



# Z00607MA

STANDARD

0.8A TRIACs

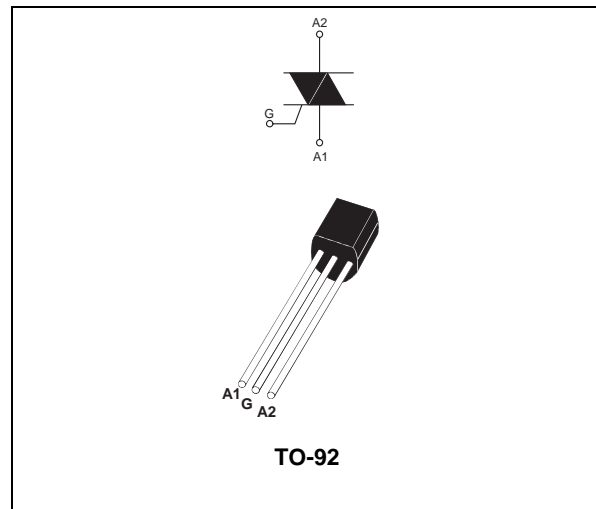
## MAIN FEATURES:

Symbol	Value	Unit
$I_{T(RMS)}$	0.8	A
$V_{DRM}/V_{RRM}$	600	V
$I_{GT}(Q_1)$	5	mA

## DESCRIPTION

The Z00607MA is suitable for low power AC switching applications, such as fan speed, small light controllers...

Thanks to low gate triggering current, it can be directly driven by microcontrollers.



## ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter		Value	Unit
$I_{T(RMS)}$	RMS on-state current (full sine wave)		$T_I = 50^\circ\text{C}$ 0.8	A
$I_{TSM}$	Non repetitive surge peak on-state current (full cycle, $T_j$ initial = $25^\circ\text{C}$ )	$F = 50\text{ Hz}$	$t = 20\text{ ms}$ 9	A
		$F = 60\text{ Hz}$	$t = 16.7\text{ ms}$ 9.5	
$I^2t$	$I^2t$ Value for fusing	$t_p = 10\text{ ms}$	0.45	$\text{A}^2\text{s}$
$di/dt$	Critical rate of rise of on-state current $I_G = 2 \times I_{GT}$ , $t_r \leq 100\text{ ns}$	$F = 120\text{ Hz}$	$T_j = 110^\circ\text{C}$ 20	$\text{A}/\mu\text{s}$
$I_{GM}$	Peak gate current	$t_p = 20\text{ }\mu\text{s}$	$T_j = 110^\circ\text{C}$ 1	A
$P_{G(AV)}$	Average gate power dissipation		$T_j = 110^\circ\text{C}$ 0.1	W
$T_{stg}$ $T_j$	Storage junction temperature range Operating junction temperature range		- 40 to + 150 - 40 to + 110	$^\circ\text{C}$

## Z00607MA

### ELECTRICAL CHARACTERISTICS (T<sub>j</sub> = 25°C, unless otherwise specified)

Symbol	Test Conditions	Quadrant		Value	Unit
I <sub>GT</sub> (1)	V <sub>D</sub> = 12 V    R <sub>L</sub> = 30 Ω	I - II - III IV	MAX.	5 7	mA
V <sub>GT</sub>		ALL	MAX.	1.3	V
V <sub>GD</sub>	V <sub>D</sub> = V <sub>DRM</sub> R <sub>L</sub> = 3.3 kΩ    T <sub>j</sub> = 110°C	ALL	MIN.	0.2	V
I <sub>H</sub> (2)	I <sub>T</sub> = 200 mA		MAX.	5	mA
I <sub>L</sub>	I <sub>G</sub> = 1.2 I <sub>GT</sub>	I - III - IV	MAX.	10	mA
		II		20	
dV/dt (2)	V <sub>D</sub> = 67 %V <sub>DRM</sub> gate open    T <sub>j</sub> = 110°C		MIN.	10	V/μs
(dV/dt) <sub>c</sub> (2)	(dI/dt) <sub>c</sub> = 0.35 A/ms    T <sub>j</sub> = 110°C		MIN.	1.5	V/μs

