NextGen Components,Inc.

PART CODE: UMSB40M000S40A

SPECIFICATION SHEET

SPECIFICATION SHEET NO.	N0626-UMSB40M000S40A
DATE	June 26, 2021
REVISION	A0
DESCRIPITION	SMD Single Phase Glass Passivated Bridge Rectifier, UMSB Series, MSB40M Type 4 Pins, Reverse Voltage 1000V Max. Forward Current 4.0A Max. Operating Temp. Range -55°C ~+150°C, Package in Tape/Reel, 3000pcs/R RoHS/RoHS III compliant
CUSTOMER	
CUSTOMER PART NUMBER	
CROSS REF. PART NUMBER	
ORIGINAL PART NUMBER	MDD MSB40M
PART CODE	UMSB40M000S40A

VENDOR APPROVE
Issued/Checked/Approved NextGen Components, Inc. Mandy Xu NextGen Components, Inc. Ruby Zhang NextGen Components, Inc. Jack Zhang
DATE: June 26, 2021

CUSTOMER APPROVE
DATE:

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SMD BRIDGE RECTIFER UMSB SERIES

MAIN FEATURE

- Glass passivated chip junction
- Reverse voltage 1000V
- forward current 4A
- High surge current capability

APPLICATION

- For SMD application

RFQ
Request For Quotation

PART CODE GUIDE

UMSB	40M000	S	40A
1	2	3	4

1) **UMSB**: SMD Single Phase Glass Passivated Bridge Rectifier, 4 pins, UMSB Series

2) **40M000**: Type code for original part number MSB40M

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

4) **40A:** Specification code for Reverse Voltage 1000V Max. Forward Current 4.0A Max.

MORE ITEMS AVAILABLE

UMSB40D000S420	UMSB40G000S440	UMSB40J000S460	UMSB40K000S480	**UMSB40M000S40A**

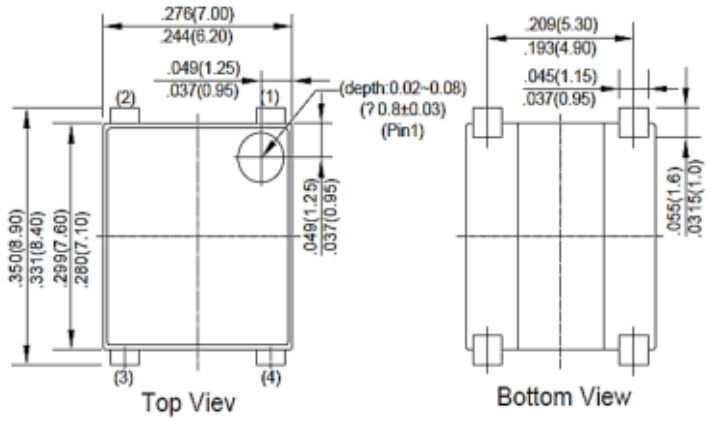
DIMENSION (Unit: Inch/mm)

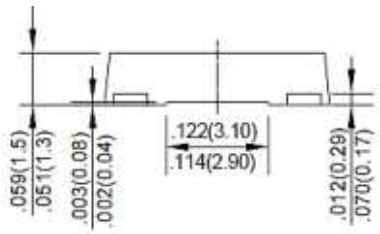
Image for reference

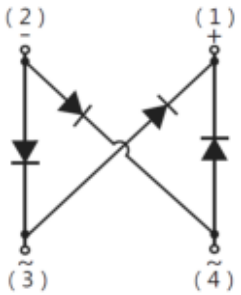


Marking: MSB40M

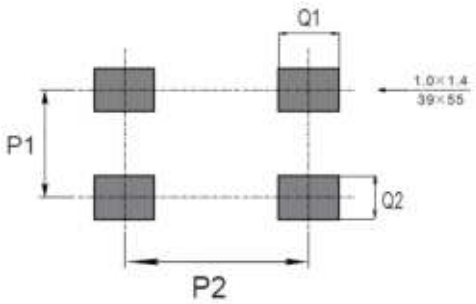
UMSB







Recommend Pad Layout



Symbol	Min. (Inch)	Min. (mm)
P1	0.201	5.1
P2	0.278	7.1
Q1	0.071	1.8
Q2	0.051	1.3

MECHANICAL DATA

Case	Terminals	Polarity	Mounting Position	Weight per piece
JEDEC UMSB molded plastic body	Solder plated, Solderable per MIL-STD-750, Method 2026	Polarity symbol marking on case	Any	0.00825 Ounce, 0.234 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 at Tc= 30°C On glass-epoxy PCB On aluminum substrate		I_{AV}			4.0	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)		I_{FSM}		95		A
Instantaneous forward voltage at 4.0A		V_F			1.1	Volts
DC reverse current at rated DC blocking voltage	**TA=25℃**	I_R			5	μA
	TA=125℃				100	μA
Junction capacitance (Note 2)		C_J		40		pF
Thermal resistance		$R_{\theta JA}$		-		°C/W
Operating junction temperature range		T_J	-55		+150	
Storage temperature range		T_{STG}	-55		+150	°C

