



THE DATASHEET OF S2MB

SPECIFICATION SHEET

SPECIFICATION SHEET NO.	N0929- SMBS2MB000S20A
DATE	Sept. 29, 2021
REVISION	A0
DESCRIPTION	SMD General Purpose Rectifier, SMB/DO-214AA series, S2MB Type, 2 Pads Reverse Voltage 1000V Max. Forward Current 2.0A 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 S2MB
PART CODE	SMBS2MB000S20A

VENDOR APPROVE			
Issued/Checked/Approved			
DATE: Sept. 29, 2021			

CUSTOMER APPROVE
DATE:

SMD GENERAL PURPOSE RECTIFIER SMB SERIES

MAIN FEATURE

- The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- Low reverse leakage
- Open Junction chip
- High forward surge current capability
- High temperature soldering guaranteed: 250°C/ 10 seconds at terminals



APPLICATION

- For printed circuit board

PART CODE GUIDE

RFQ

[Request For Quotation](#)

SMB	S2MB000	S	20A
1	2	3	4

1) **SMB**: SMD General Purpose Rectifier, SMB/DO-214AA series

2) **S2MB000**: Type Code for original part number S2MB

3) **S**: Package code, Tape/reel, 3000pcs/reel.

4) **20A**: Specification code for Forward Current 2.0A Max. Reverse Voltage 1000V Max.

MORE ITEMS AVAILABLE

SMBS2AB000S205	SMBS2BB000S210	SMBS2DB000S220	SMBS2GB000S240	SMBS2JB000S260
SMBS2KB000S280	SMBS2MB000S20A			
SMBS3AB000S305	SMBS3BB000S310	SMBS3DB000S320	SMBS3GB000S340	SMBS3JB000S360
SMBS3KB000S380	SMBS3MB000S30A			

SMD GENERAL PURPOSE RECTIFIER SMB SERIES

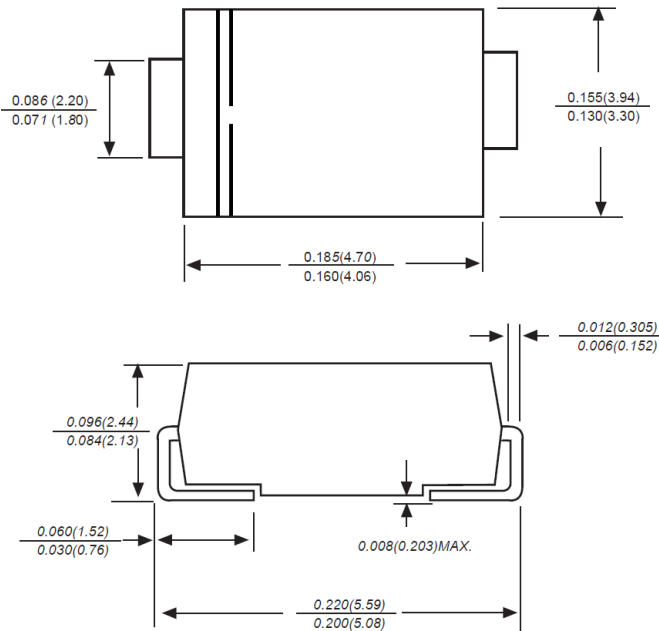
DIMENSION (Unit: Inch/mm)

Image for reference

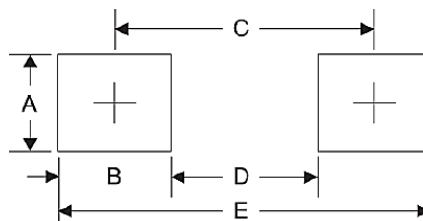


Marking: S2MB

SMB/DO-214AA



Recommend Pad Layout



Symbol	Unit (inch)	Unit (mm)
A	0.110	2.80
B	0.094	2.40
C	0.181	4.60
D	0.086	2.20
E	0.276	7.00

