



Z04 Series

4A TRICs

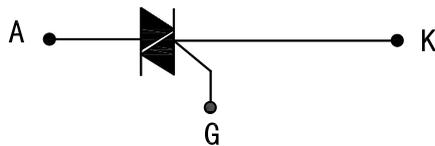
DESCRIPTION:

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,...

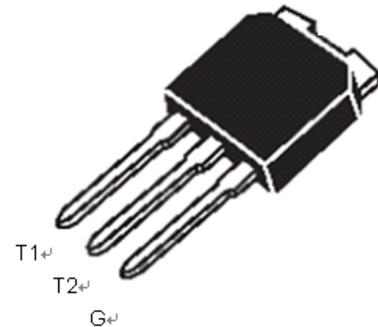
Different gate current sensitivities are available, allowing optimized performances when controlled directly from microcontrollers.

MAIN FEATURES

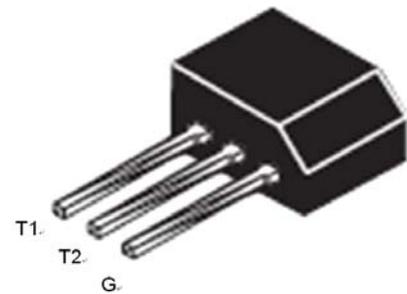
Symbol	Value	Unit
$I_{T(RMS)}$	4	A
V_{DRM}/V_{RRM}	600	V
I_{GT}	5-25	mA



TO-251(IPAK)



TO-202-3



ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		T_{stg}	- 40 to +150	°C
Operating junction temperature range		T_j	- 40 to +125	
Repetitive Peak Off-state Voltage	$T_j=25^{\circ}C$	V_{DRM}	600	V
Repetitive Peak Reverse Voltage		V_{RRM}	600	
RMS on-state current (180° conduction angle)	$T_l=30^{\circ}C$	$I_{T(RMS)}$	4	A
Non repetitive surge peak on-state current (full cycle T_j initial=25°C)	$t_p=20ms$	I_{TSM}	20	A
	$t_p=16.7ms$		21	
$I^2 t$ Value for fusing	$t_p=10ms$	$I^2 t$	2.2	A^2s
Critical rate of rise of on-state current $I_G=2 \times I_{GT}$, $t_r \leq 100 ns$, $f=120Hz$, $T_j=125^{\circ}C$		dI/dt	20	A/us
Peak gate current	$t_p=20us$, $T_j=125^{\circ}C$	I_{GM}	1.2	A
Average gate power dissipation	$T_j=125^{\circ}C$	$P_{G(AV)}$	0.2	W

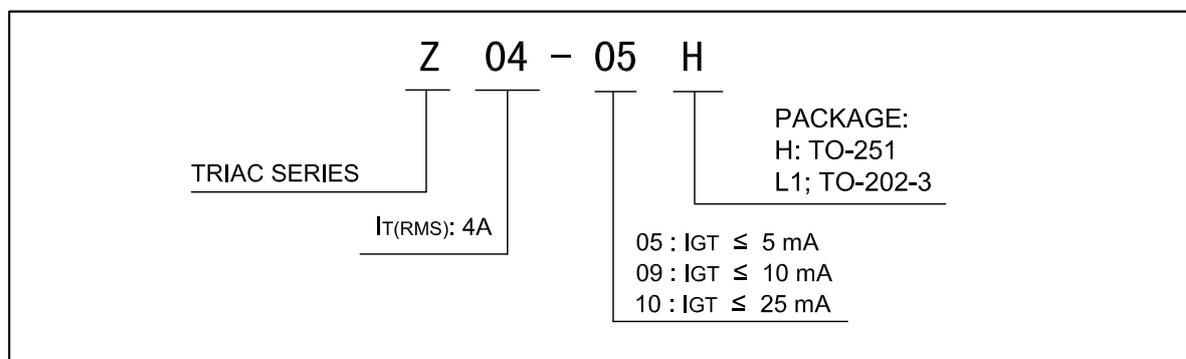
ELECTRICAL CHARACTERISTICS($T_j=25\text{ }^\circ\text{C}$ unless otherwise specified)

