

S2M Datasheet

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DiGi Electronics Part Number	S2M-DG
Manufacturer	MDD
Manufacturer Product Number	S2M
Description	DIODE GEN PURP 1KV 2A SMA
Detailed Description	Diode 1000 V 2A Surface Mount SMA

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Purchase and inquiry

Manufacturer Product Number:

S2M

Series:

SMA

Technology:

Standard

Current - Average Rectified (Io):

2A

Capacitance @ Vr, F:

25pF @ 4V, 1MHz

Package / Case:

SOD-214AC, SMA

Operating Temperature - Junction:

-55°C ~ 150°C

Manufacturer:

MDD

Product Status:

Active

Voltage - DC Reverse (Vr) (Max):

1000 V

Voltage - Forward (Vf) (Max) @ If:

1.15 V @ 2 A

Mounting Type:

Surface Mount

Supplier Device Package:

SMA

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.10.0080




Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

SPECIFICATION SHEET NO.	N0929- SMAS2M0000S20A
DATE	Sept. 29, 2021
REVISION	A0
DESCRIPTION	<p>SMD General Purpose Rectifier, SMA/DO-214AC series, S2M Type, 2 Pads</p> <p>Reverse Voltage 1000V Max. Forward Current 2.0A Max.</p> <p>Operating Temp. Range -55°C ~+150°C</p> <p>Package in Tape/Reel, 5000pcs/Reel</p> <p>RoHS/RoHS III compliant</p>
CUSTOMER	
CUSTOMER PART NUMBER	
CROSS REF. PART NUMBER	
ORIGINAL PART NUMBER	MDD S2M
PART CODE	SMAS2M0000S20A

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

CUSTOMER APPROVE	
DATE:	

SMD GENERAL PURPOSE RECTIFER SMA 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](#)

SMA	S2M0000	S	20A
1	2	3	4

1) **SMA**: SMD General Purpose Rectifier, SMA/DO-214AC series,

2) **S2M0000**: Type Code for original part number S2M

3) **S**: Package code, Tape/reel, 5000pcs/reel.

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

MORE ITEMS AVAILABLE

SMAS2A0000S205	SMAS2B0000S210	SMAS2D0000S220	SMAS2G0000S240	SMAS2J0000S260
SMAS2K0000S280	SMAS2M0000S20A			

SMD GENERAL PURPOSE RECTIFIER SMA SERIES

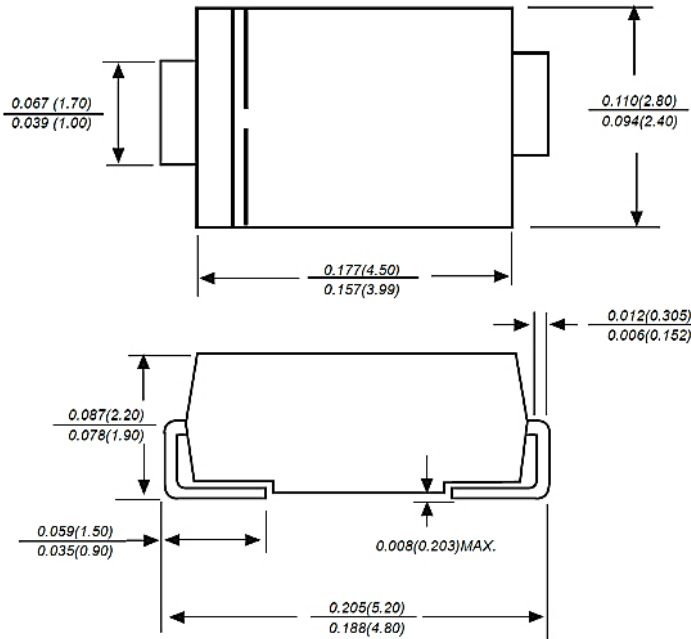
DIMENSION (Unit: Inch/mm)

Image for reference

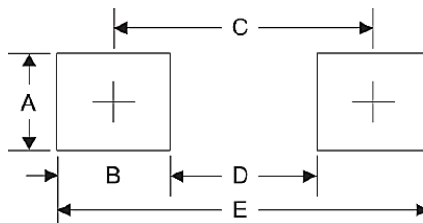


Marking: S2M

SMA/DO-214AC



Recommend Pad Layout



Symbol	Unit (Inch)	Unit (mm)
A	0.066	1.680
B	0.060	1.520
C	0.154	3.900
D	0.095	2.410
E	0.215	5.450

SMD GENERAL PURPOSE RECTIFIER SMA SERIES

MECHANICAL DATA

Case	Terminals	Polarity	Mounting Position	Weight per piece
JEDEC SMA/DO-214AC molded plastic body	Solder plated, Solderable per MIL-STD-750, Method 2026	Polarity symbol marking on case	Any	0.0019 Ounce, 0.0550 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}			50	A
Instantaneous forward voltage at 2.0A	V _F			1.1	Volts
DC reverse current at rated DC blocking voltage	I _R			5.0	μA
				100	μA
Junction capacitance (Note 3)	C _J		25		pF
Thermal resistance (Note 4)	R _{QJA}		65		°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.

