SPECIFICATION SHEET

SMD FAST SWITCHING DIODES CASE SOT-23 MMBD SERIES

SPECIFICATION SHEET NO.	S0510 – MMBD7000S00M5C	
ORIGINAL MFG/PART NO.	MDD Diodes/MMBD7000	
NEXTGEN PART CODE	MMBD7000S00M5C	Indicate This Code For RFQ /Order
DATE	May. 10, 2025	
REVISION	A3	Updated With Most Recent Data
DESCRIPTION AND MAIN PARAMETRICS	SMD Fast Switching Diodes, Case SOT-23 MMBD Series, 3 Pads Working Peak Reverse Voltage (V_{RWM}): 75V Max. Non-Repetitive Peak Forward Surge Current (I_{FSM}): 2.0A Max. Junction Temperature Range (T_J): +150°C Package in Tape/Reel, 3000pcs/Reel RoHS/RoHS III compliant, RoHS Annex III lead Exemption (Exempt per RoHS EU 2015/863) and Halogen Free (HF)	
CUSTOMER		
CUSTOMER PART NUMBER		
CROSS REF. PART NUMBER		
MEMO		

VENDOR APPROVE
Issued/Checked/Approved NextGen Components, Inc. Mandy Xu NextGen Components, Inc. Ruby Zhang NextGen Components, Inc. Jack Zhang
Effective Date: May. 10, 2025

CUSTOMER APPROVE
Date:

MAIN FEATURE

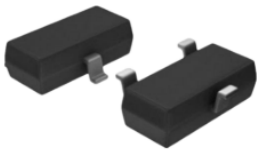


Image shown is a representation only. Exact specifications should be obtained from the product dimension.

- Dual Switching Diode
- Fast Switching Speed
- Case Type SOT-23
- Surface Mount Package Ideally Suited For Automatic Insertion
- 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)

APPLICATION

- For General Purpose Switching Applications

ELECTRICAL CHARACTERISTICS

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

HOW TO ORDER

- Please Follow Up Part Code Guide And Indicate NextGen Part Code MMBD7000S00M5C For RFQ and Order.

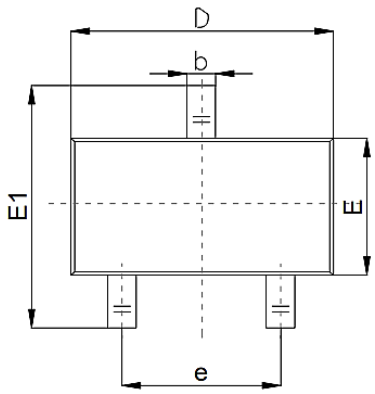
PART CODE GUIDE

RFQ
Request For Quotation

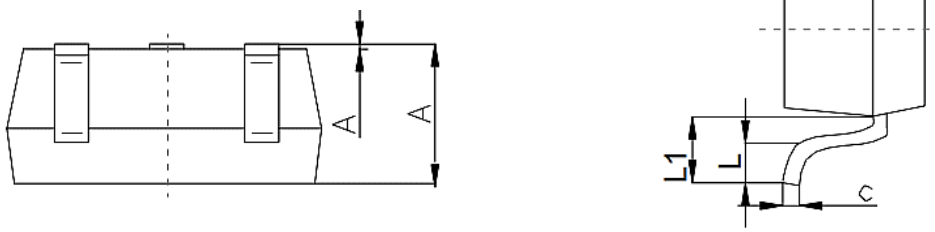
CODE	NAME	KEY SPECIFICATION OPTION
MMBD	Product Series Code	SMD Fast Switching Diodes, Plastic-Encapsulate, 3 Pads
7000	Parameters Code	Letter or Digits (A~Z, a~z or 0~9)
S00	Internal Control Code	Letter or Digits (A~Z, a~z or 0~9)
M5C	Marking Code	Marking “M5C”
XX	Special/Custom Parameters Code	Letter or Digits (A~Z, a~z or 0~9) for Special Parametric; Blank: N/A