Symbol	Test Condition	Quadrant		Z04 × ×			Unit
				05	09	10	
IGT	$V_D=12\text{V}$ $R_L=33\Omega$	ALL	Max.	5	10	25	mA
VGT		ALL	Max.	1.3			V
VGD	$V_D=V_{DRM}$ $R_L=3.3\text{K}\Omega$ $T_j=125\text{ }^\circ\text{C}$	ALL	Min.	0.2			V
IL	$I_G=1.2 I_{GT}$	I - II - III	Max.	10	15	25	mA
		IV		15	25	35	
IH	$I_T=50\text{mA}$		Max.	5	10	25	mA
V _{TM}	$I_T=5.5\text{A}$ $t_p=380\mu\text{S}$	$T_j=25\text{ }^\circ\text{C}$	Max.	2.0			V
dV/dt	$V_D=67\%V_{DRM}$ Gate open	$T_j=110\text{ }^\circ\text{C}$	Min.	20	100	200	V/ μs
(dV/dt) _c	(dl/dt) _c =1.8A/ms	$T_j=110\text{ }^\circ\text{C}$	Min.	1	2	5	V/ μs
IDRM IRRM	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25\text{ }^\circ\text{C}$	Max.	5			μA
		$T_j=125\text{ }^\circ\text{C}$		0.5			mA

THERMAL RESISTANCES

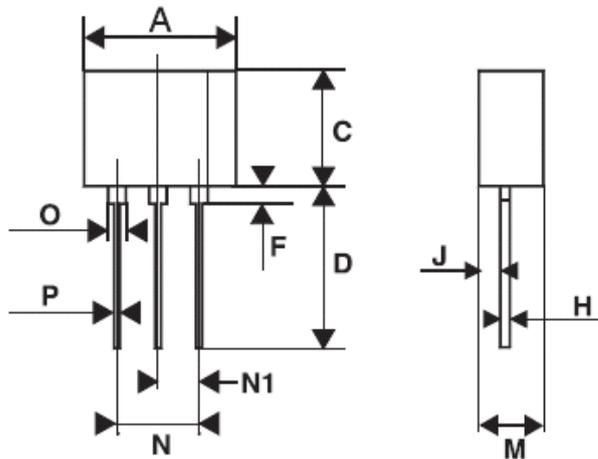
Symbol	Parameter	Value	Unit
$R_{th(J-L)}$	Junction to lead(AC)	15	$^\circ\text{C/W}$

ORDERING INFORMATION



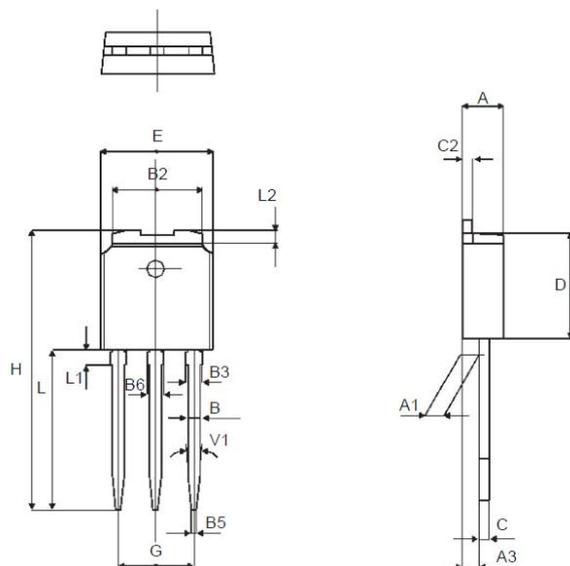
PACKAGE MECHANICAL DATA

TO-202-3



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

TO-251(IPAK)



REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.2		2.4	0.086		0.094
A1	0.9		1.1	0.035		0.043
A3	0.7		1.3	0.027		0.051
B	0.64		0.9	0.025		0.035
B2	5.2		5.4	0.204		0.212
B3			0.85			0.033
B5		0.3			0.035	
B6			0.95			0.037
C	0.45		0.6	0.017		0.023
C2	0.48		0.6	0.019		0.023
D	6		6.2	0.236		0.244
E	6.4		6.6	0.252		0.260
G	4.4		4.6	0.173		0.181
H	15.9		16.3	0.626		0.641
L	9		9.4	0.354		0.370
L1	0.8		1.2	0.031		0.047
L2		0.8	1		0.031	0.039
V1		10°			10°	

Fig. 1: Maximum average power dissipation versus average on-state current.

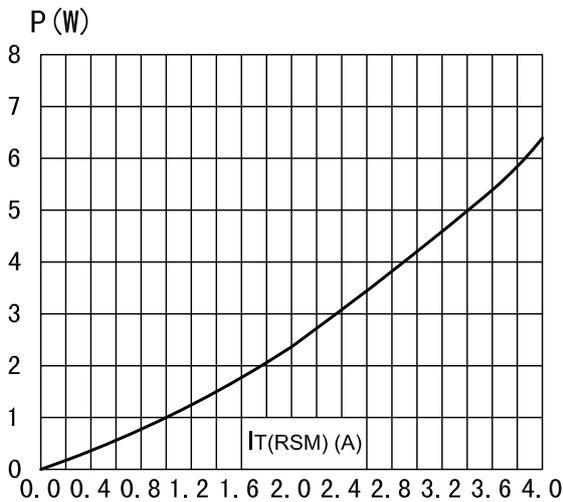


Fig. 3: Surge peak on-state current versus number of cycles.