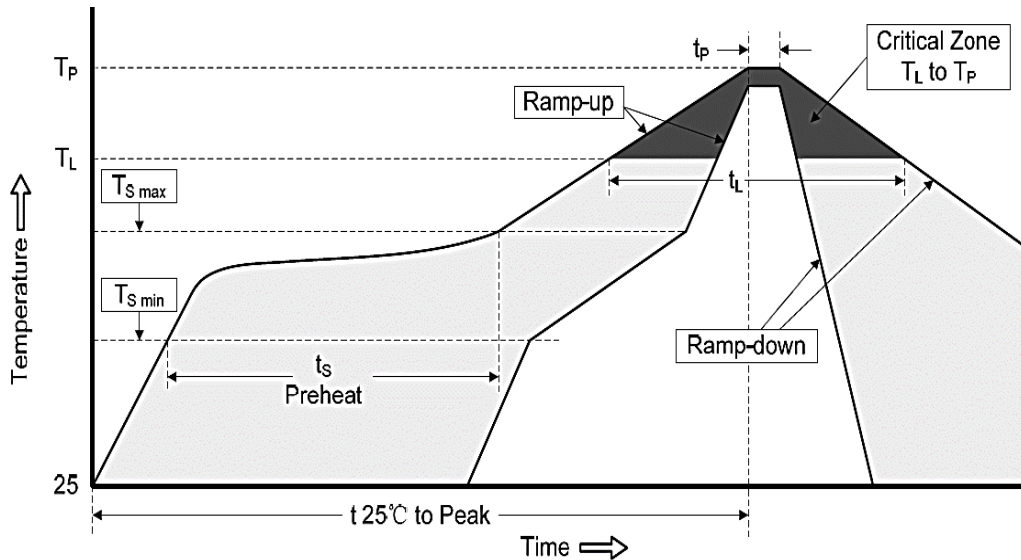
SMD GENERAL PURPOSE RECTIFIER SMA SERIES

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 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	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

SMD GENERAL PURPOSE RECTIFIER SMA SERIES

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.

SMD GENERAL PURPOSE RECTIFIER SMA SERIES

RATINGS AND CHARACTERISTIC CURVES (For Reference Only)

