

M1GAT thru M7GAT

SURFACE MOUNT GENERAL PURPOSE SILICON RECTIFIERS

Forward Current-1.0A

Reverse Voltage-50V to 1000V

FEATURES

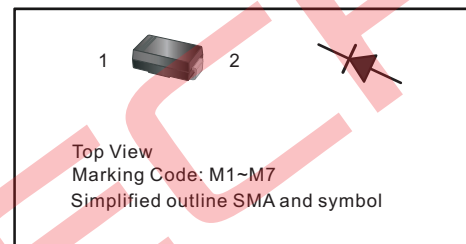
- ◆ For surface mount applications
- ◆ Glass passivated chip junction
- ◆ Low profile package
- ◆ ESD (HBM) > 4KV
- ◆ Lead free in comply with EU RoHS 2011/65/EU directives

MECHANICAL DATA

- ◆ Case: SMA molded plastic body
- ◆ Terminals: Solderable per MIL-STD-750, Method 2026
- ◆ Weight: Approximated 0.055 grams

PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase half-wave 60 Hz, resistive or inductive load, for capacitive load current derating by 20 %.

PARAMETER	SYMBOL	M1GAT	M2GAT	M3GAT	M4GAT	M5GAT	M6GAT	M7GAT	UNIT
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	V_{RMS}	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	V_{DC}	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current	$I_{F(AV)}$	1.0							A
Peak Forward Surge Current (Note1)	I_{FSM}	30							A
Maximum Forward Voltage at 1.0 A	V_F	1.1							V
Maximum DC Reverse Current at Rated DC Blocking Voltage $T_A=25^\circ\text{C}$ $T_A=125^\circ\text{C}$	I_R	5 50							μA
Typical Junction Capacitance (Note2)	C_J	15							pF
Typical Thermal Resistance (Note3)	$R_{\theta JA}$	75							$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150							$^\circ\text{C}$

Notes: 1. Measured at 8.3 ms single half sine wave superimposed on rated load (JEDEC Method).

2. Measured at 1MHz and applied reverse voltage of 4 V D.C.

3. P.C.B. mounted with 1.0 X 1.0" (2.54 X 2.54 cm) copper pad areas.

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RATINGS AND CHARACTERISTIC CURVES