DIMENSION - Unit: mm, Case SOT-23

Top View

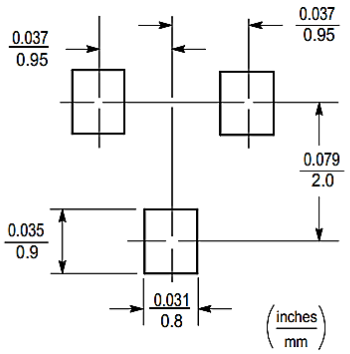


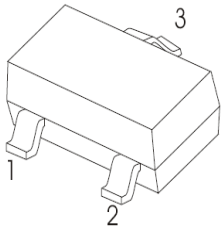
Side View



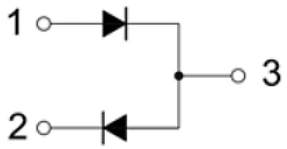
SYMBOL	DIMENSION (MM)		
	MIN.	TYP.	MAX.
A	0.65		1.40
A1	0.00		0.20
b	0.30		0.55
c	0.08		0.20
D	2.70		3.10
E	1.15		1.65
E1	2.10		2.80
e	1.70		2.10
L	0.15		0.50
L1	0.35		0.70
θ	0°		12°

Recommend Pad Layout – Inch/mm, Tolerance: ±0.05mm





1. Gate (G) 2. Source (S) 3. Drain (D)



Equivalent Circuit

MECHANICAL CHARACTERISTICS

CASE	FLAMMABILITY RATING	TERMINALS	MARKING
JEDEC SOT-23 molded plastic body	UL 94V-0	Solder plated, solderable per MIL-STD-750,Method 2026	M5C

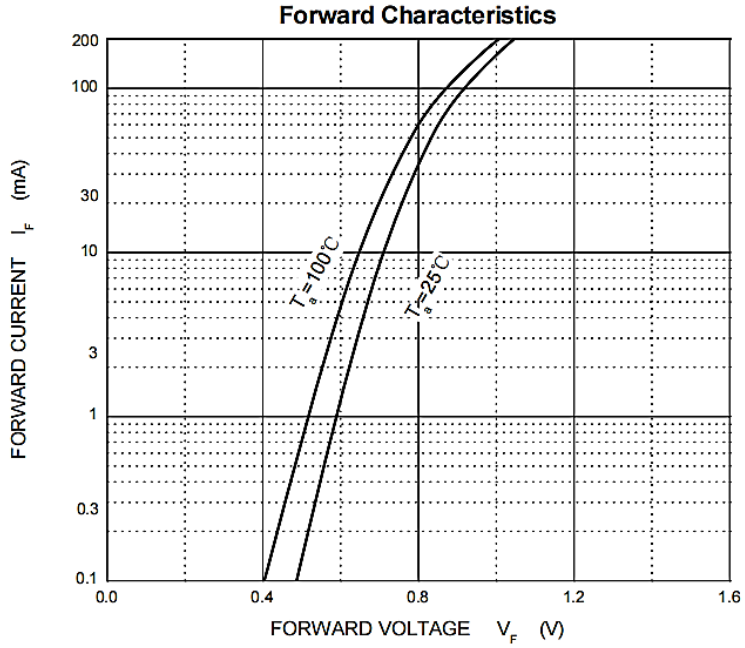
MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS, SINGLE DIODE- T_A=25°C

