NextGen Components,Inc.

PART CODE: SB20100L00S100

SPECIFICATION SHEET

SPECIFICATION SHEET NO.	R0530- SB20100L00S100	
DATE	May 30, 2024	
REVISION	A2	Updated With Most Recent Data
DESCRIPTION AND MAIN PARAMETRICS	SMD Schottky Barrier Rectifier, 3 pads, Case TO-277, SB20 series Repetitive Peak Reverse Voltage 100V Max. Average Rectified Output Current 20A Operating Temp. Range -55°C ~+150°C, Package in Tape/Reel, 5000pcs/Reel RoHS III/REACH Compliant and Halogen Free (HF)	
CUSTOMER		
CUSTOMER PART NO.		
CROSS REF. PART NO.		
ORIGINAL MFG/PART NO.	MDD Diodes/SB20100L	
PART CODE	SB20100L00S100	

VENDOR APPROVE			
Issued/Checked/Approved	Mandy Xu	Ruby Zhang	Jack Zhang
DATE: May 30, 2024			

CUSTOMER APPROVE
DATE:

NextGen Components, Inc. sales@NextGenComponent.com www.NextGenComponent.com

SMD SCHOTTKY BARRIER RECTIFIER SB20 SERIES CASE TO-277

MAIN FEATURE

- The Plastic Package Carries Underwriters Laboratory
- Flammability Classification 94V-0
- Low Forward Voltage Drop and High Forward Surge Current Capability
- Built-in Strain Relief And Ideal For Automated Placement
- High Temperature Soldering Guaranteed: 250°C/10 Seconds At Terminals
- Surface Mount Package Ideally Suited For Automatic Insertion
- REACH/RoHS III Complaint And Halogen Free
- Cross Main Competitor Parts In Market

• APPLICATION

- For Surface Mounted Applications

ELECTRICAL CHARACTERISTICS

- See Page 4

HOW TO ORDER

- Please Follow Up Part Code Guide And Indicate Pat Code When You Order Or RFQ For Custom Specification

PART CODE GUIDE

RFQ
Request For Quotation

CODE	NAME	KEY SPECIFICATION OPTION
SB20	Product Series Code	SMD Schottky Barrier Rectifier, 3 pads, Forward Current 20A.
100	Reverse Voltage Code	100: 100V
L0	Case Code	L0: Case TO-277
0S	Internal Control Code	Custom letter A~Z, a-z or Digits (0-9)
100	DC Blocking Voltage Code	100: 100V

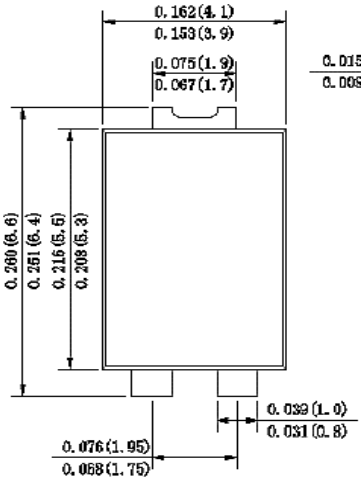
SMD SCHOTTKY BARRIER RECTIFIER SB20 SERIES CASE TO-277

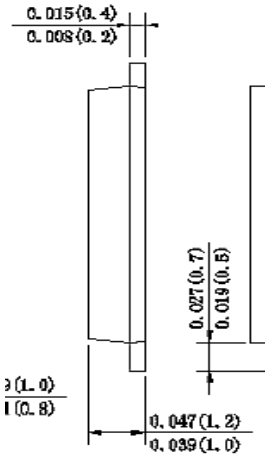
DIMENSION (Unit: Inch/mm)

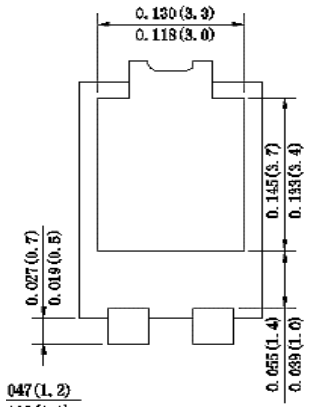
Image for reference

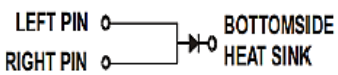
Marking: SB20100L

TO-277

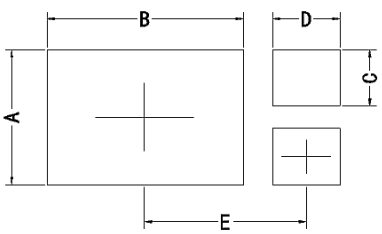








Recommend Pad Layout



Symbol	Unit (inch)	Unit (mm)
A	0.142	3.60
B	0.211	5.35
C	0.059	1.50
D	0.073	1.85
E	0.169	4.30