Fig.1 Forward Current Derating Curve

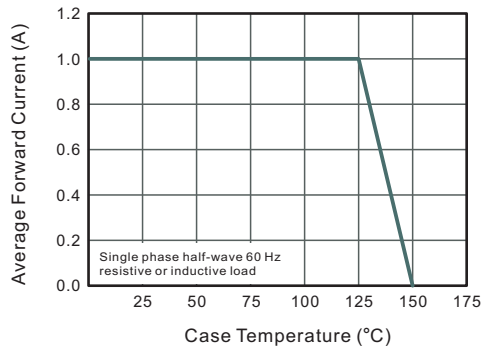


Fig.2 Typical Instantaneous Reverse Characteristics

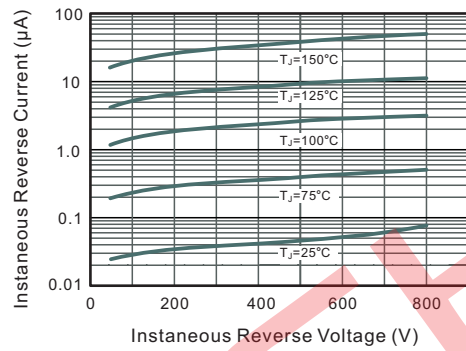


Fig.3 Typical Forward Characteristic

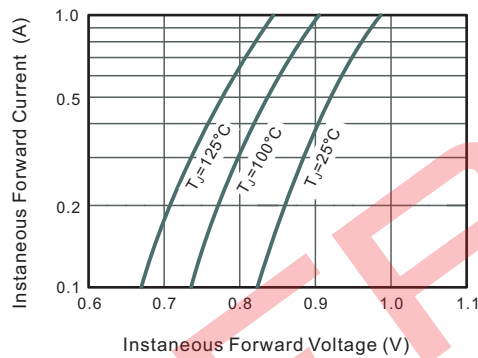


Fig.4 Typical Junction Capacitance

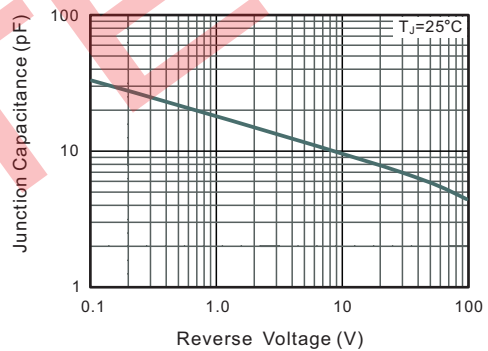
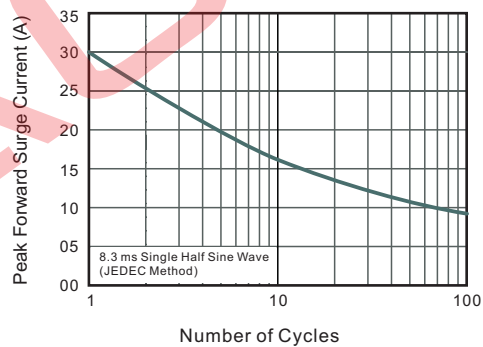


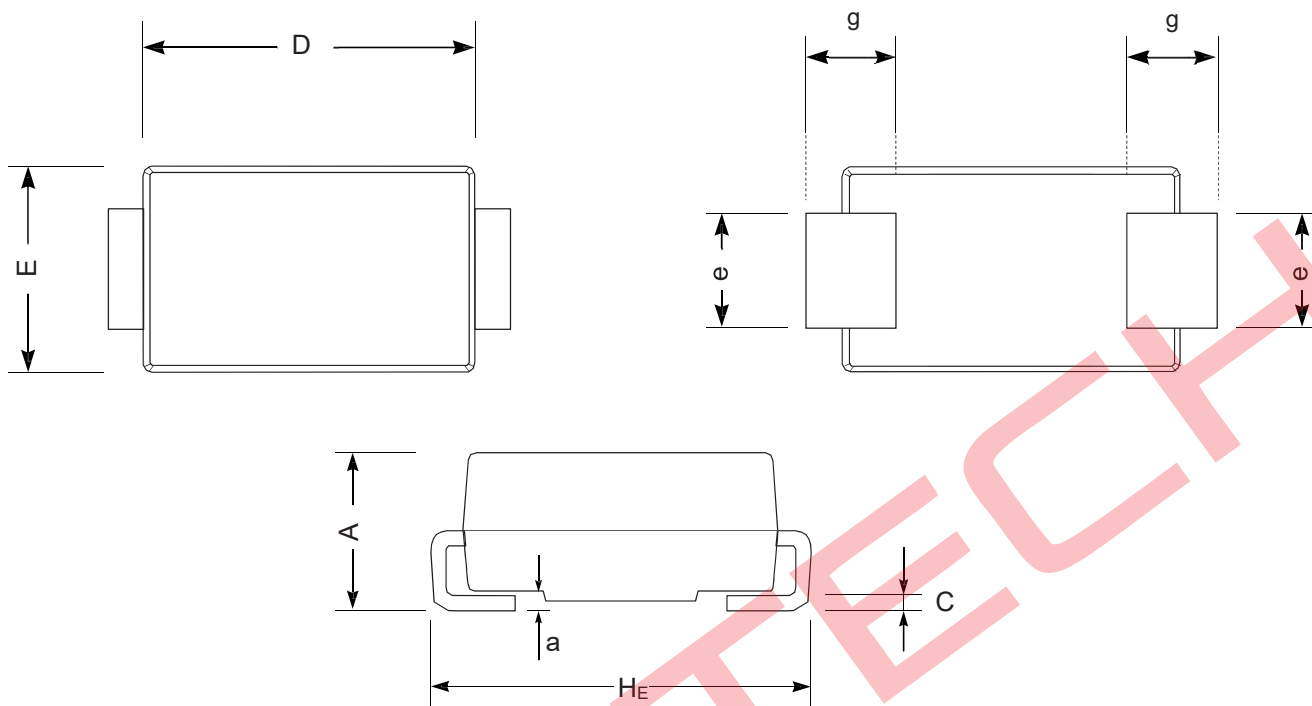
Fig.5 Maximum Non-Repetitive Peak Forward Surge Current