### STATIC CHARACTERISTICS

Symbol	Test Conditions		Value	Unit	
V <sub>TM</sub> (2)	I <sub>TM</sub> = 1.1 A    t <sub>p</sub> = 380 μs	T <sub>j</sub> = 25°C	MAX.	1.5	V
V <sub>to</sub> (2)	Threshold voltage	T <sub>j</sub> = 110°C	MAX.	0.95	V
R <sub>d</sub> (2)	Dynamic resistance	T <sub>j</sub> = 110°C	MAX.	420	mΩ
I <sub>DRM</sub> I <sub>RDM</sub>	V <sub>DRM</sub> = V <sub>RRM</sub> = 600 V	T <sub>j</sub> = 25°C	MAX.	5	μA
		T <sub>j</sub> = 110°C		0.1	mA

**Note 1:** minimum I<sub>GT</sub> is guaranteed at 5% of I<sub>GT</sub> max.

**Note 2:** for both polarities of A2 referenced to A1

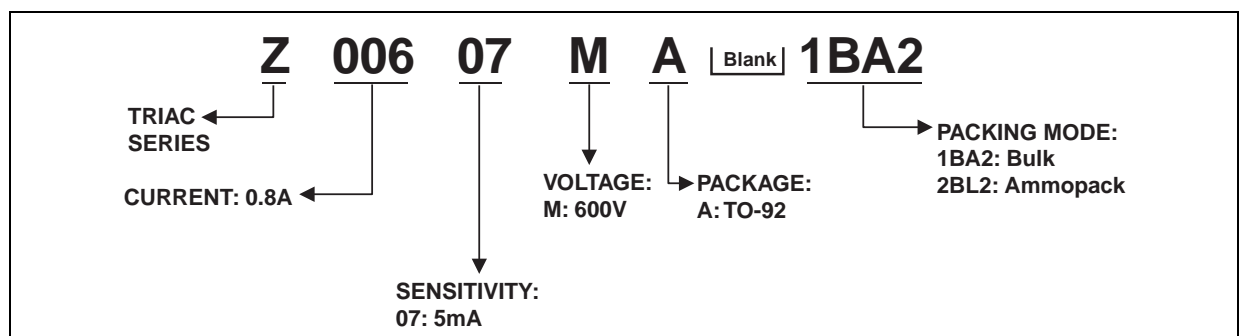
### THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
R <sub>th(j-l)</sub>	Junction to lead (AC)	60	°C/W
R <sub>th(j-a)</sub>	Junction to ambient	150	°C/W

### PRODUCT SELECTOR

Part Number	Voltage	Sensitivity	Type	Package
Z00607MA	600 V	5 mA	Standard	TO-92

### ORDERING INFORMATION



OTHER INFORMATION

Part Number	Marking	Weight	Base quantity	Packing mode
Z00607MA 1BA2	Z00607MA	0.2 g	2500	Bulk
Z00607MA 2BL2	Z00607MA	0.2 g	2500	Ammopack

Fig. 1: Maximum power dissipation versus RMS on-state current (full cycle).

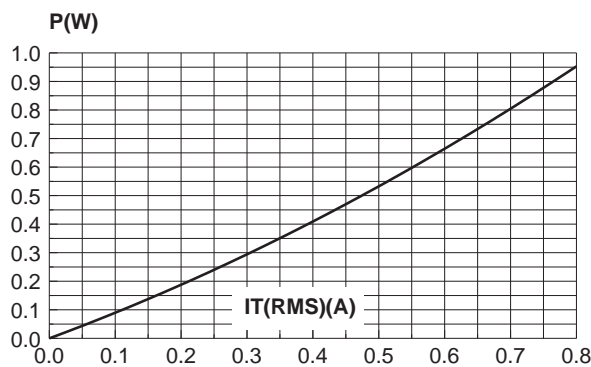


Fig. 2: RMS on-state current versus ambient temperature (full cycle).

