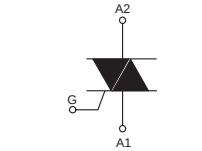
Z04 Series

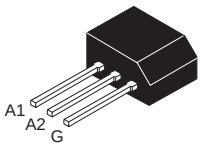
STANDARD

4A TRIACs

MAIN FEATURES:

Symbol	Value	Unit
$I_{T(RMS)}$	4	A
V_{DRM}/V_{RRM}	600 to 800	V
$I_{GT\ (Q_1)}$	3 to 25	mA





TO202-3
(Z04xxF)

DESCRIPTION

The Z04 series is suitable for general purpose AC switching applications. They can be found in applications such as touch light dimmers, fan controllers, HID lamp ignitors,...
Different gate current sensitivities are available, allowing optimized performances when controlled directly from microcontrollers.

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter			Value	Unit
$I_{T(RMS)}$	RMS on-state current (full sine wave)		Tl = 30°C	4	A
			Tamb = 25°C	1	
I_{TSM}	Non repetitive surge peak on-state current (full cycle, Tj initial = 25°C)	F = 50 Hz	t = 20 ms	20	A
		F = 60 Hz	t = 16.7 ms	21	
I^2t	I^2t Value for fusing	tp = 10 ms		2.2	A^2s
dI/dt	Critical rate of rise of on-state current I_G = 2 x I_{GT} , tr ≤ 100 ns	F = 120 Hz	Tj = 125°C	20	A/µs
I_{GM}	Peak gate current	tp = 20 µs	Tj = 125°C	1.2	A
$P_{G(AV)}$	Average gate power dissipation		Tj = 125°C	0.2	W
T_{stg} T_j	Storage junction temperature range Operating junction temperature range			- 40 to + 150 - 40 to + 125	°C

ELECTRICAL CHARACTERISTICS (Tj = 25°C, unless otherwise specified)

Symbol	Test Conditions	Quadrant		Z04xx				Unit
				02	05	09	10	
I_{GT} (1)	V_D = 12 V R_L = 30 Ω	ALL	MAX.	3	5	10	25	mA
V_{GT}		ALL	MAX.	1.3				V
V_{GD}	$V_D = V_{DRM}$ R_L = 3.3 kΩ Tj = 125°C	ALL	MIN.	0.2				V
I_H (2)	I_T = 50 mA		MAX.	3	5	10	25	mA
I_L	$I_G = 1.2\ I_{GT}$	I - III - IV	MAX.	6	10	15	25	mA
		II		12	15	25	50	
dV/dt (2)	V_D = 67 %V_{DRM} gate open Tj = 110°C		MIN.	10	20	100	200	V/µs
(dV/dt)c (2)	(dI/dt)c = 1.8 A/ms Tj = 110°C		MIN.	0.5	1	2	5	V/µs

STATIC CHARACTERISTICS

Symbol	Test Conditions			Value	Unit
V_{TM} (2)	I_{TM} = 5.5 A tp = 380 µs	Tj = 25°C	MAX.	2.0	V
V_{to} (2)	Threshold voltage	Tj = 125°C	MAX.	0.95	V
R_d (2)	Dynamic resistance	Tj = 125°C	MAX.	180	mΩ
I_{DRM}	$V_{DRM} = V_{RRM}$	Tj = 25°C	MAX.	5	µA
I_{RRM}		Tj = 125°C		0.5	mA

Note 1: minimum IGT is guaranted at 5% of IGT max.