Fig.1 Forward Current Derating Curve

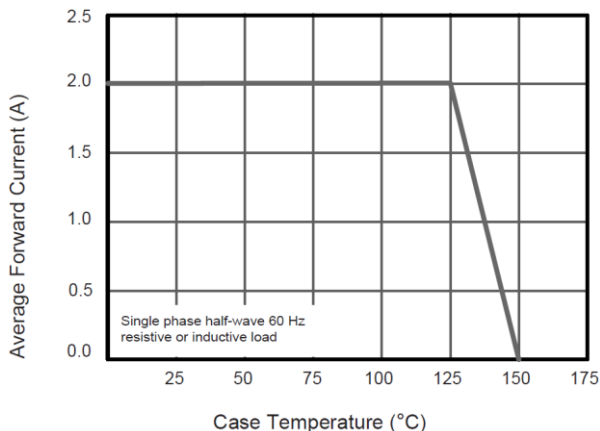


Fig.2 Typical Reverse Characteristics

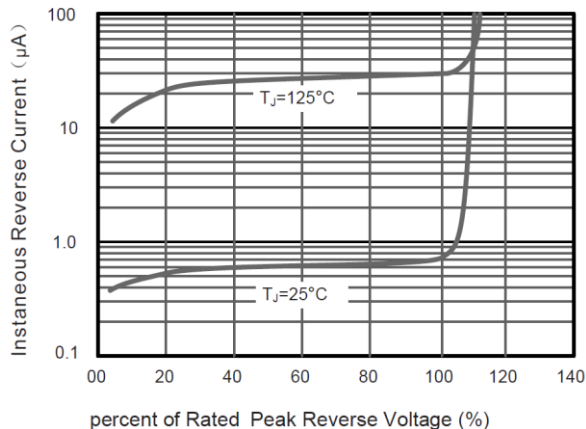


Fig.3 Typical Forward Characteristic

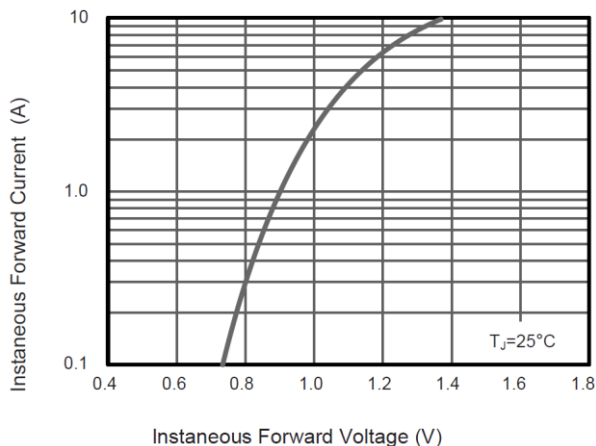


Fig.4 Typical Junction Capacitance

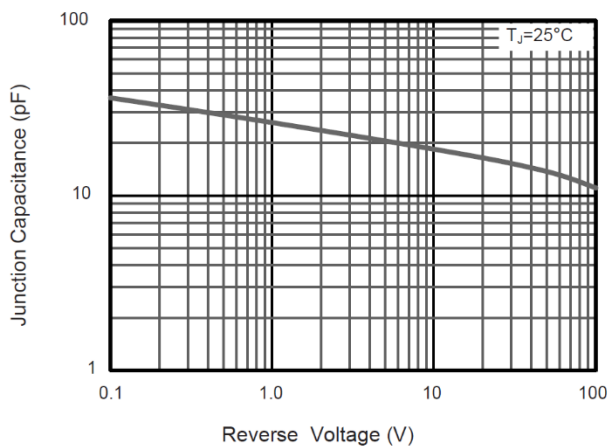
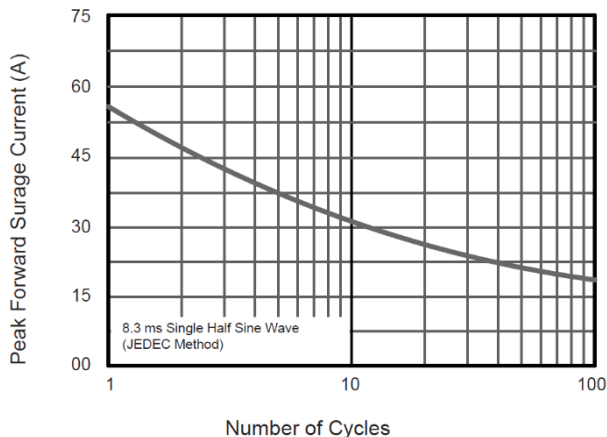


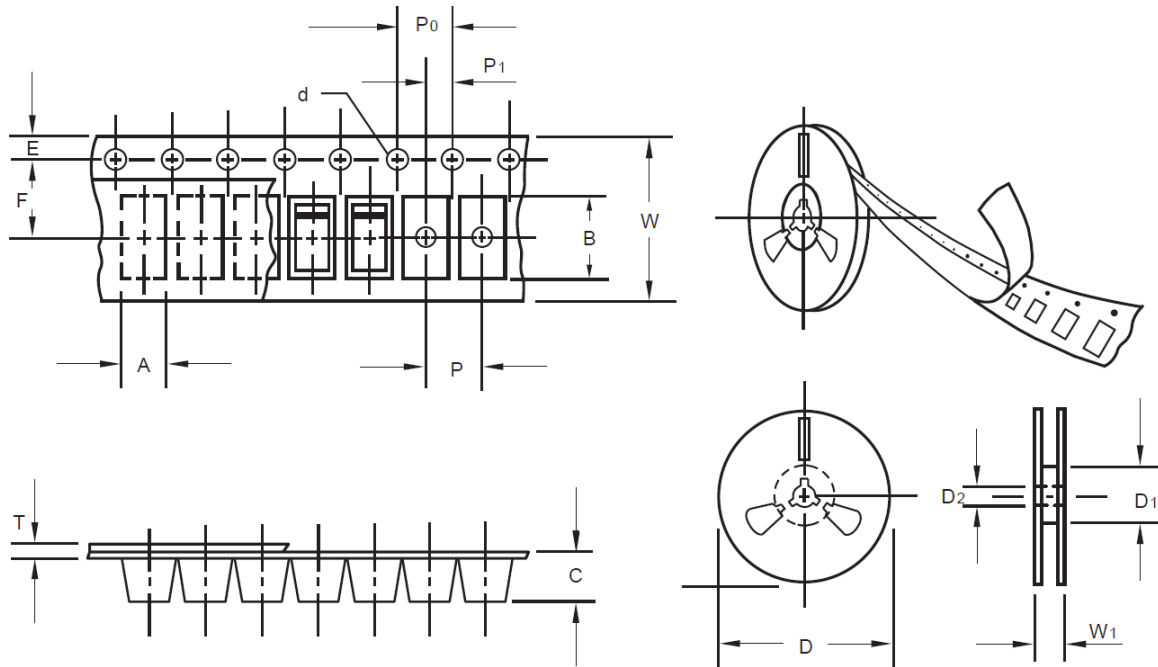
Fig.5 Maximum Non-Repetitive Peak Forward Surge Current



SMD GENERAL PURPOSE RECTIFIER SMA SERIES

TAPE/REEL (Unit: mm)

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



Item	Symbol	Tolerance	SMA/DO-214AC
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	330.0
13" Reel inner diameter	D1	-	50.0 Min.
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

SMD GENERAL PURPOSE RECTIFER SMA SERIES
SPQ PACKAGE for Reference

Item	Unit	Value
Case Code		SMA
Reel Size	Inch	13
Reel Size	mm	330
Tape Space	mm	/
SPQ /Reel	pcs	5000
Weigh /SPQ	LBS	0.88
Weigh /SPQ	KGs	0.40
Qty. Per Box	pcs	10,000
Inner Box	Inch	L13.2*W13.2*H1.95

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