

# M1GAT thru M7GAT

## SURFACE MOUNT GENERAL PURPOSE SILICON RECTIFIERS

Forward Current-1.0A

Reverse Voltage-50V to 1000V

### FEATURES

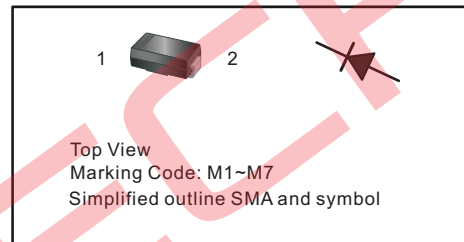
- ◆ For surface mount applications
- ◆ Glass passivated chip junction
- ◆ Low profile package
- ◆ ESD (HBM) > 4KV
- ◆ Lead free in comply with EU RoHS 2011/65/EU directives

### 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							$\mu\text{A}$
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).

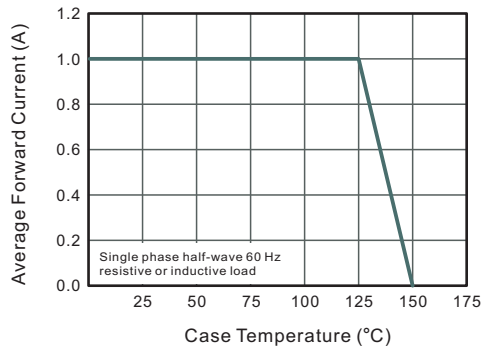
2. Measured at 1MHz and applied reverse voltage of 4 V D.C.

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

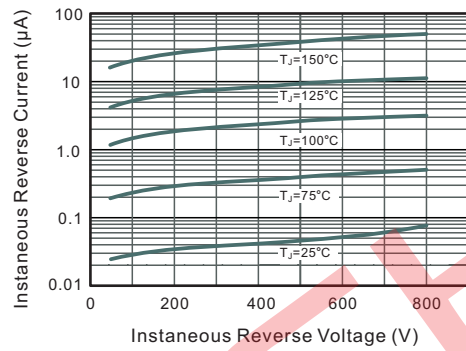
# M1GAT thru M7GAT

## RATINGS AND CHARACTERISTIC CURVES

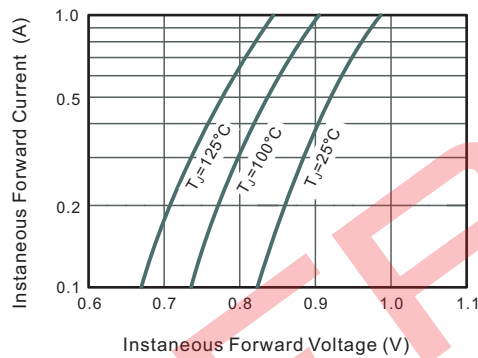
**Fig.1 Forward Current Derating Curve**



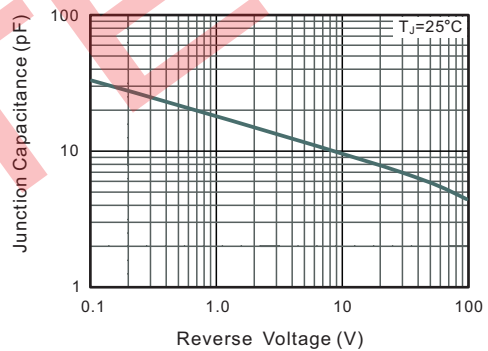
**Fig.2 Typical Instantaneous Reverse Characteristics**



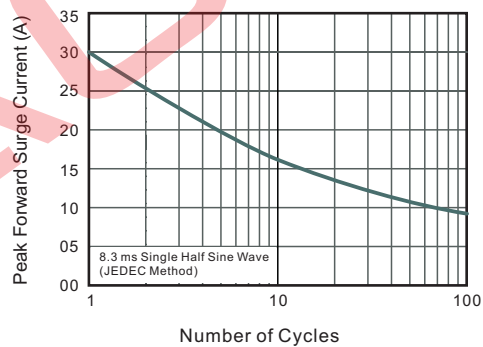
**Fig.3 Typical Forward Characteristic**



