NextGen Components,Inc.

PART CODE: B5818W1000S030

SPECIFICATION SHEET

SPECIFICATION SHEET NO.	R0605- B5818W1000S030	
DATE	June 5, 2024	
REVISION	A2	Updated With Most Recent Data
DESCRIPTION AND MAIN PARAMETRICS	SMD Schottky Diodes 2 Pads, Case SOD-123 B581 Series, Repetitive Peak Reverse Voltage 30V Max. Average Rectified Output Current 1.0A Max. Operating Temp. Range -55°C ~+125°C Package in Tape/Reel, 3000pcs/Reel RoHS III/REACH Compliant and Halogen Free (HF)	
CUSTOMER		
CUSTOMER PART NO.		
CROSS REF. PART NO.		
ORIGINAL MFG/PART NO.	MDD Diodes/B5818W	
PART CODE	B5818W1000S030	

VENDOR APPROVE
Issued/Checked/Approved   
DATE: June 5, 2024

CUSTOMER APPROVE
DATE:

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

SMD SCHOTTKY DIODES B581 SERIES CASE SOD-123

MAIN FEATURE

- Fast Switching Speed
- Conductance
- Surface Mount Package Ideally Suited for Automatic Insertion
- REACH/RoHS III Complaint and Halogen Free
- Cross Main Competitor Parts in Market

APPLICATION

- For SMD application

ELECTRICAL CHARACTERISTICS

- See Page 5~ Page 6 For Different Part Code

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
B581	Product Series Code	SMD Schottky Diodes, Forward Current 1.0A
8	Repetitive Peak Reverse Voltage Code	7: 20V Max. ; 8: 30V Max.; 9: 40V Max.;
W1	Case Code	W0: Case SMF/SOD-123FL; W1: Case SOD-123; WS: Case SOD-323
00S	Internal Control Code	Custom letter A~Z, a-z or Digits (0-9)
030	Reverse Breakdown Voltage Code @ I_R=1mA	020: 20V; 030: 30V; 040: 40V

SMD SCHOTTKY DIODES B581 SERIES CASE SOD-123

DIMENSION (Unit: Inch/mm)

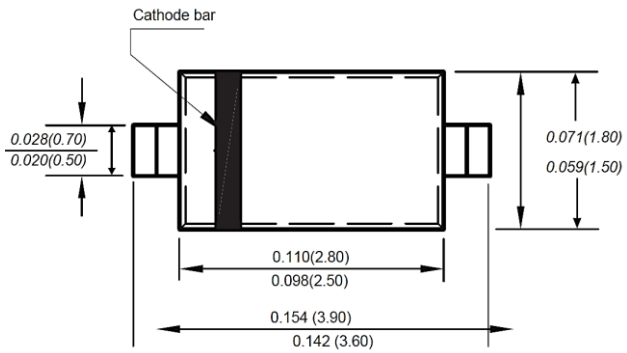
Image for reference

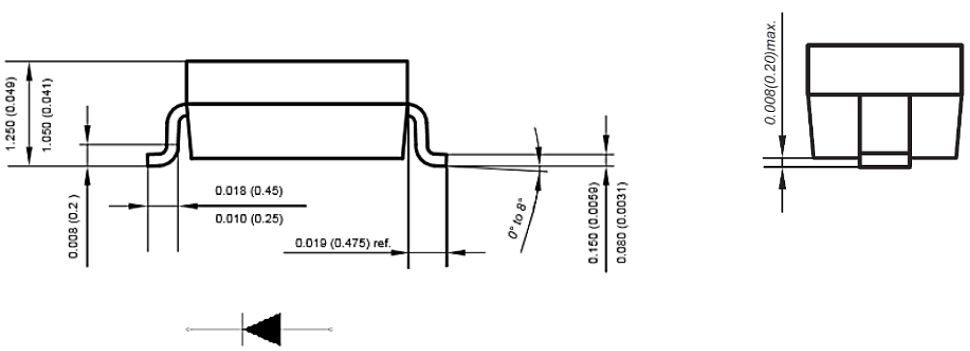
Marking:

See Page -6 Marking List

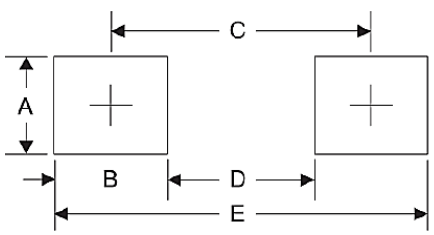
For different Part code

SOD-123





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 SCHOTTKY DIODES B581 SERIES CASE SOD-123

MECHANICAL DATA

CASE	TERMINALS	POLARITY	MOUNTING POSITION	WEIGHT PER PIECE
JEDEC SOD-123 Molded Plastic Body	Solder plated, Solderable per MIL-STD-750, Method 2026	Polarity Symbol Marking On Case	Any	0.00056 Ounce, 0.01600 Grams

ABSOLUTE MAXIMUM RATINGS - @ 25 °C

PARAMETER	SYMBOLS	VALUE	UNITS
Average Rectified Output Current	I_0	1.0	A
Continuous Forward Current	I_{FRM}	1.5	A
Non-Repetitive Peak Forward Surge Current at 8.3ms	I_{FSM}	25	A
Power Dissipation	P_D	500	mW
Typical Thermal Resistance (Note 1)	$R_{\Theta JA}$	160	°C/W
Operating Junction e Temperature Range	T_J	-55 to +125	°C
Storage Temperature Range	T_{STG}	-55 to +125	°C

Note:

1. P.C.B. Mounted with 0.20" X 0.20" (5.08 X 5.08mm) Copper Pad Areas.

CHARACTERISTICS - @ 25 °C

PARAMETER		SYMBOLS	VALUE	UNITS
Peak Reverse Current	@V_R=20V, T_j=25°C	I_R	1.0	mA
	@V_R=20V, T_j=100°C		10.0	
Typical Junction Capacitance		C_J	110	pF

SMD SCHOTTKY DIODES B581 SERIES CASE SOD-123

RATINGS AND ELECTRICAL CHARACTERISTICS - @ 25 °C - FOR DIFFERENT PART CODE

PART CODE	Max. Repetitive Peak Reverse Voltage	Max. RMS Voltage	Reverse Breakdown Voltage	Max. Forward Voltage		Non-Repetitive Peak Reverse Voltage	Marking List
			@ I_R=1mA	@ 1A	@ 3A		
	V_{RRM}	V_{RMS}	$V_{(BR)R}$	V_F		V_{RM}	
	V	V	V	V		V	
B5817W1000S020	20	14	20	0.45	0.75	20	SJ
B5818W1000S030	30	21	30	0.55	0.875	30	SK
B5819W1000S040	40	28	40	0.60	0.90	40	SL