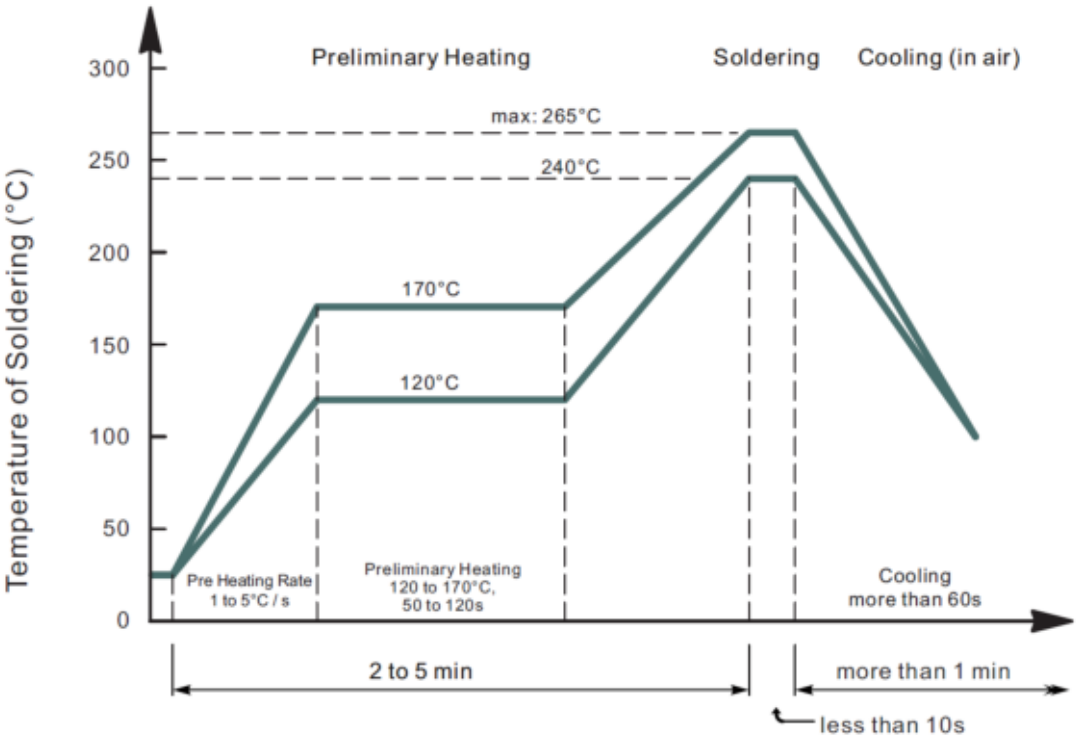
Note

1. 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%.
2. Measured at 1.0MHz and applied reverse voltage of 4Vdc
3. PCB mounted with 4”*1.5”*1.5” copper pad area.

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)



- Recommended peak temperature is over 245℃, If peak temperature is below 245 ℃, you may adjust the following parameters; time length of peak temperature (longer), time length of soldering (longer), thickness of solder paste (thicker)
- Welding shall not exceed 2 times
- Remark: lead free solder paste (96.5 sn/3.0 Ag/0.5Cu)

RATINGS AND CHARACTERISTIC CURVES (For Reference Only)