SMD SCHOTTKY BARRIER RECTIFIER SB20 SERIES CASE TO-277

MECHANICAL DATA

CASE	TERMINALS	POLARITY	MOUNTING POSITION	WEIGHT PER PIECE
JEDEC TO-277 Molded Plastic Body	Solder Plated, Solderable Per MIL-STD-750, Method 2026	Polarity Symbol Marking On Case	Any	0.0030 Ounce, 0.092 grams

MAXIMUM RATINGS AND 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 Repetitive Peak Reverse Voltage	V_{RRM}	100	V
Maximum DC Blocking Voltage	V_{DC}	100	V
RMS Reverse Voltage	V_{RMS}	70	V
Average Rectified Output Current	I_O	20	A
Non-repetitive Peak Forward Surge 8.3ms Single Half Sine-wave Superimposed On Rated Load (JEDEC Method)	I_{FSM}	250	A
Typical Thermal Resistance	$R_{\Theta JA}$	60	°C/W
Operating Junction Temperature Range	T_J	-55 ~ +150	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

CHARACTERISTICS - @ 25 °C

PARAMETER	SYMBOLS	VALUE			UNIT	CONDITION
		MIN.	TYP.	MAX.		
Forward Voltage Drop	V_F	-	-	0.85	V	@20A
Peak Reverse Current At	I_R	-	-	10	µA	@T_A= 25°C
Rated DC Blocking Voltage		-	-	20	mA	@T_A= 125°C

SMD SCHOTTKY BARRIER RECTIFIER SB20 SERIES CASE TO-277

TYPICAL CHARACTERISTIC CURVES - For Reference Only

FIG. 1- DERATING CURVE OUTPUT RECTIFIED CURRENT

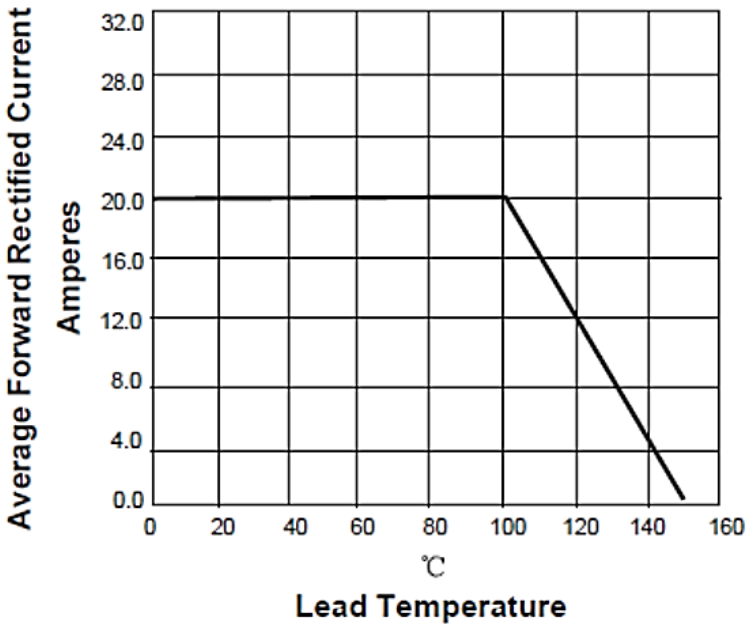
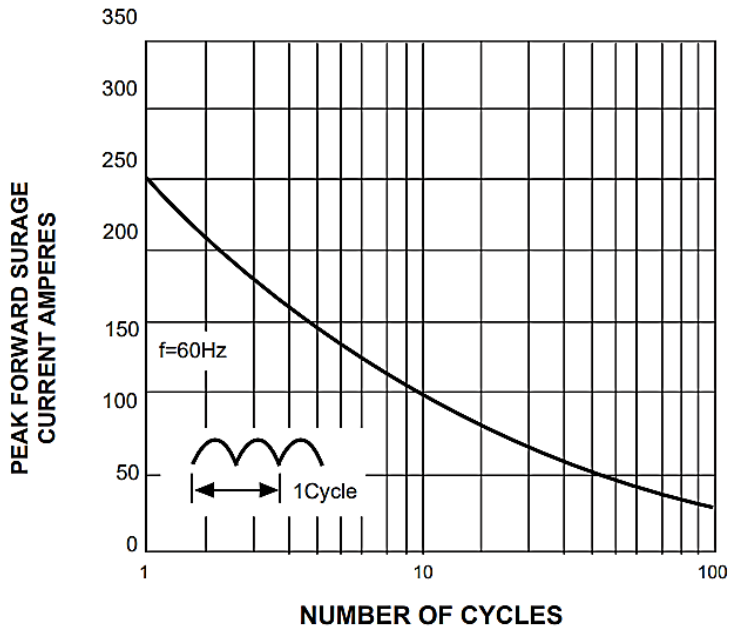


FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT PERLEG



SMD SCHOTTKY BARRIER RECTIFIER SB20 SERIES CASE TO-277

TYPICAL CHARACTERISTIC CURVES - For Reference Only

FIG. 3-TYPICAL FORWARD VOLTAGE CHARACTERISTICS

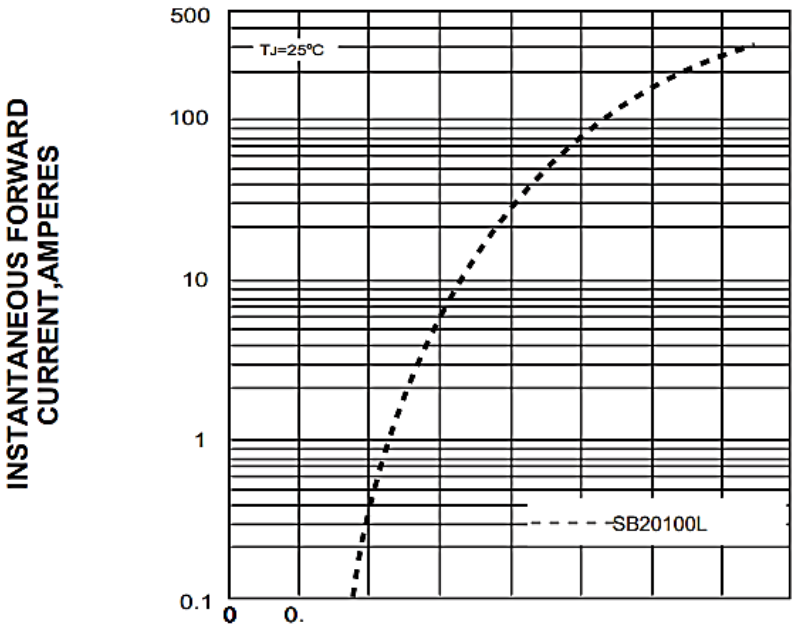
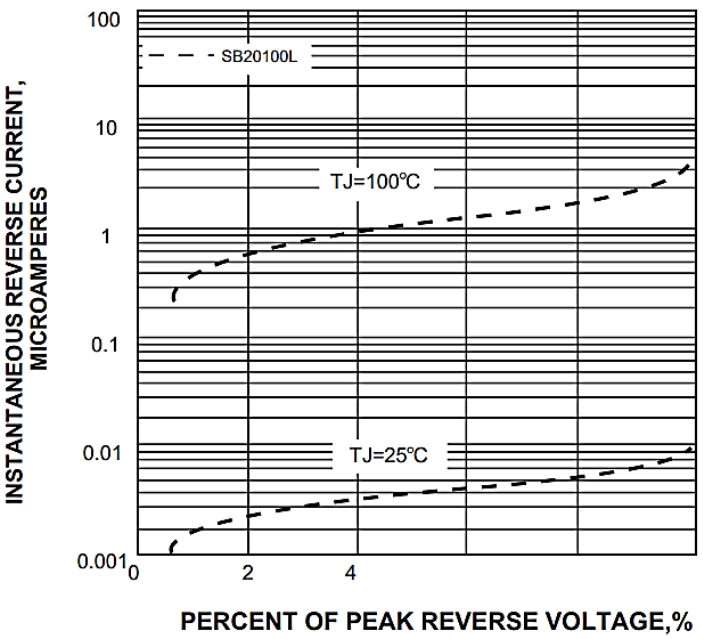