TYPICAL CHARACTERISTIC CURVES - For Reference Only

Fig.1 Forward Current Derating Curve

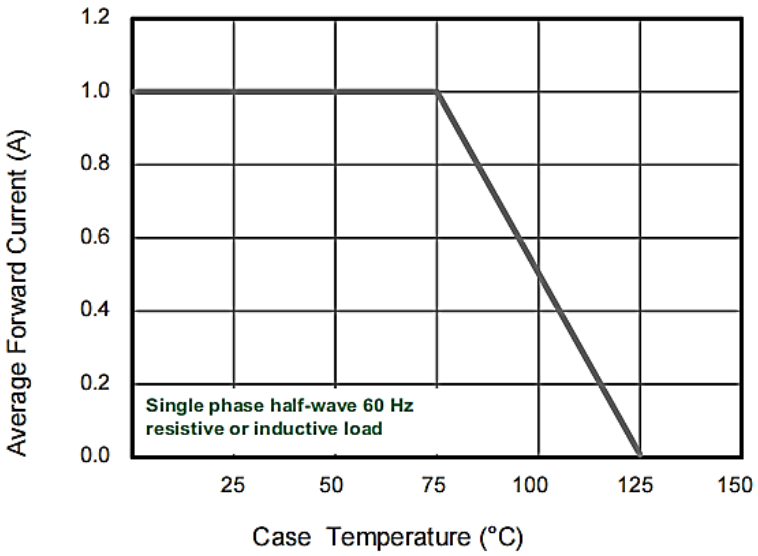
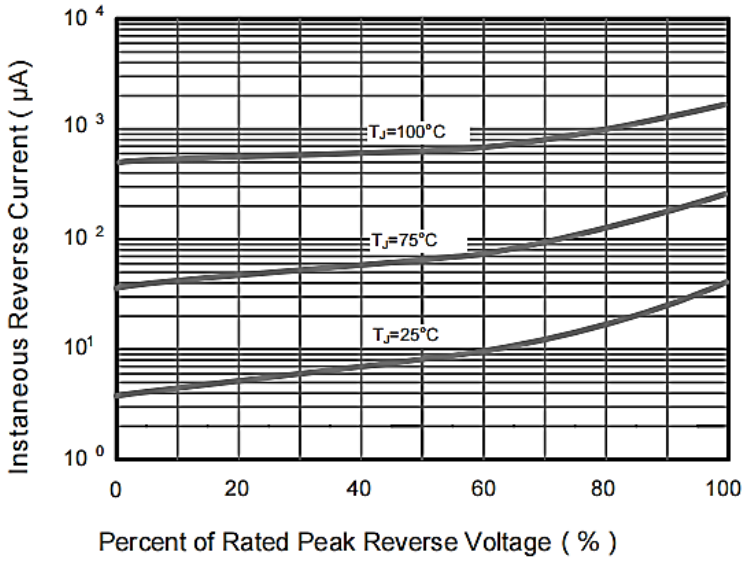


Fig.2 Typical Reverse Characteristics



TYPICAL CHARACTERISTIC CURVES - For Reference Only

Fig.3 TYPICAL FORWARD VOLTAGE

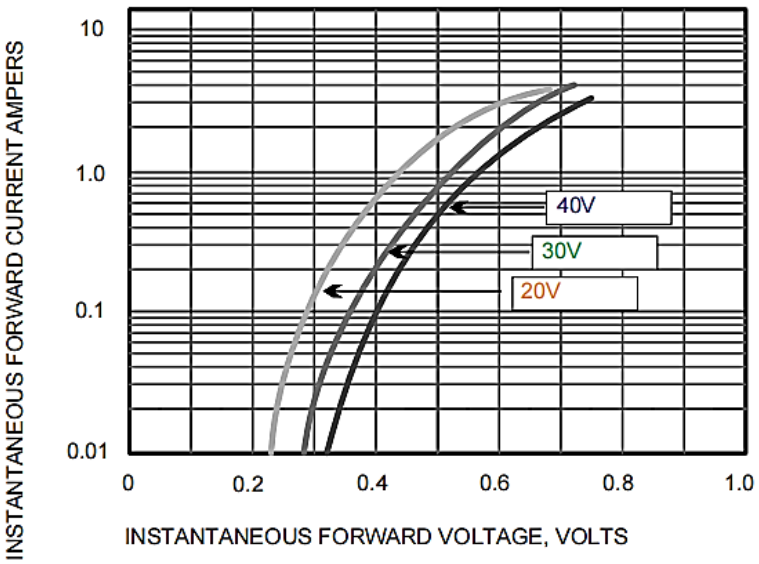
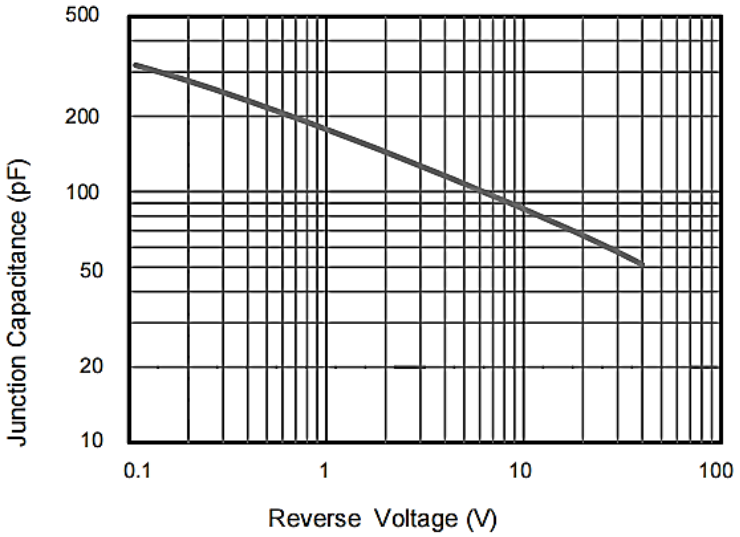