Note 2: for both polarities of A2 referenced to A1

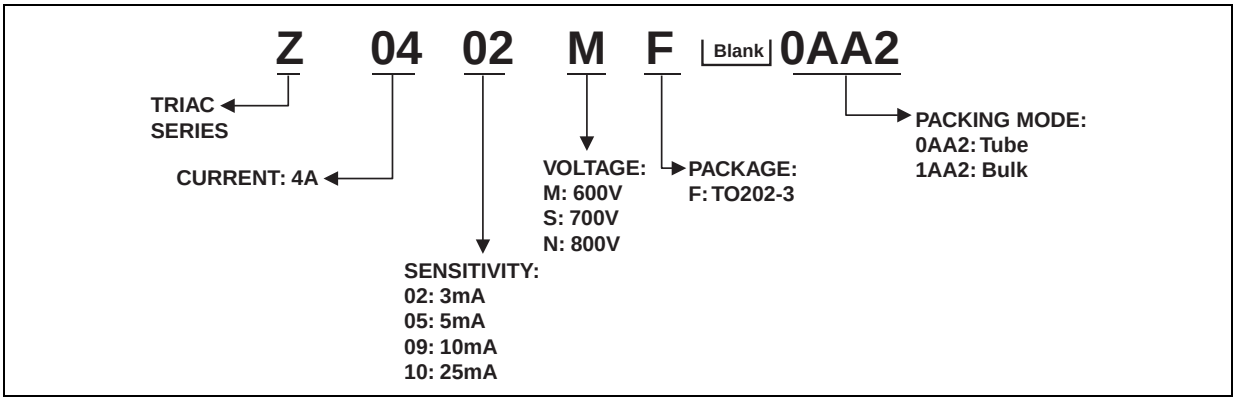
THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-l)}$	Junction to lead (AC)	15	°C/W
$R_{th(j-a)}$	Junction to ambient	100	°C/W

PRODUCT SELECTOR

Part Number	Voltage			Sensitivity	Type	Package
	600 V	700 V	800 V			
Z0402MF	X			3 mA	Standard	TO202-3
Z0402SF		X		3 mA	Standard	TO202-3
Z0402NF			X	3 mA	Standard	TO202-3
Z0405MF	X			5 mA	Standard	TO202-3
Z0405SF		X		5 mA	Standard	TO202-3
Z0405NF			X	5 mA	Standard	TO202-3
Z0409MF	X			10 mA	Standard	TO202-3
Z0409SF		X		10 mA	Standard	TO202-3
Z0409NF			X	10 mA	Standard	TO202-3
Z0410MF	X			25 mA	Standard	TO202-3
Z0410SF		X		25 mA	Standard	TO202-3
Z0410NF			X	25 mA	Standard	TO202-3

ORDERING INFORMATION



OTHER INFORMATION

Part Number	Marking	Weight	Base quantity	Packing mode
Z04xxyF 0AA2	Z04xxyF	0.8 g	50	Tube
Z04xxyF 1AA2	Z04xxyF	0.8 g	250	Bulk

Note: xx = sensitivity, y = voltage

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

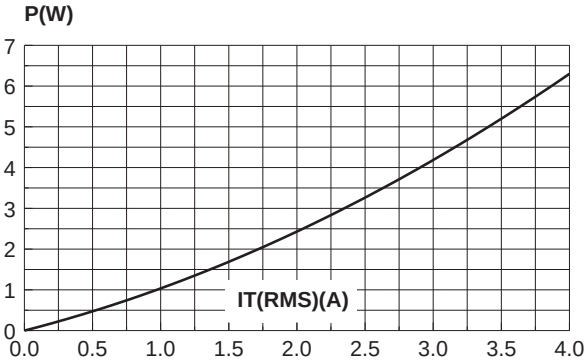


Fig. 2: RMS on-state current versus ambient temperature (full cycle).

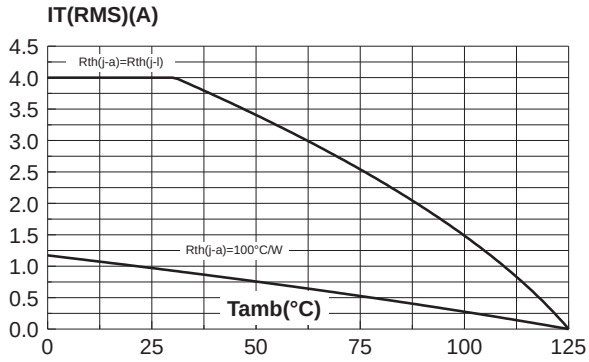


Fig. 3: Relative variation of thermal impedance junction to ambient versus pulse duration.