Fig.1 Average Rectified Output Current Derating Curve

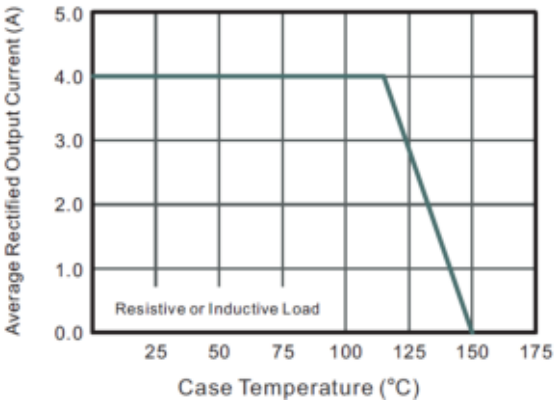


Fig.2 Typical Reverse Characteristics

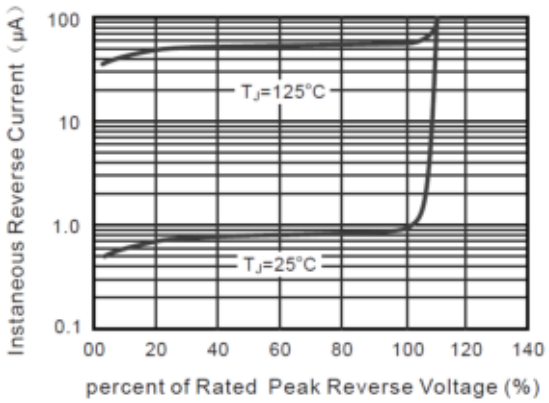


Fig.3 Typical Instaneous Forward Characteristics

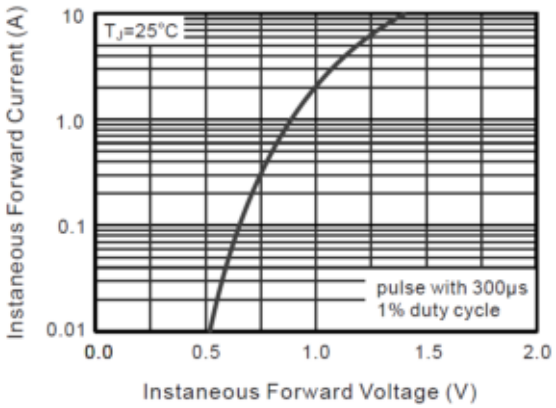


Fig.4 Typical Junction Capacitance

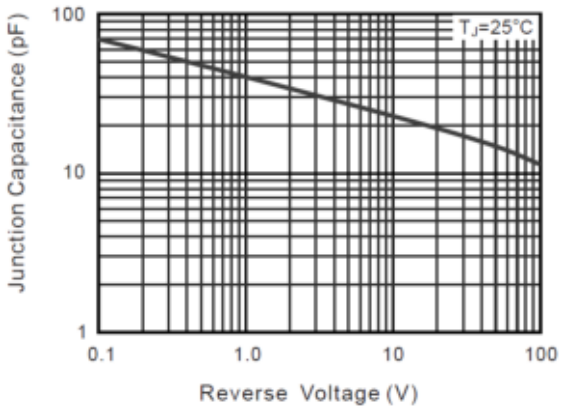
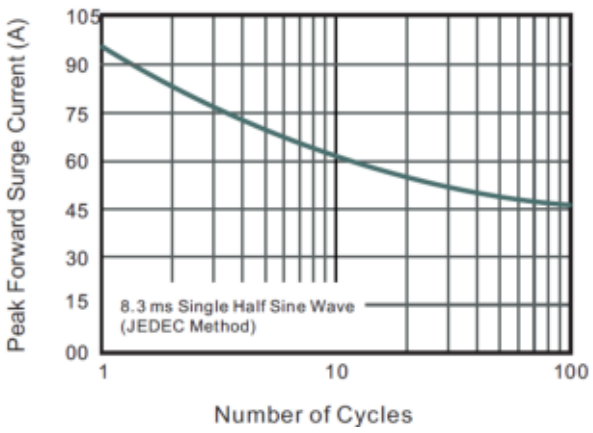
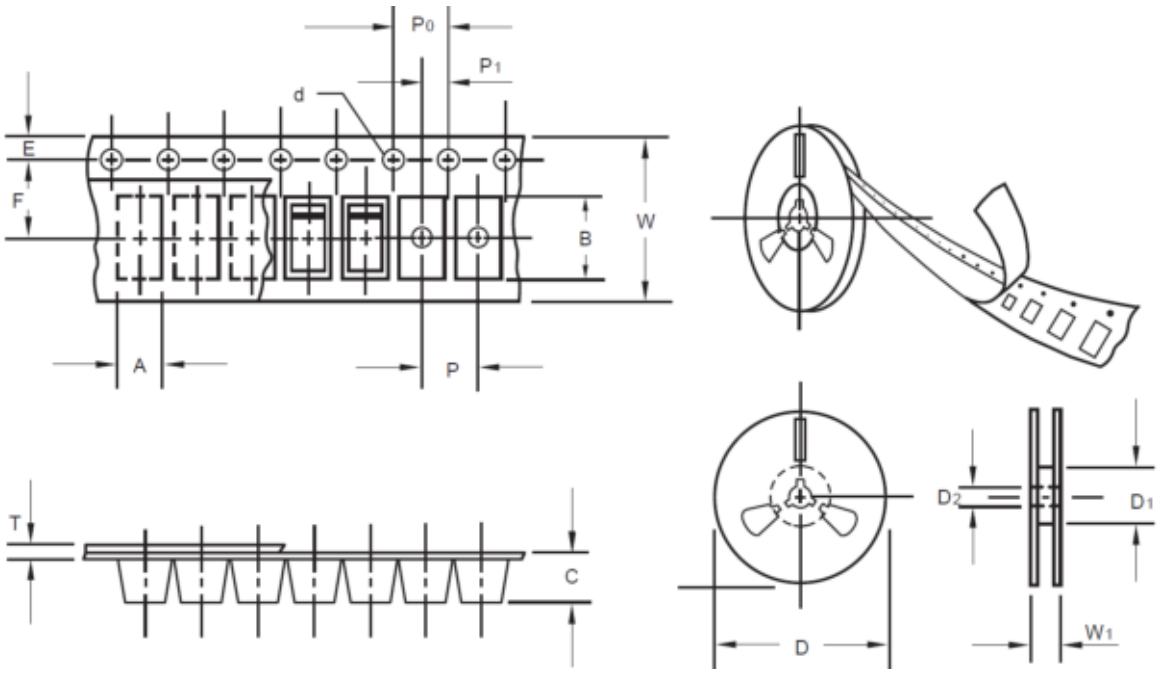


