

Standard

0.8 A Triacs

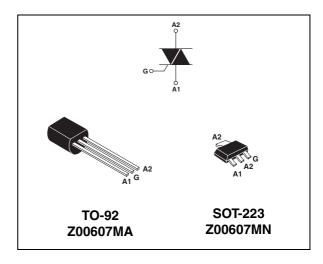
Main Features

Symbol	Value	Unit	
I _{T(RMS)}	0.8	Α	
V_{DRM}/V_{RRM}	600	V	
I _{GT (Q₁)}	5	mA	

Description

The Z00607 is suitable for low power AC switching applications. Typical applications include home appliances (electrovalve, pump, door lock, small lamp control), fan speed controllers,...

Thanks to the low gate triggering current these triacs can be driven directly by microcontrollers.



Order Codes

Part Number	Marking
Z00607MA 1BA2	Z0607MA
Z00607MA 2BL2	Z0607MA
Z00607MA 5BL2	Z0607MA
Z00607MN 5AA4	Z6M

Table 1. Absolute maximum ratings

Symbol	Parameter			Value	Unit	
1	RMS on-state current	SOT-223	$T_{tab} = 85^{\circ} C$	0.8	Α	
IT(RMS)	(full sine wave)	TO-92	T _L = 50° C	0.0	A	
1 .	Non repetitive surge peak on-state	F = 50 Hz	t = 20 ms	9	Α	
I _{TSM}	urrent (full cycle, T _j initial = 25° C)	F = 60 Hz	t = 16.7 ms	9.5	τ.	
l ² t	I ² t Value for fusing	t _p = 10 ms		0.45	A ² s	
dI/dt	Critical rate of rise of on-state current $I_G = 2 \times I_{GT}$, $t_r \le 100 \text{ ns}$	F = 120 Hz	T _j = 110° C	20	A/µs	
I _{GM}	Peak gate current $t_p = 20 \mu s$ $T_j = 110^{\circ} C$		T _j = 110° C	1	Α	
$P_{G(AV)}$	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	° C		

Characteristcs Z00607

1 Characteristcs

Table 2. Electrical characteristics ($T_j = 25^{\circ}$ C, unless otherwise specified)

Symbol	Test Conditions	Quadrant		Value	Unit
I _{GT} ⁽¹⁾		1 - 11 - 111	MAX	5	mA
'GT `	$V_D = 12 \text{ V} R_L = 30 \Omega$	IV	IVIAA	7	IIIA
V _{GT}		ALL	MAX	1.3	٧
V_{GD}	$V_D = V_{DRM}$ $R_L = 3.3 \text{ k}\Omega \text{ T}_j = 110^{\circ} \text{ C}$ ALL		MIN	0.2	٧
I _H (2)	I _T = 200 mA		MX.	5	mA
	1121.	I - III - IV	MAX	10	mA
ΙL	$I_{G} = 1.2 I_{GT}$	II	IVIAA	20	IIIA
dV/dt (2)	$V_D = 67\% V_{DRM}$ gate open $T_j = 110^{\circ} C$		MIN	10	V/µs
(dV/dt)c (2)	$(dV/dt)c = 0.35 \text{ A/ms}$ $T_j = 110^{\circ} \text{ C}$		MIN	1.5	V/µs

^{1.} minimum $I_{\mbox{\scriptsize GT}}$ is guaranteed at 5% of $I_{\mbox{\scriptsize GT}}$ max.

Table 3. Static characteristics

Symbol	Test Conditions			Value	Unit
V _{TM} ⁽¹⁾	$I_{TM} = 1.1 \text{ A}$ $t_p = 380 \mu\text{s}$	T _j = 25° C	MAX.	1.5	٧
V _{to} (1)	Threshold voltage	T _j = 110° C	MAX.	0.95	٧
R _d ⁽¹⁾	Dynamic resistance	T _j = 110° C	MAX.	420	mΩ
I_{DRM} I_{RRM} $V_{DRM} = V_{RRM} = 600 V$		T _j = 25° C	MAX.	5	μΑ
		T _j = 110° C	IVIAA.	0.1	mA

^{1.} for both polarities of A2 referenced to A1.

Table 4. Thermal resistances

Symbol	Parameter			Value	Unit
R _{th(j-t)}	Junction to tab (AC)		SOT-223	25	° C/W
R _{th(j-l)}	Junction to lead (AC)		TO-92	60	- C/VV
D	R _{th/i-a} Junction to ambient	$S^{(1)} = 5 \text{ cm}^2$	SOT-223	60	° C/W
$R_{th(j-a)}$	Junction to ambient		TO-92	150	C/VV

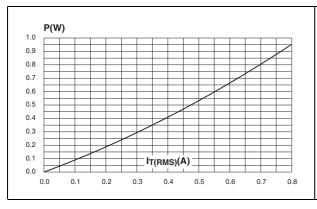
^{1.} S = Copper surface under tab.

^{2.} for both polarities of A2 referenced to A1.