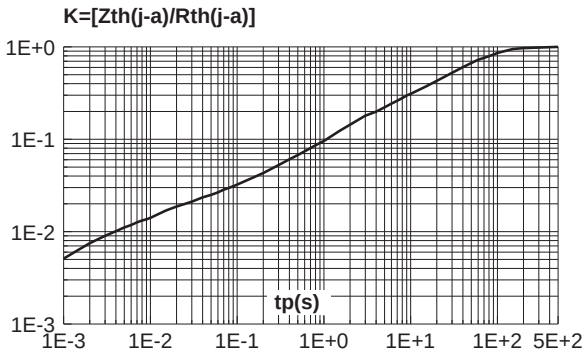


Fig. 4: Relative variation of gate trigger current, holding current and latching current versus junction temperature (typical values).

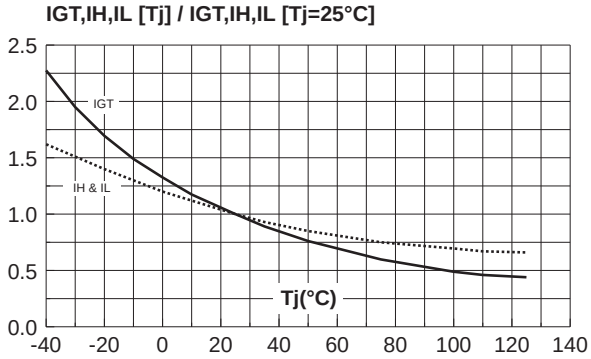


Fig. 5: Surge peak on-state current versus number of cycles.

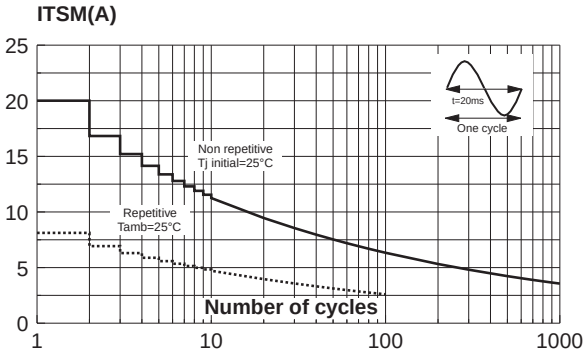


Fig. 6: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp < 10ms, and corresponding value of I^2t.

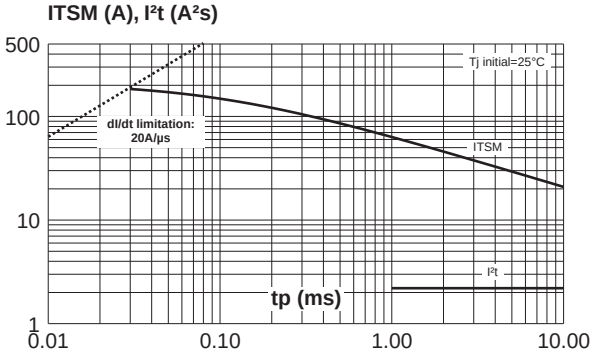


Fig. 7: On-state characteristics (maximum values).

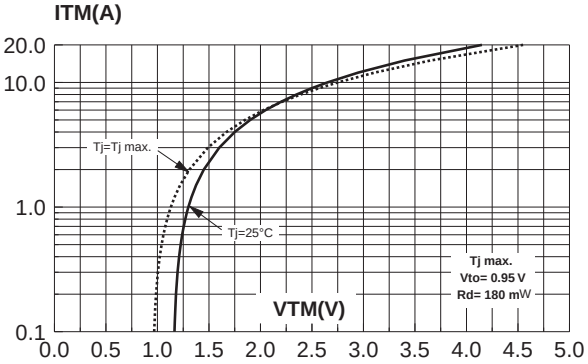


Fig. 8: Relative variation of critical rate of decrease of main current versus (dV/dt)c (typical values).

