Z00607MA

STANDARD

0.8A TRIAC

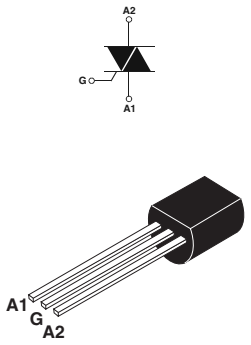
Table 1: Main Features

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.



TO-92

Table 2: Order Codes

Part Numbers	Marking
Z00607MA 1BA2	Z0607MA
Z00607MA 2BL2	Z0607MA
Z00607MA 5BL2	Z0607MA

Table 3: Absolute Maximum Ratings

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

Tables 4: Electrical Characteristics (T_j = 25°C, unless otherwise specified)

Symbol	Test Conditions	Quadrant		Value	Unit
I_{GT} (1)	V_D = 12 V R_L = 30 Ω	I - II - III	MAX.	5	mA
		IV		7	
V_{GT}		ALL	MAX.	1.3	V
V_{GD}	$V_D = V_{DRM}$ R_L = 3.3 kΩ T_j = 110°C	ALL	MIN.	0.2	V
I_H (2)	I_T = 200 mA		MAX.	5	mA
I_L	I_G = 1.2 I_{GT}	I - III - IV	MAX.	10	mA
		II		20	
dV/dt (2)	V_D = 67 %V_{DRM} gate open T_j = 110°C		MIN.	10	V/µs
(dI/dt)c (2)	(dV/dt)c = 0.35 A/ms T_j = 110°C		MIN.	1.5	A/ms

Table 5: Static Characteristics

Symbol	Test Conditions			Value	Unit
V_{TM} (2)	I_{TM} = 1.1 A t_p = 380 µs	T_j = 25°C	MAX.	1.5	V
V_{to} (2)	Threshold voltage	T_j = 110°C	MAX.	0.95	V
R_d (2)	Dynamic resistance	T_j = 110°C	MAX.	420	mΩ
I_{DRM}	$V_{DRM} = V_{RRM}$ = 600 V	T_j = 25°C	MAX.	5	µA
I_{RRM}		T_j = 110°C		0.1	mA

Note 1: minimum I_{GT} is guaranted at 5% of I_{GT} max.

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

Table 6: Thermal resistances

Symbol	Parameter	Value	Unit
$R_{th(j-l)}$	Junction to lead (A.C.)	60	°C/W
$R_{th(j-a)}$	Junction to ambient	150	°C/W

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

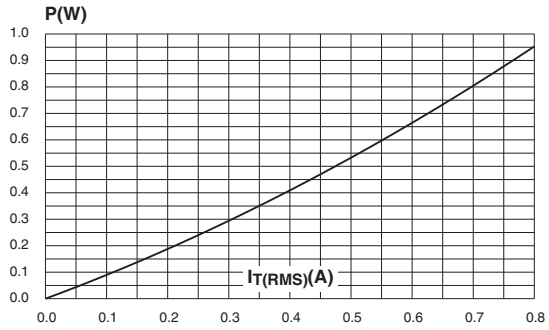


Figure 2: RMS on-state current versus ambient temperature (full cycle)

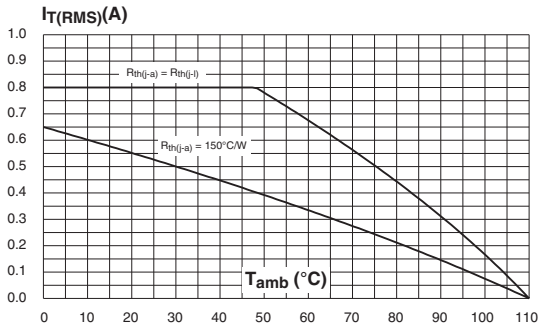


Figure 3: Relative variation of thermal impedance versus pulse duration

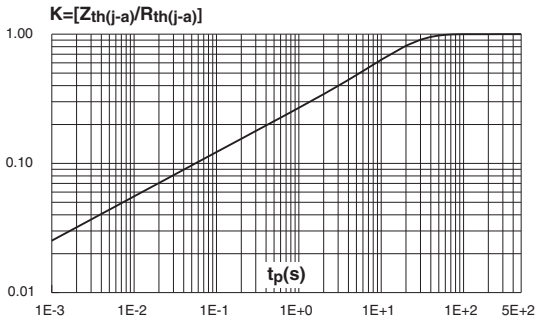


Figure 4: Relative variation of gate trigger current, holding current and latching current versus junction temperature (typical values)