SMD GENERAL PURPOSE RECTIFIER SMB SERIES

MECHANICAL DATA

Case	Terminals	Polarity	Mounting Position	Weight per piece
JEDEC SMB/DO-214AA molded plastic body	Solder plated, Solderable per MIL-STD-750, Method 2026	Polarity symbol marking on case	Any	0.0030 Ounce, 0.090 grams

MAX. RATING & CHARACTERISTICS

Parameter		SYMBOLS	VALUE			UNITS
			Min.	Typical	Max.	
Repetitive peak reverse voltage		V _{RRM}			1000	Volts
RMS voltage		V _{RMS}			700	Volts
DC blocking voltage		V _{DC}			1000	Volts
Average forward output rectified current		I _{AV}			2.0	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 2.0A		V _F			1.1	Volts
DC reverse current at rated DC blocking voltage	TA=25°C	I _R			5.0	μA
	TA=125°C				100	μA
Junction capacitance (Note 3)		C _J		25		pF
Thermal resistance (Note 4)		R _{QJA} R _{QJC}		60 20		°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%.
- Reverse recovery condition IF=0.5A,IR=1.0A,Irr=0.25A
- Measured at 1.0MHz and applied reverse voltage of 4.0Voltage
- P.C.B. mounted with 0.2x0.2"(5.0x5.0mm) copper pad areas.

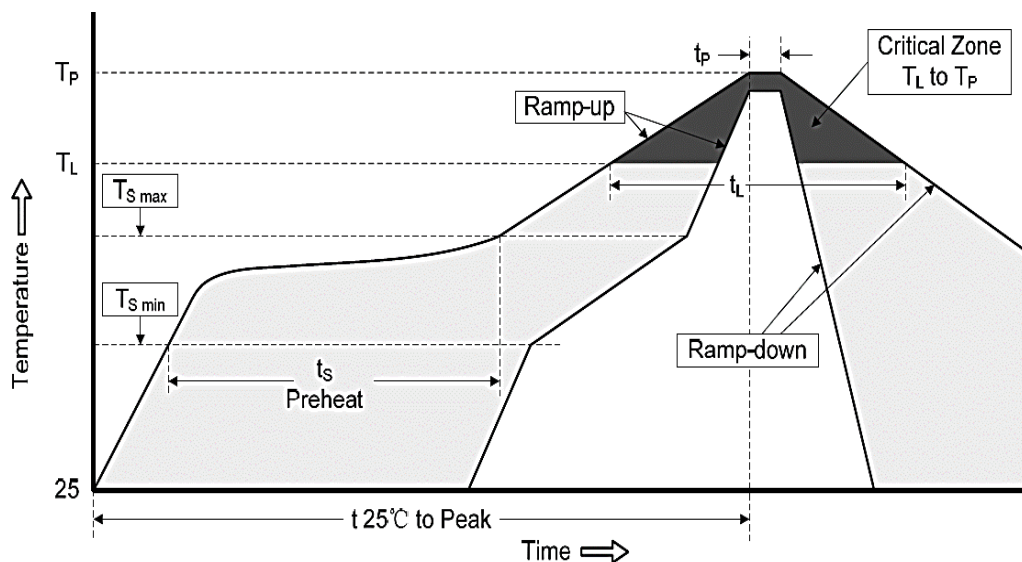
SMD GENERAL PURPOSE RECTIFIER SMB SERIES

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 APPENIOXC
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