Z00607 Characteristcs

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

Figure 2. Relative variation of gate trigger current, holding current and latching current versus junction temperature (typical values)



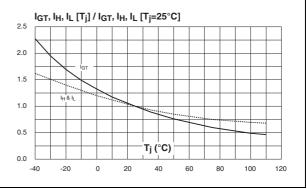
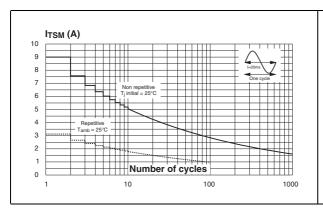


Figure 3. Surge peak on-state current versus Figure 4. number of cycles

Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10 \text{ ms}$ and corresponding value of l^2t



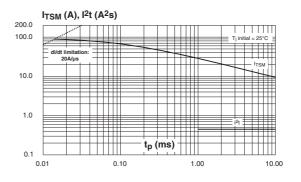
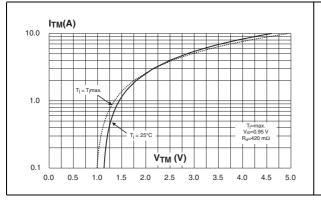


Figure 5. On-state characteristics (maximum values)

Figure 6. Relative variation of critical rate of decrease of main current versus (dV/dt)c (typical values)



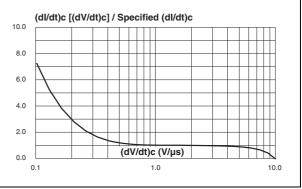
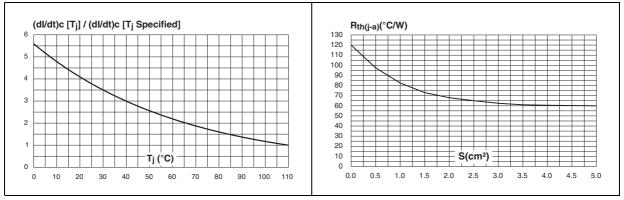
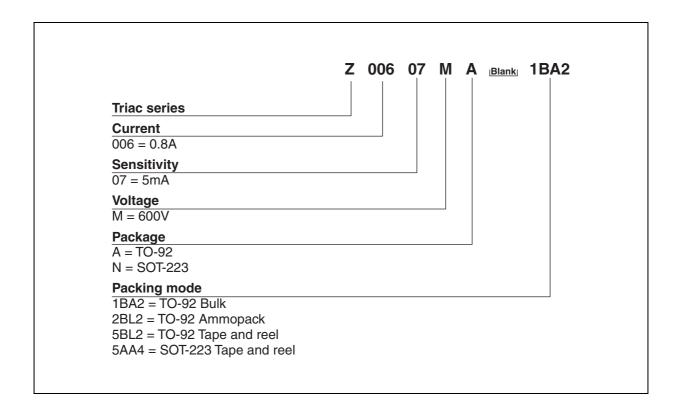


Figure 7. Relative variation of critical rate of Figure 8. decrease of main current versus junction temperature

SOT-223 Thermal resistance junction to ambient versus copper surface under tab (printed circuit board FR4, copper thickness: 35 µm)

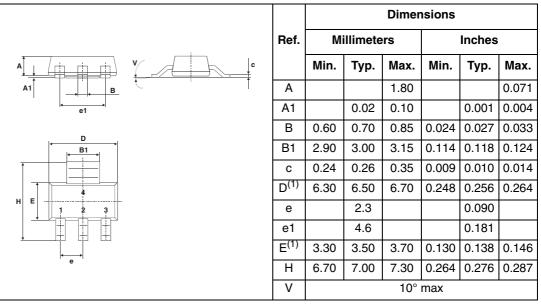


2 Ordering information scheme



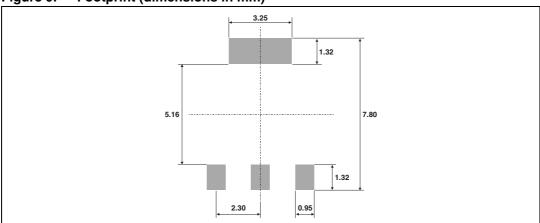
3 Packaging information

Table 5. SOT-223 Dimensions



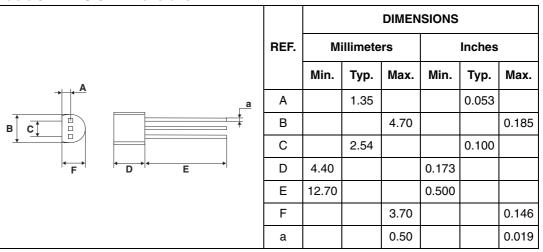
^{1.} Do not include mold flash or protrusions. Mold flash or protrusions shall not exceed 0.15mm (0.006inches)

Figure 9. Footprint (dimensions in mm)



Ordering information Z00607

Table 6. TO-92 Dimensions



4 Ordering information

Ordering type	Marking	Package	Weight	Base quantity	Delivery mode
Z00607MA 1BA2	Z0607MA			2500	Bulk
Z00607MA 2BL2	Z0607MA	TO-92	0.2 g	2000	Ammopack
Z00607MA 5BL2	Z0607MA			2000	Tape and reel
Z00607MN 5AA4	Z6M	SOT-223	0.12 g	1000	Tape and reel

5 Revision history

Date	Revision	Description of Changes
Oct-2001	4	Last update.
25-Mar-2005	5	Package: TO-92 tape and 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
12-Apr-2007	8	Reformatted to current standard. Added SOT-223 package. Changed Tj from +125 to +110 in <i>Table 1</i>

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