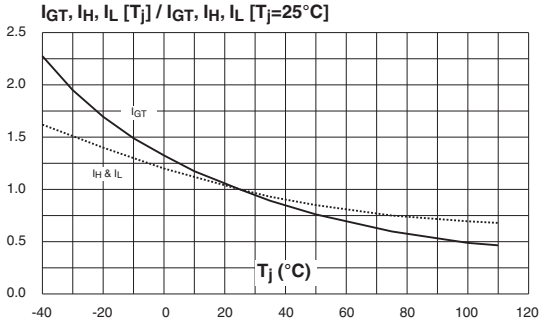


Figure 5: Surge peak on-state current versus number of cycles

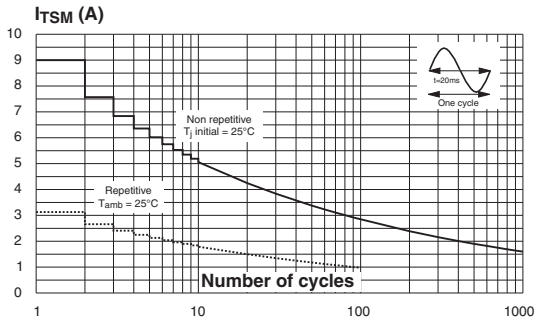


Figure 6: Non-repetitive surge peak on-state current for a sinusoidal pulse with width t_p < 10 ms and corresponding value of I^2t

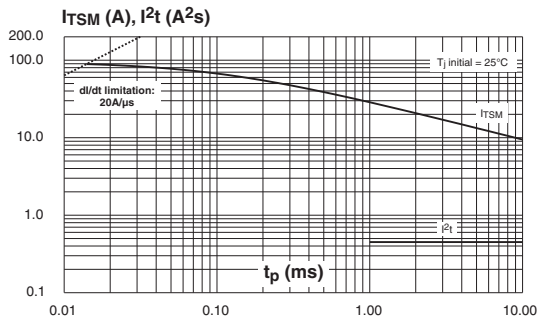


Figure 7: On-state characteristics (maximum values)

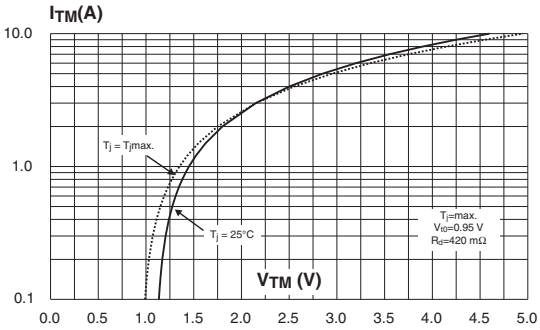


Figure 8: Relative variation of critical rate of decrease of main current versus (dV/dt)c (typical values)

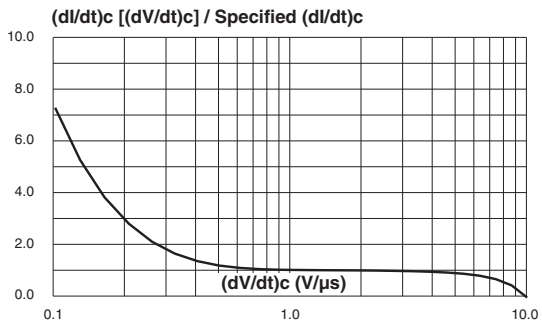


Figure 9: Relative variation of critical rate of decrease of main current versus junction temperature