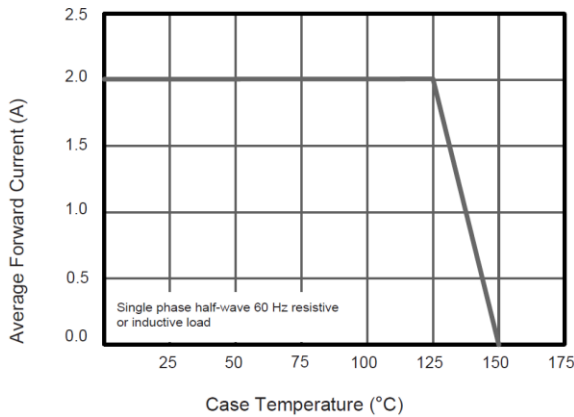


Fig.2 Typical Instantaneous Reverse Characteristics

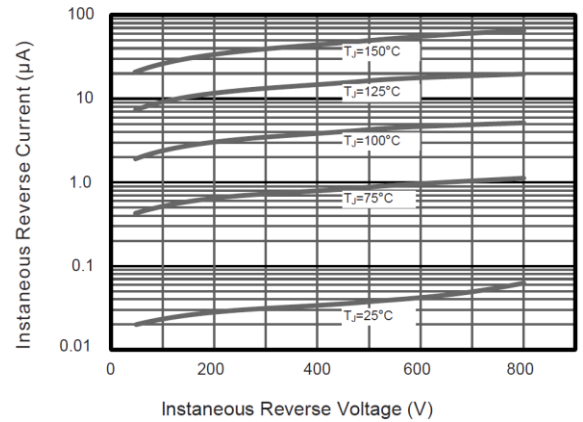


Fig.3 Typical Forward Characteristic

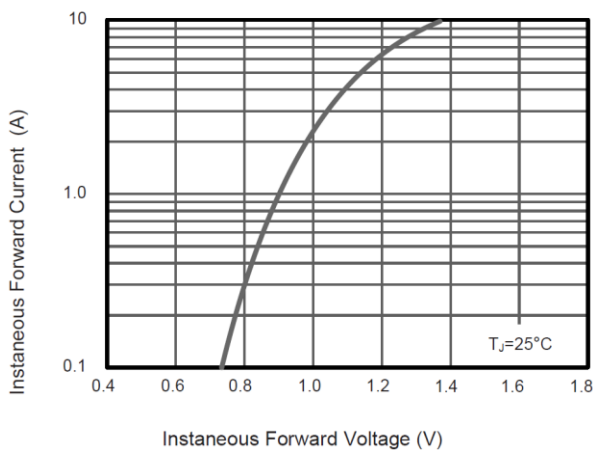


Fig.4 Typical Junction Capacitance

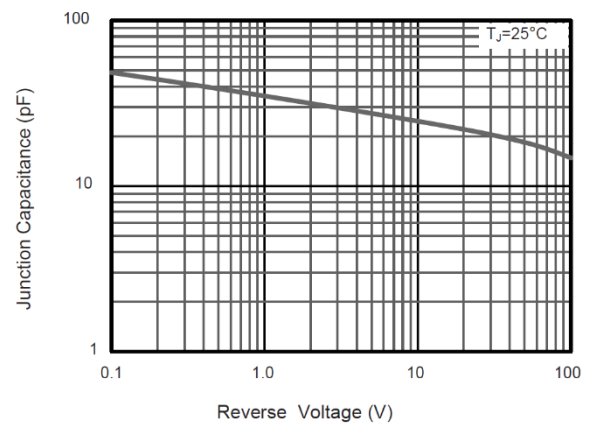
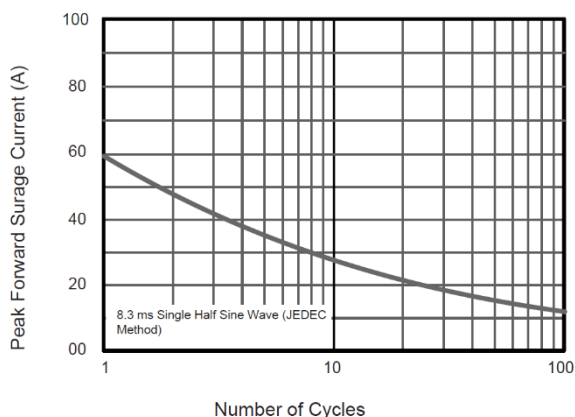