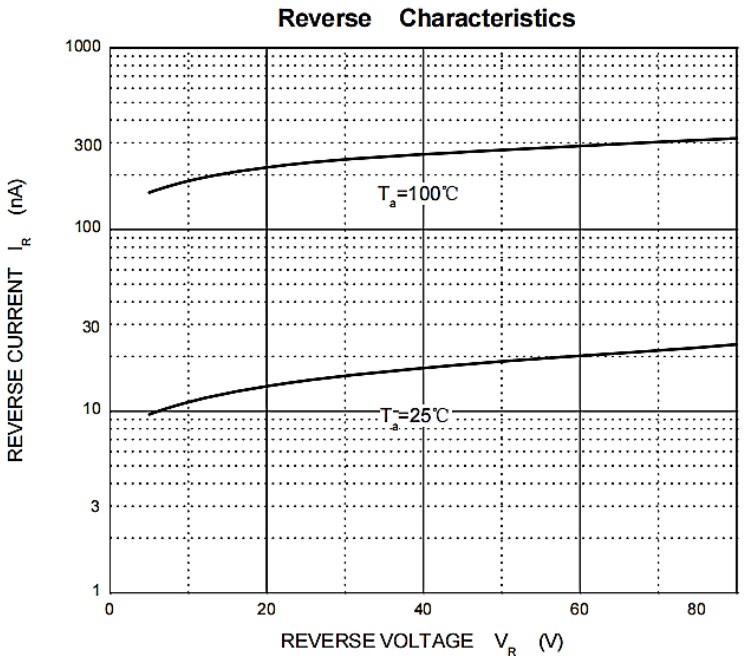
PARAMETER	SYMBOLS	VALUE	UNITS
Non-Repetitive Peak Reverse Voltage	V_{RM}	100	V
Peak Repetitive Peak Reverse Voltage	V_{RRM}	75	V
Working Peak Reverse Voltage	V_{RWM}	75	V
RMS Reverse Voltage	$V_{R(RMS)}$	53	V
Average Rectified Output Current	I_O	200	mA
Non-Repetitive Peak Forward Surge Current @8.3ms	I_{FSM}	2.0	A
Power Dissipation	P_D	225	mW
Thermal Resistance From Junction To Ambient	$R_{\Theta JA}$	556	°C/W
Junction Temperature Range	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 ~+ 150	°C

ELECTRICAL CHARACTERISTICS- T_A=25℃ unless otherwise specified, For Reference Only

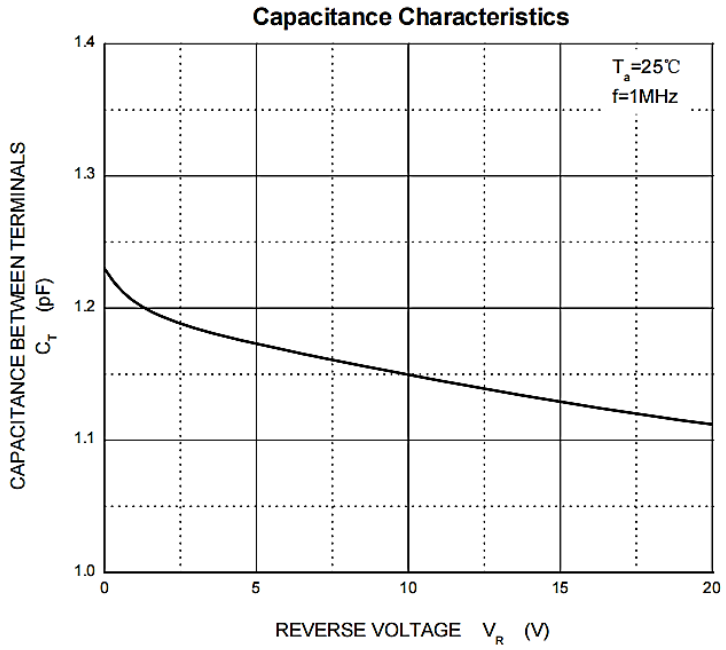
PARAMETER	SYMBOLS	VALUE			UNIT	TEST CONDITIONS
		Min.	Typ.	Max.		
Reverse Breakdown Voltage	V(BR)	100			V	I_R= 100μA
Reverse Current	I_{R1}			1.0	μA	V_R=50V
	I_{R2}			3.0		V_R=100V
Forward Voltage	V_F	0.55		0.7	V	I_F=1mA
		0.67		0.82		I_F=10mA
		0.75		1.0		I_F=100mA
Capacitance Between Terminals	C_T			2	pF	V_R = 0V, f=1MHz
Reverse Recovery Time	t_{rr}			4	ns	I_F =I_R=10mA, V_R=6V Irr=0.1 X I_R, R_L =100Ω