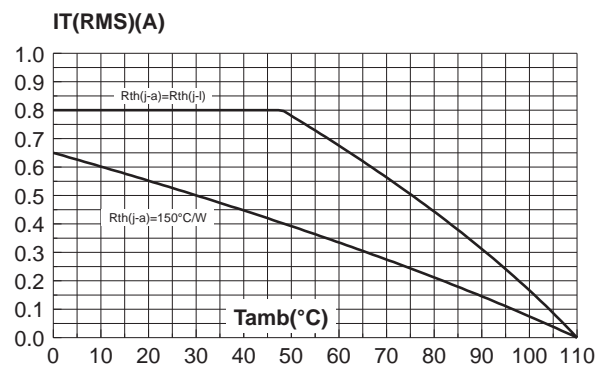


Fig. 3: Relative variation of thermal impedance junction to ambient versus pulse duration.

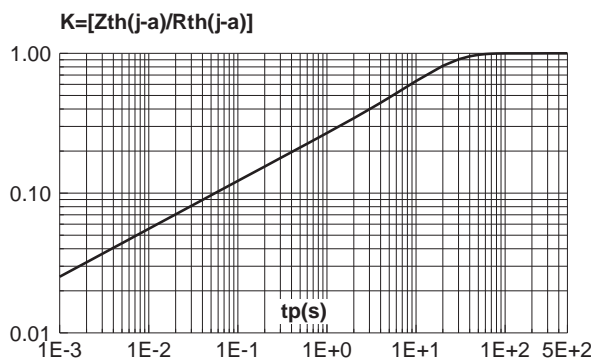
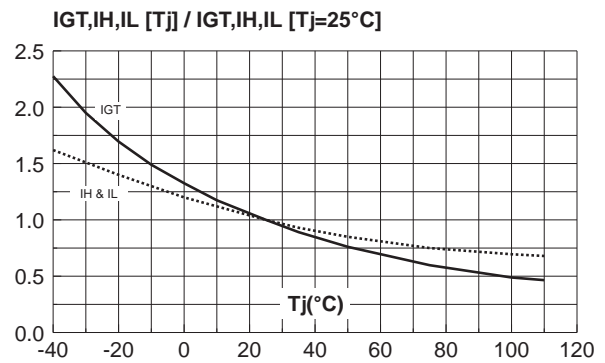
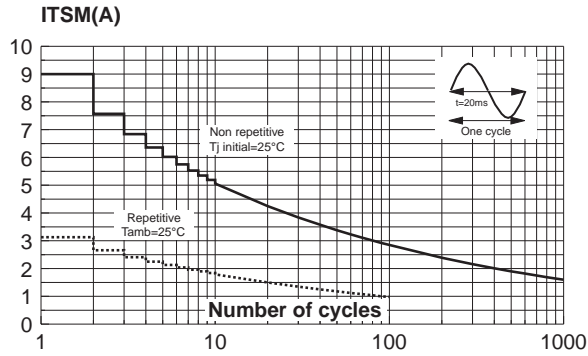


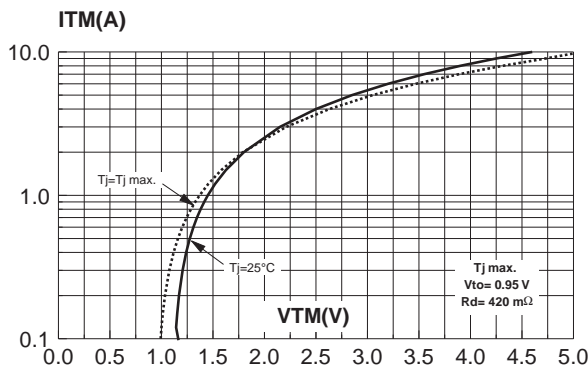
Fig. 4: Relative variation of gate trigger current, holding current and latching current versus junction temperature (typical values).