FIG. 4-TYPICAL REVERSE LEAKAGE CHARACTERISTICS



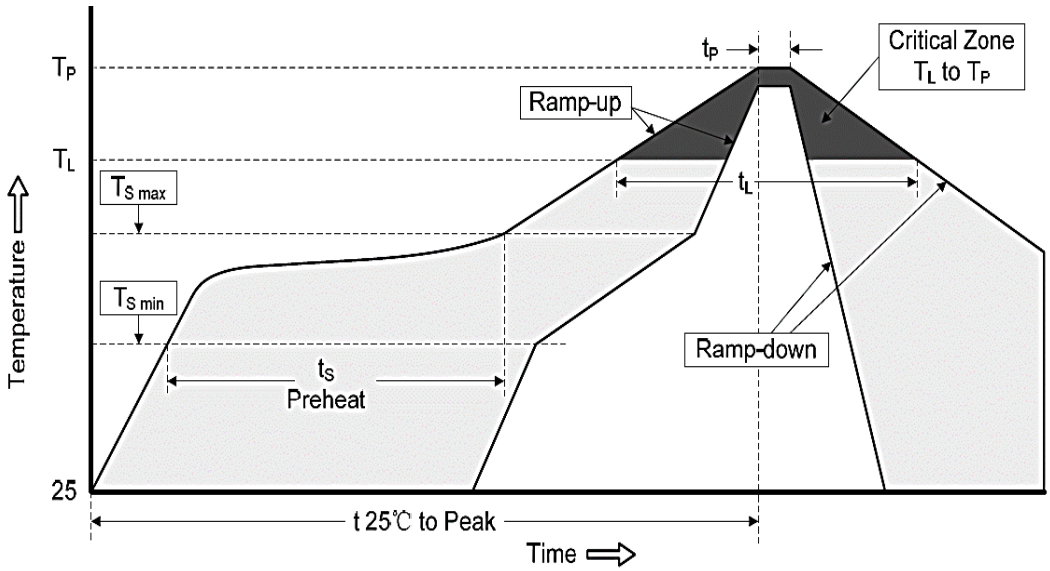
SMD SCHOTTKY BARRIER RECTIFIER SB20 SERIES CASE TO-277

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	T_A=100°C for 1000 Hours at V_R=80% Rated V_R	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, T_A=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	T_A=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 SCHOTTKY BARRIER RECTIFIER SB20 SERIES CASE TO-277

SUGGESTED REFLOW PROFILE - For Reference Only

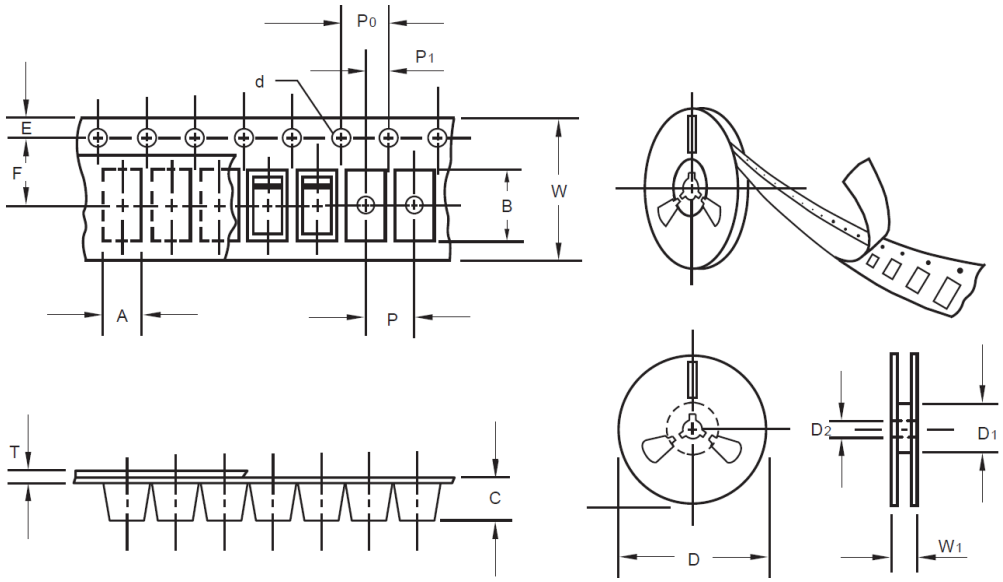


PROFILE FEATURE		PB-FREE ASSEMBLY
Average Ramp-up Rate (Ts Max to Tp)		3℃/second Max
Preheat	Temperature Min (Ts Min.)	150℃
	Temperature Max (Ts Max.)	200℃
	Time (ts Min. to ts Max.)	60 ~ 180 seconds
Time maintained above	Temperature (T_L)	217℃
	Time (t_L)	60 ~ 150 seconds
Peak/Classification Temperature (Tp)		260 ℃
Time within 5℃ of actual Peak Temperature (tp)		20 ~ 40 seconds
Ramp-down rate		6 ℃ /Second Max.
Time 25 ℃ to Peak Temperature		8 minutes Max.
Suggest reflow times		3 Times Max.

SMD SCHOTTKY BARRIER RECTIFIER SB20 SERIES CASE TO-277

TAPE/REEL - Unit: mm

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



ITEM	SYMBOL	TOLERANCE	TO-277
Carrier width	A	0.1	4.45
Carrier Length	B	0.1	7.0
Carrier Depth	C	0.1	1.60
Sprocket hole	d	0.05	1.55
13” Reel outside diameter	D	2.0	330.00
13” 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	7.50
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	0.25
Tape width	W	0.3	12.00
Reel width	W1	1.0	12.30
MPQ/Reel	5000pcs/Reel		

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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