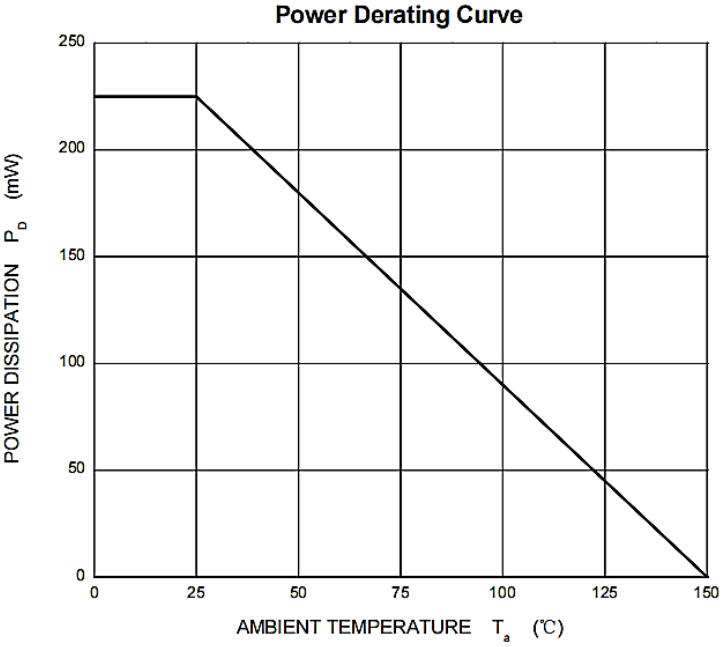
TYPICAL CHARACTERISTICS CURVES- For Reference Only, Ta=25℃ Unless Otherwise Specified.



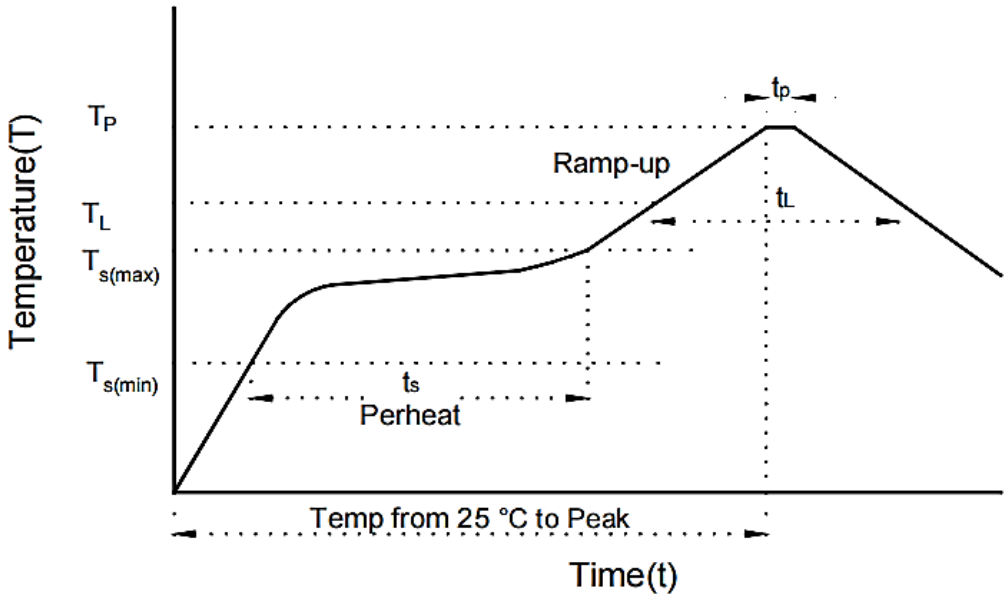


TYPICAL CHARACTERISTICS CURVES- For Reference Only, Ta=25℃ Unless Otherwise Specified.