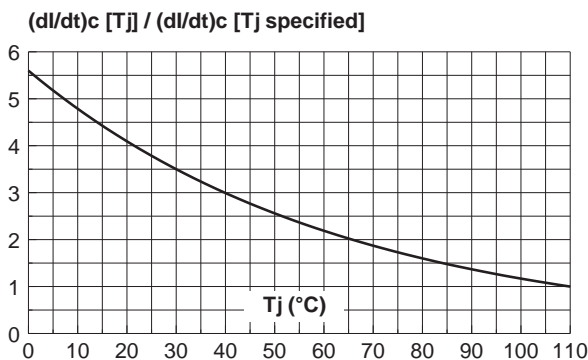
**Fig. 5:** Surge peak on-state current versus number of cycles.



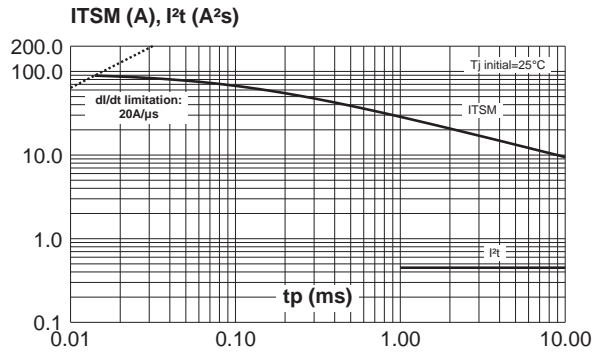
**Fig. 7:** On-state characteristics (maximum values).



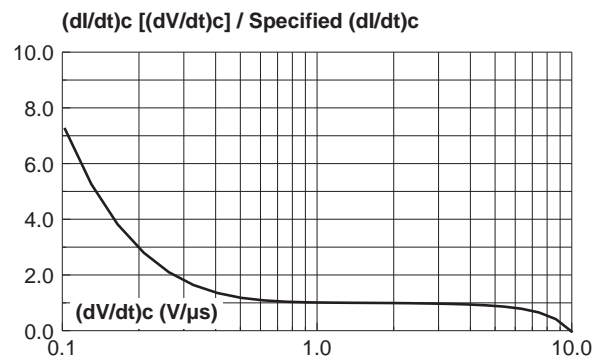
**Fig. 9:** Relative variation of critical rate of decrease of main current versus junction temperature.



**Fig. 6:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$ , and corresponding value of  $I^2t$ .

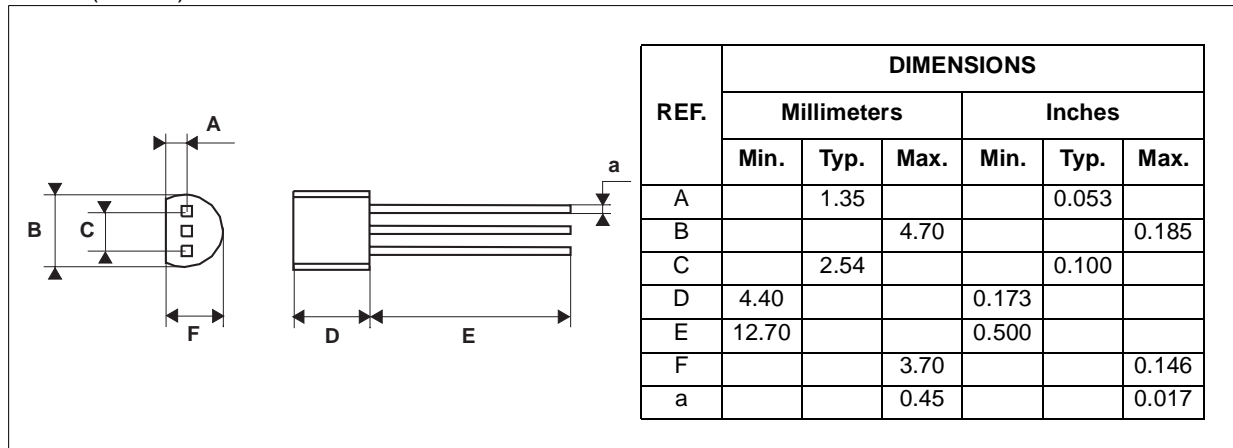


**Fig. 8:** Relative variation of critical rate of decrease of main current versus  $(dV/dt)_c$  (typical values).



## PACKAGE MECHANICAL DATA

TO-92 (Plastic)



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