Fig.4 Typical Junction Capacitance



TYPICAL CHARACTERISTIC CURVES - For Reference Only

Fig.5 Maximum Non-Repetitive Peak Forward Surage Current

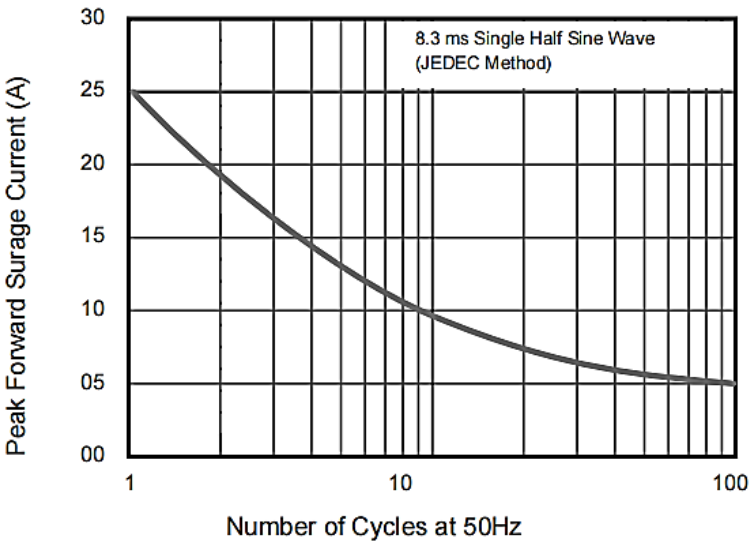
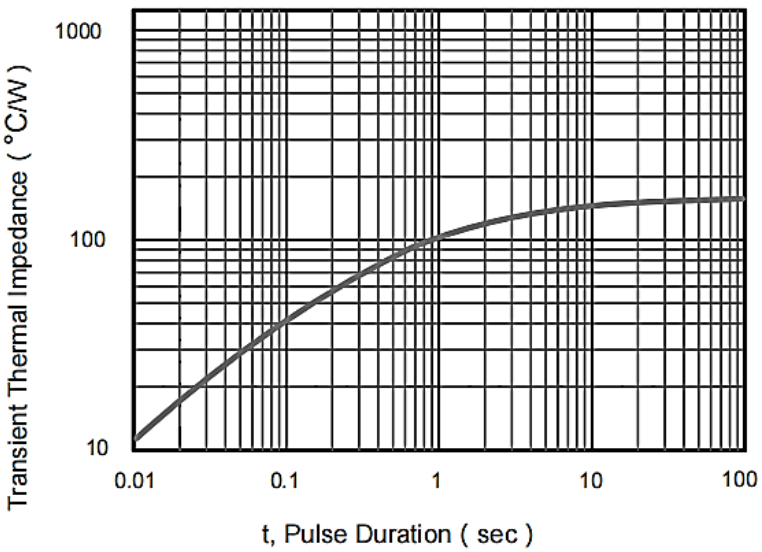