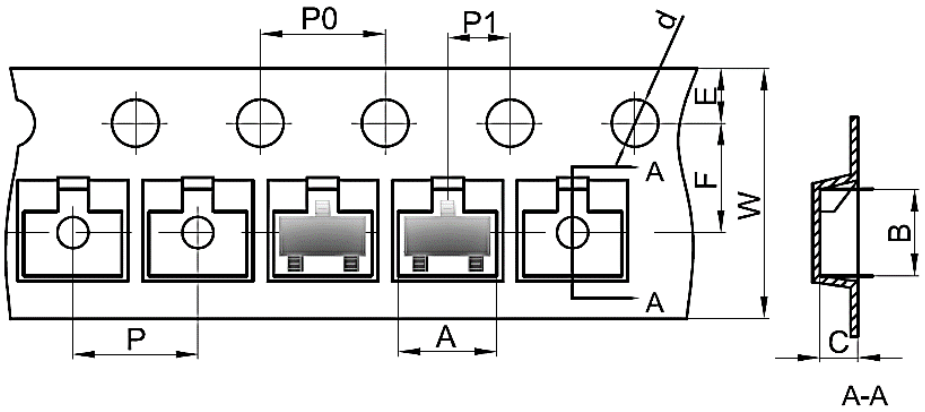


SUGGESTED REFLOW PROFILE - For Reference Only

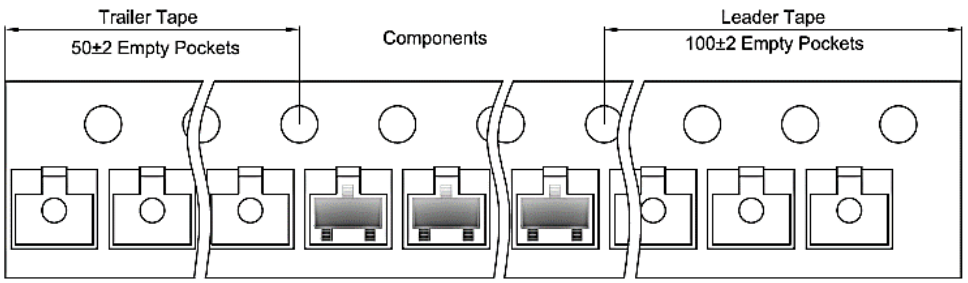


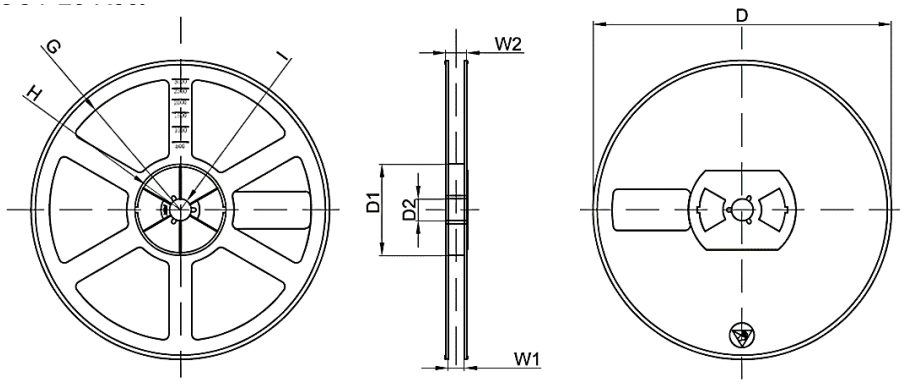
PROFILE FEATURE		PB-FREE ASSEMBLY
Average Ramp-up Rate (T_L Max to T_p)		3°C/second Max
Preheat	Temperature Min (T_s Min.)	150°C
	Temperature Max (T_s Max.)	200°C
	Time (t_s Min. to t_s Max.)	60 ~ 180 seconds
Time maintained above	Temperature (T_L)	217°C
	Time (t_L)	60 ~ 150 seconds
Peak/Classification 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



Case	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.5	1.75	3.5	4.0	4.0	2.0	8.0





Reel Size	D	D1	D2	G	H	I	W1	W2	Qty. (pcs)
7”	Ø178	54.4	13.0	R78.0	R25.6	R6.5	9.5	12.3	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 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 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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