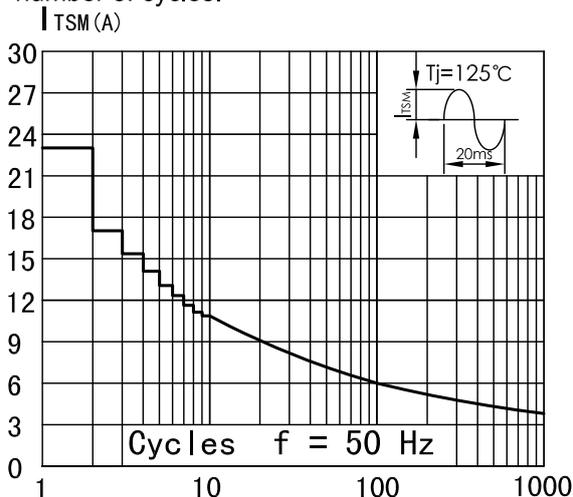


Fig. 5: Relative variation of gate trigger current, holding current and latching current versus junction temperature (typical values).

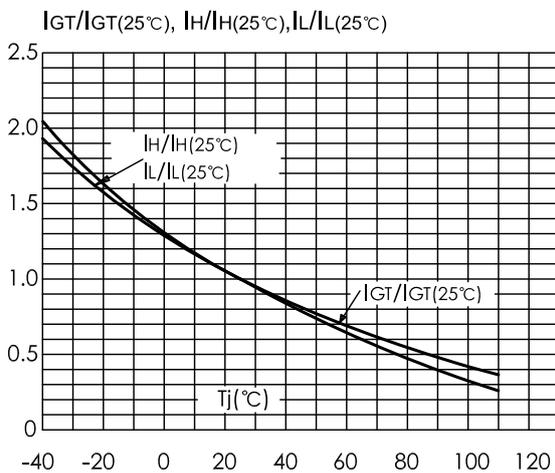


Fig. 2: RMS on-state current versus ambient temperature (full cycle).

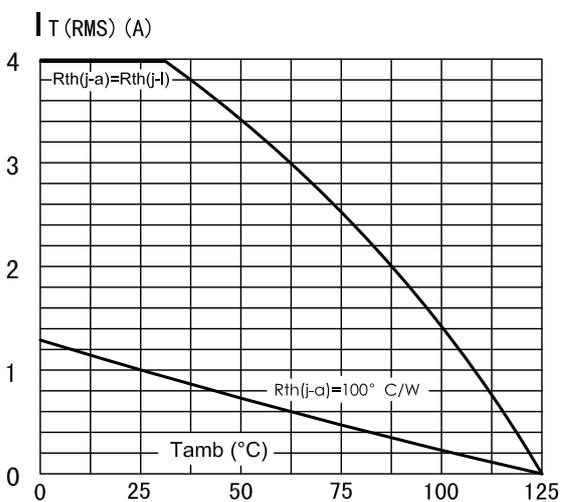


Fig. 4: On-state characteristics (maximum values).

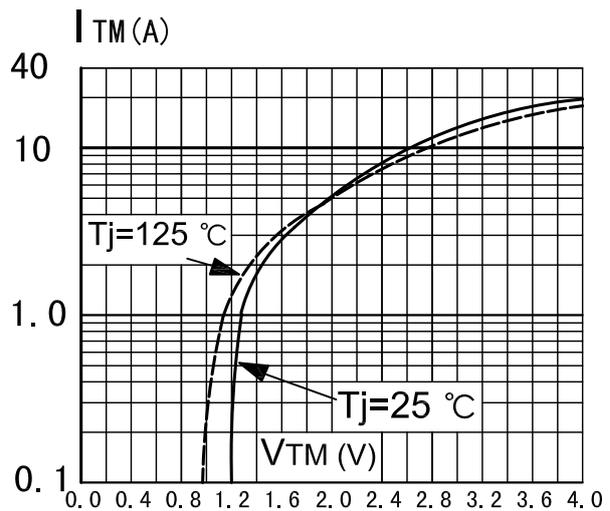


Fig. 6: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t .