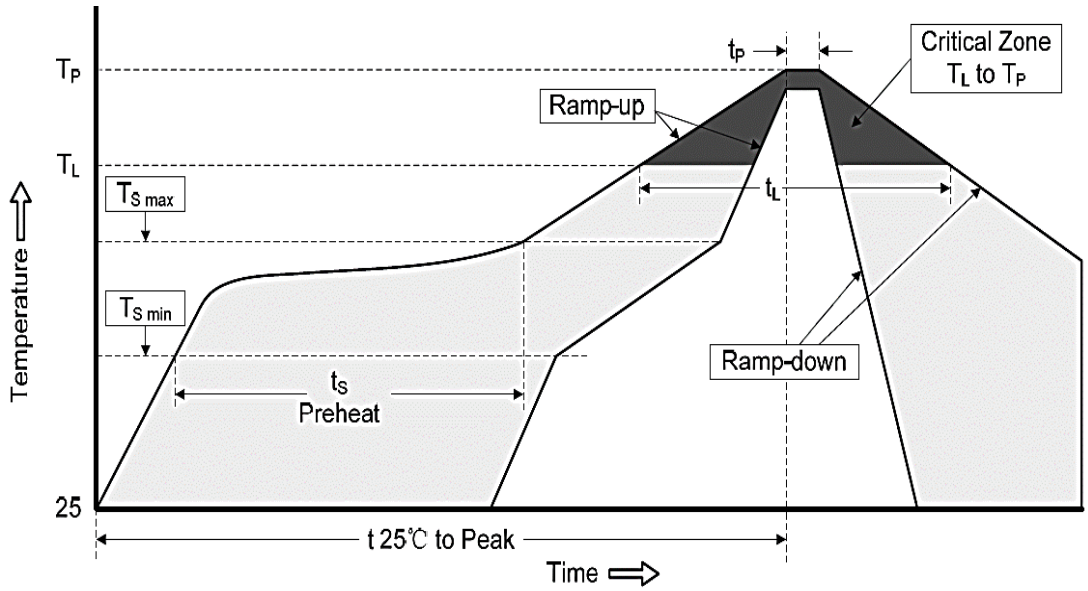
Fig.6 Typical Transient Thermal Impedance



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

SUGGESTED REFLOW PROFILE - For Reference Only

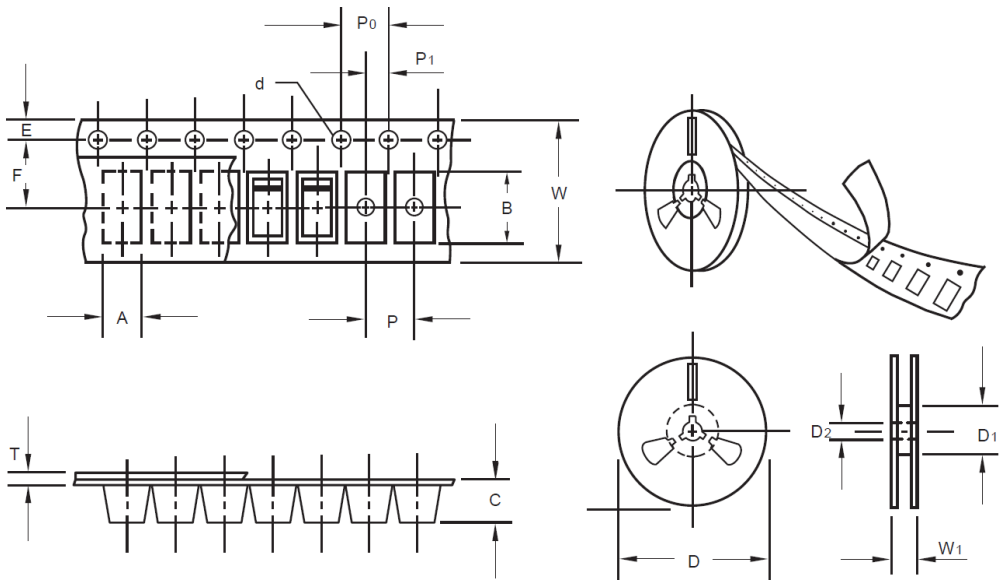


PROFILE FEATURE		PB-FREE ASSEMBLY
Average Ramp-up Rate (Ts Max to Tp)		3℃/second Max
Preheat	Temperature Min (Ts Min.)	150℃
	Temperature Max (Ts Max.)	200℃
	Time (ts Min. to ts Max.)	60 ~ 180 seconds
Time maintained above	Temperature (TL)	217℃
	Time (tL)	60 ~ 150 seconds
Peak/Classification Temperature (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 DIODES B581 SERIES CASE SOD-123

TAPE/REEL - Unit: mm

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



ITEM	SYMBOL	TOLERANCE	SOD-123
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
MPQ/Reel	3000pcs/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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