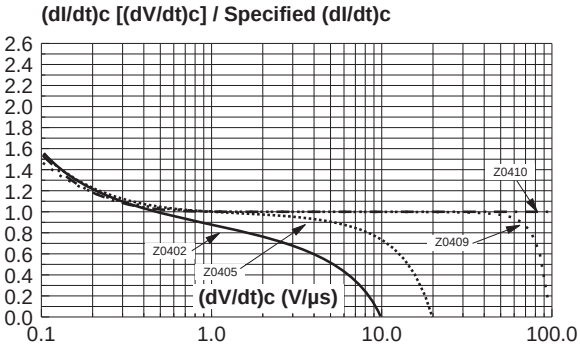
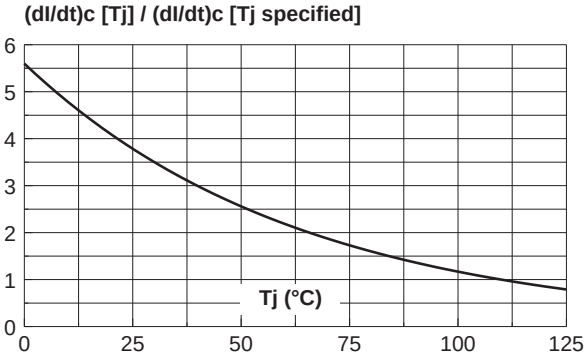
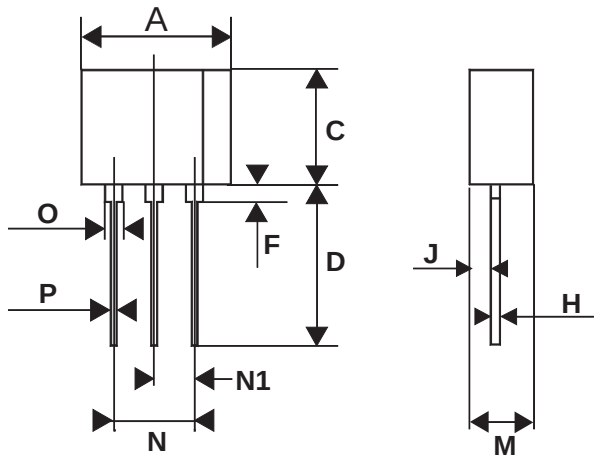


Fig. 9: Relative variation of critical rate of decrease of main current versus junction temperature.



PACKAGE MECHANICAL DATA

TO202-3 (Plastic)



REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			10.1			0.398
C		7.3			0.287	
D		10.5			0.413	
F			1.5			0.059
H		0.51			0.020	
J		1.5			0.059	
M		4.5			0.177	
N			5.3			0.209
N1		2.54			0.100	
O			1.4			0.055
P			0.7			0.028

Information furnished is believed to be accurate and reliable. However, STMicroelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of STMicroelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.

© The ST logo is a registered trademark of STMicroelectronics

© 2003 STMicroelectronics - Printed in Italy - All Rights Reserved

STMicroelectronics GROUP OF COMPANIES
Australia - Brazil - China - Finland - France - Germany - Hong Kong - India - Italy - Japan - Malaysia
Malta - Morocco - Singapore - Spain - Sweden - Switzerland - United Kingdom - U.S.A

http://www.st.com

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Triacs ***category:***

Click to view products by STMicroelectronics ***manufacturer:***

Other Similar products are found below :

CTA08-1000CW CTB24-800BW CTA08-1000C CTA12-800BWPT CTA16-1000B CTB24-800B BT137-600-0Q 5615 OT415Q 2N6075A NTE5629 NTE5688 CTB08-400CW D31410 T2535T-8I BTA425Z-800BTQ KS100N12 TOPT16-800C0,127 OT408,135 BT134-800E BT136D BTB16Q-600BW Z0409MF BTA04-600B BTA06-600BRG BTA06-800BWRG BTA08-600BRG BTA08-800B BT136-600,127 MAC97A6,116 BT137-600E,127 BTB16-600CW3G BTB16-600CW3G Z0109MN,135 T825T-6I T1220T-6I NTE5638 ACST1235-8FP BT136X-600E,127 MAC4DLM-1G BT134-600D,127 BTA08-600BW3G NTE56008 NTE56017 NTE56018 NTE56059 NTE5608 NTE5609 NTE5656 NTE56020