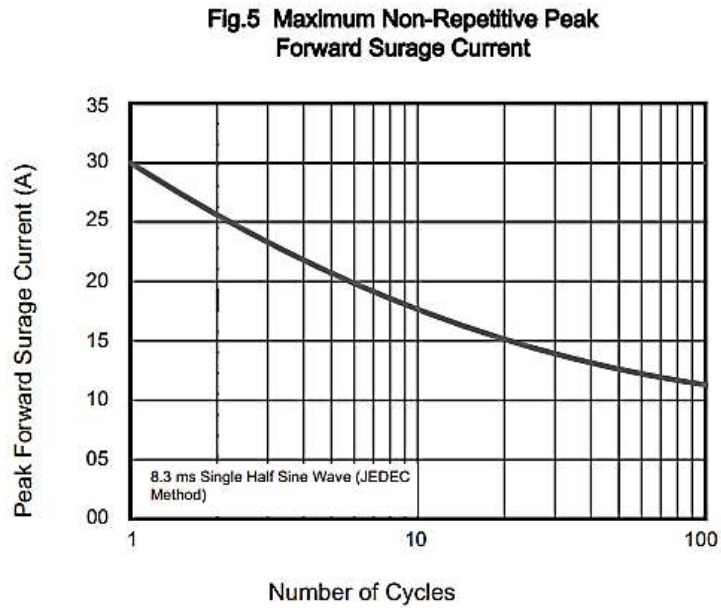


**Fig.4 Typical Junction Capacitance**

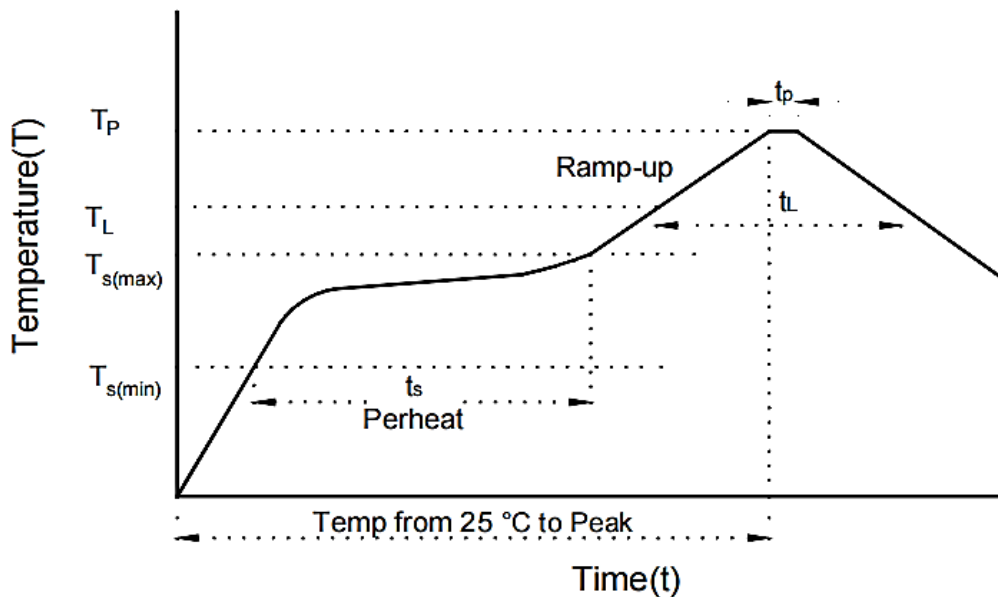




RATINGS AND CHARACTERISTICS CURVES- For Reference Only, Ta=25°C Unless Otherwise Specified.

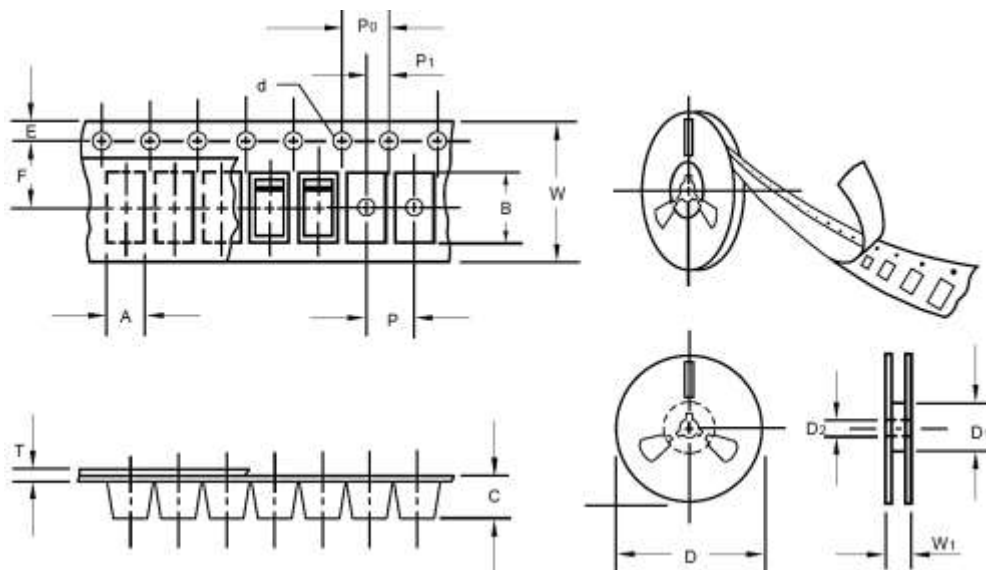


## SUGGESTED REFLOW PROFILE - For Reference Only



PROFILE FEATURE		PB-FREE ASSEMBLY
Average Ramp-up Rate ( $T_L$ Max to $T_p$ )		3°C/second Max
Preheat	Temperature Min ( $T_s$ Min.)	150°C
	Temperature Max ( $T_s$ Max.)	200°C
	Time ( $t_s$ Min. to $t_s$ Max.)	60 ~ 180 seconds
Time maintained above	Temperature ( $T_L$ )	217°C
	Time ( $t_L$ )	60 ~ 150 seconds
Peak/Classification Temperature ( $T_p$ )		260 °C
Time within 5°C of actual Peak Temperature ( $t_p$ )		10 seconds Max.
Ramp-down Rate		6 °C /Second Max.
Time 25 °C to Peak Temperature		8 Minutes Max.
Suggest reflow times		3 Times Max.

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	2.1
Carrier Length	B	0.1	4.0
Carrier Depth	C	0.1	1.60
Sprocket hole	d	0.05	1.55
7"Reel outside diameter	D	2	178
7"Reel inner diameter	D1	Min.	50.0
Feed hole diameter	D2	0.5	13
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	3.5
Punch hole pitch	P	0.1	4
Sprocket hole pitch	P0	0.1	4
Embossment center	P1	0.1	2
Overall tape thickness	T	0.1	0.25
Tape width	W	0.3	8.15
Reel width	W1	1	10.5
Qty. Per Reel (pcs)	3000		

## IMPORTANT NOTES AND DISCLAIMER

1. **ROHS COMPLIANCE:** The levels of RoHS restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU RoHS Directive (EU) 2015/863 EC (RoHS3). RoHS Test Report for this product can be obtained at Download Center.
2. **REACH COMPLIANCE:** REACH substances of high concern (SVHCs) information is available for this product. Since the European Chemical Agency (ECHA) has published notice of their intent to frequently revise the SVHC listing for the foreseeable future, REACH Test Report for this product can be obtained at Download Center.
3. All Product parametric performance is indicated in the Electrical Characteristics for the listed herein test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.
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