**Fig.4 Typical Junction Capacitance**



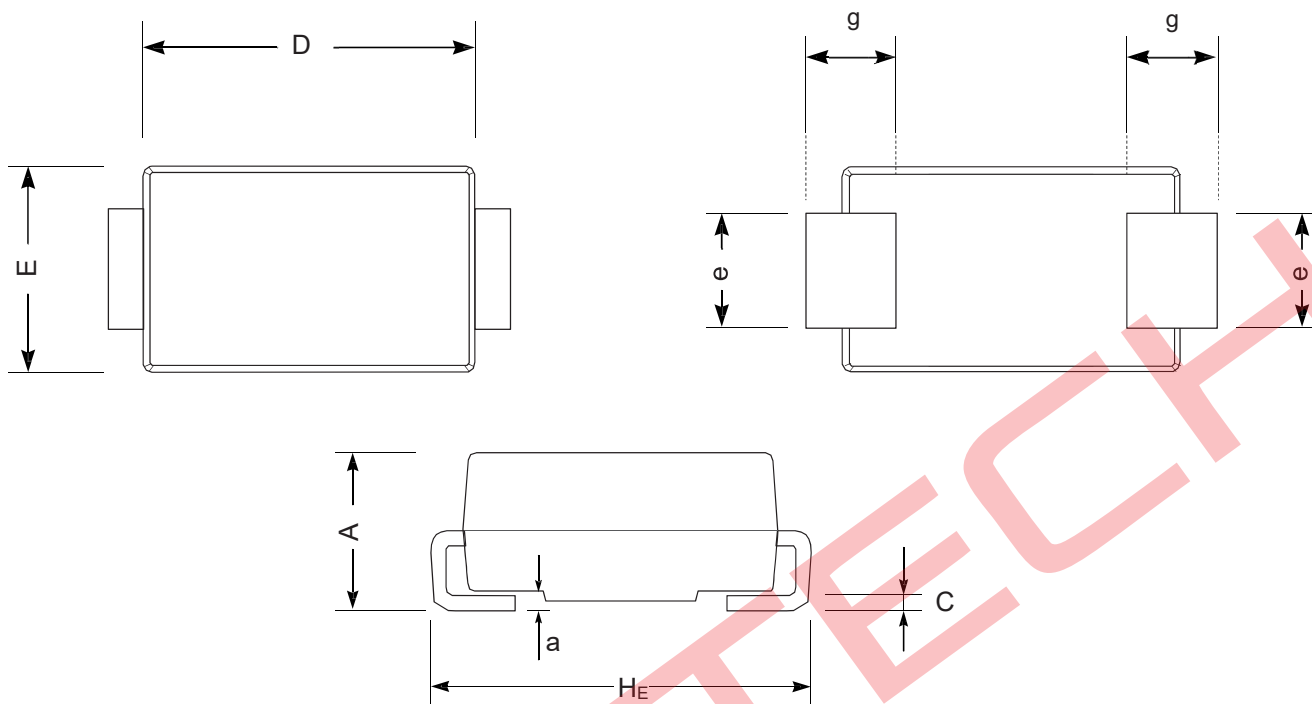
**Fig.5 Maximum Non-Repetitive Peak Forward Surge Current**



# M1GAT thru M7GAT

## 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	

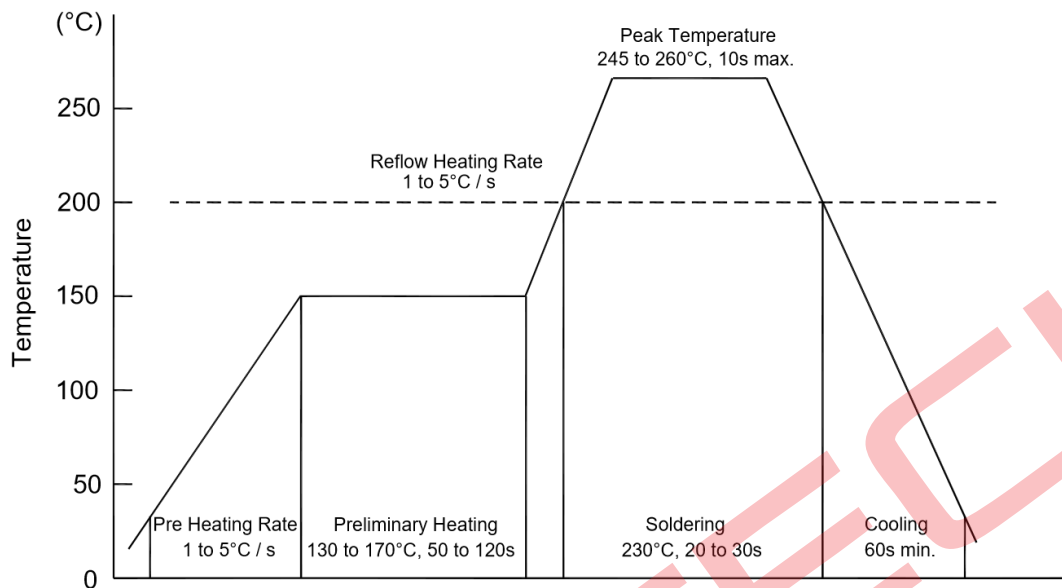
### ORDERING INFORMATION

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

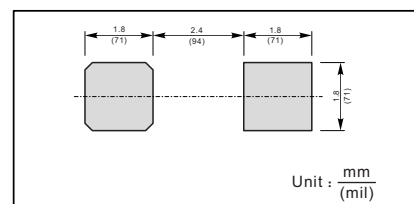
### MSL

- ◆ 1 Level

### Marking

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

### Pad size



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