Fig.5 Maximum Non-Repetitive Peak Forward Surge Current



TAPE/REEL (Unit: mm)

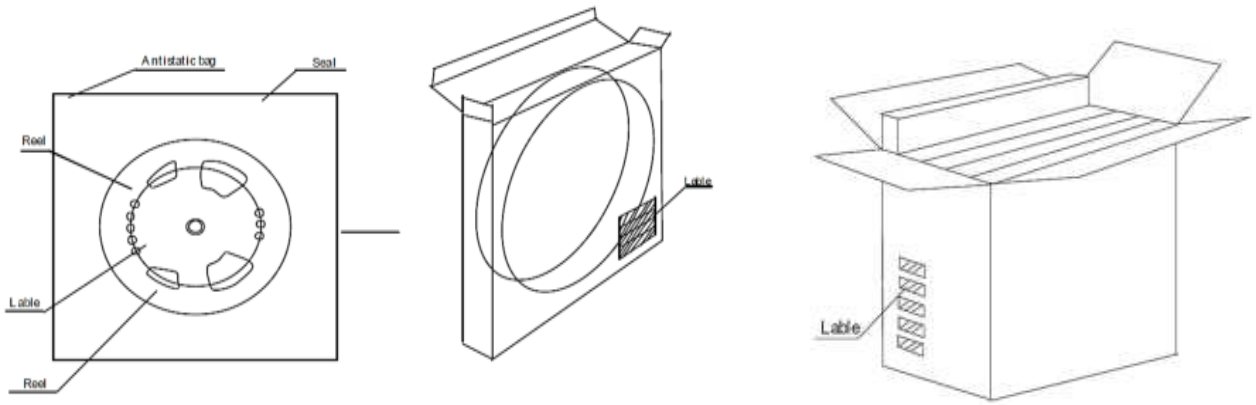
All Devices are packed in accordance with EIA standard RS-481-A and specifications.



Item	Symbol	Tolerance	UMSB
Carrier width	A	0.1	2.8
Carrier Length	B	0.1	5.33
Carrier Depth	C	0.1	2.36
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	D	-	-
7”Reel inner diameter	D1	-	-
Feed hole diameter	D2	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	5.50
Punch hole pitch	P	0.1	4.00
Sprocket hole pitch	P0	0.1	4.00
Embossment center	P1	0.1	2.0
Overall tape thickness	T	0.1	0.28
Tape width	W	0.3	12.00
Reel width	W1	1.0	18.0

PACKAGE

Case Code	Reel Size	MPQ (pcs)	Component Spacing (mm)	Qty. Per Box (pcs)	Inner Box L*W*H (mm)	Reel Size (mm)	Carton size L*W*H (mm)	Qty. Per Carton (pcs)	G. W (kg)
UMSB	13”	3,000	-	6,000	340*340*60	330	380*380*380	48,000	19.6



DISCLAIMER

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