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PACKAGE OUTLINE

SMA



UNIT		A	D	E	HE	C	e	g	a
mm	max	2.2	4.5	2.7	5.2	0.31	1.6	1.5	0.3
	min	1.9	4.0	2.3	4.7	0.15	1.3	0.9	
mil	max	87	181	106	205	12	63	59	12
	min	75	157	91	185	6	51	35	

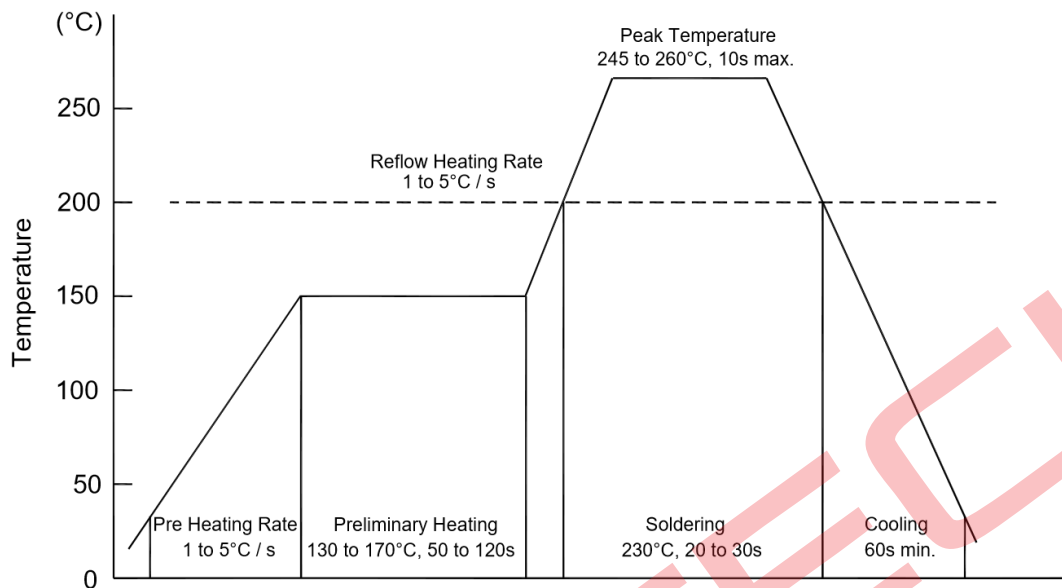
ORDERING INFORMATION

Device	Package	Shipping
M1GAT thru M7GAT	SMA	5,000/Tape & Reel (13 inches)

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CONDITIONS OF SOLDERING AND STORAGE

RECOMMENDED CONDITIONS OF REFLOW SOLDERING



Recommended peak temperature is over 245 °C. If peak temperature is below 245 °C, you may adjust the following parameters:

- Time length of peak temperature (longer)
- Time length of soldering (longer)
- Thickness of solder paste (thicker)

Condition of hand soldering

- Temperature: 370 °C
- Time: 3s max.
- Times: one time

STORAGE CONDITIONS

Temperature

5 to 40 °C

Humidity

30 to 80% RH

Recommended period

One year after manufacturing

MSL

- ◆ 1 Level

Marking

Type number	Marking code
M1GAT	M1
M2GAT	M2
M3GAT	M3
M4GAT	M4
M5GAT	M5
M6GAT	M6
M7GAT	M7

Pad size