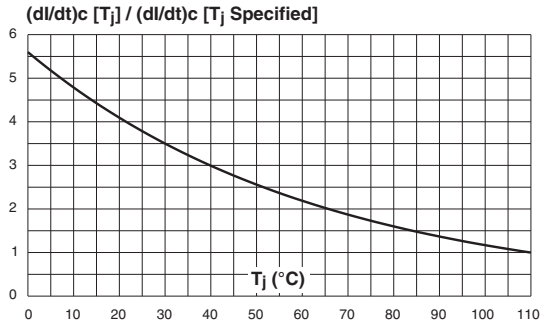


Figure 10: Ordering Information Scheme

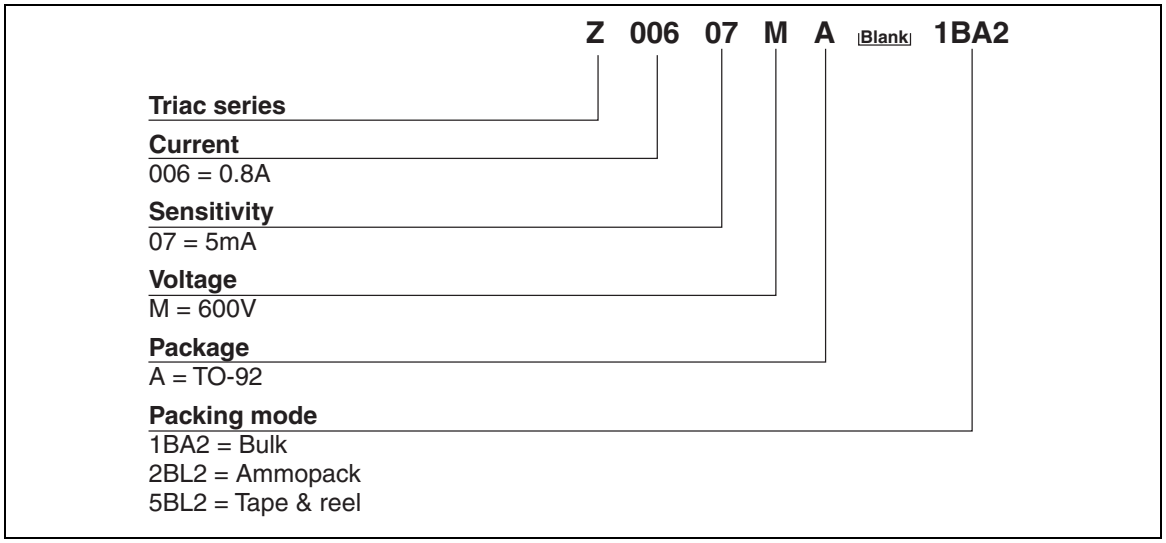
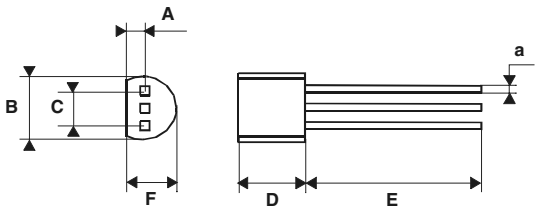


Table 7: Product Selector

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

Figure 11: TO-92 Package Mechanical Data



REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A		1.35			0.053	
B			4.70			0.185
C		2.54			0.100	
D	4.40			0.173		
E	12.70			0.500		
F			3.70			0.146
a			0.50			0.019

Table 8: Ordering Information

Ordering type	Marking	Package	Weight	Base qty	Delivery mode
Z00607MA 1BA2	Z0607MA	TO-92	0.2 g	2500	Bulk
Z00607MA 2BL2	Z0607MA			2000	Ammopack
Z00607MA 5BL2	Z0607MA			2000	Tape & reel

Table 9: Revision History

Date	Revision	Description of Changes
Oct-2001	4	Last update.
25-Mar-2005	5	Package: TO-92 tape & reel delivery mode 5BL2 added.
21-Jun-2005	6	Markings updated from Z006xxxx to Z06xxxx
13-Sep-2005	7	Z00607MA 2BL2: marking corrected from 00607mA to Z0607MA