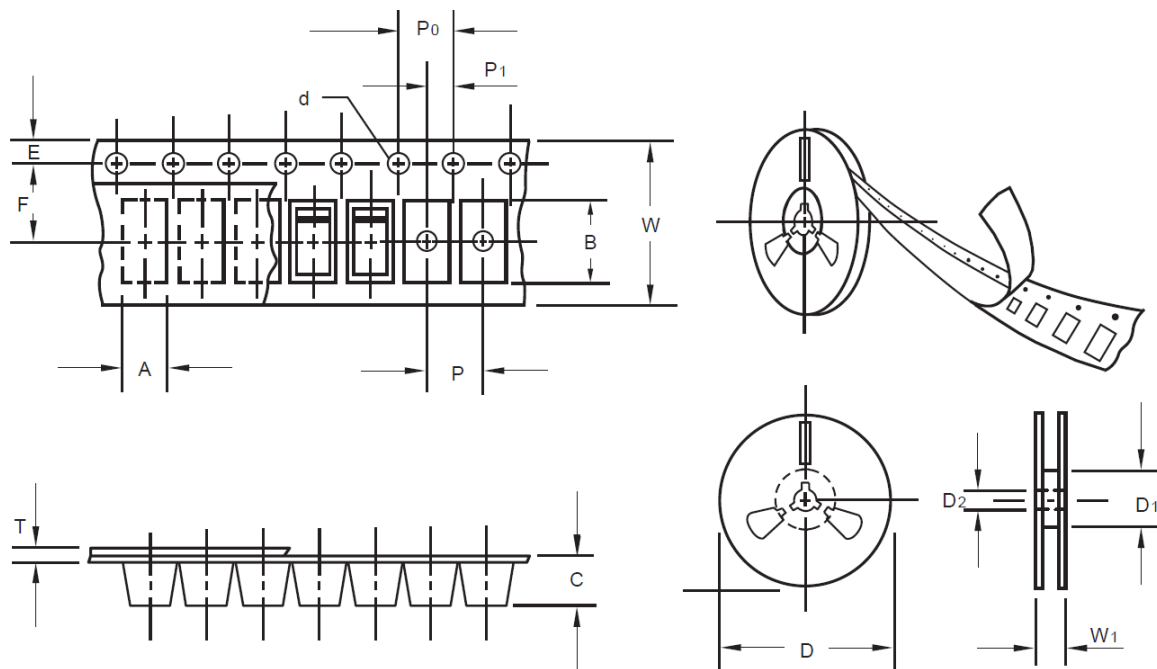
Fig.5 Maximum Non-Repetitive Peak Forward Surge Current



SMD GENERAL PURPOSE RECTIFIER SMB SERIES

TAPE/REEL (Unit: mm)

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



Item	Symbol	Tolerance	SMB/DO-214AA
Carrier width	A	0.1	3.81
Carrier Length	B	0.1	5.41
Carrier Depth	C	0.1	2.42
Sprocket hole	d	0.05	1.50
13"Reel outside diameter	D	2.0	330.00
13"Reel inner diameter	D1	Min.	50.00
7"Reel outside diameter	-	-	-
7"Reel inner diameter	-	-	-
Feed hole diameter	D2	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	5.55
Punch hole pitch	P	0.1	8.00
Sprocket hole pitch	P0	0.1	4.00
Embossment center	P1	0.1	2.00
Overall tape thickness	T	0.1	0.30
Tape width	W	0.3	12.00
Reel width	W1	1.0	12.30

SMD GENERAL PURPOSE RECTIFER SMB SERIES

SPQ PACKAGE for Reference

Item	Unit	Value
Case Code		SMB/DO-214AA
Reel Size	Inch	13
Reel Size	mm	330
Tape Space	mm	/
SPQ /Reel	pcs	3000
Weigh /SPQ	LBs	4.63
Weigh /SPQ	KGs	2.10
Qty. Per Box	pcs	6,000
Inner Box	Inch	L13.2*W13.2*H1.95

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