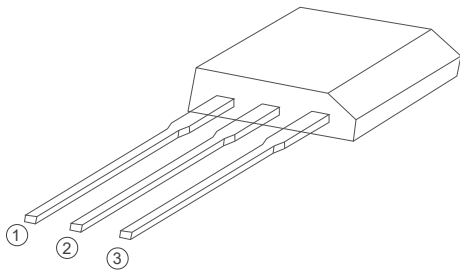
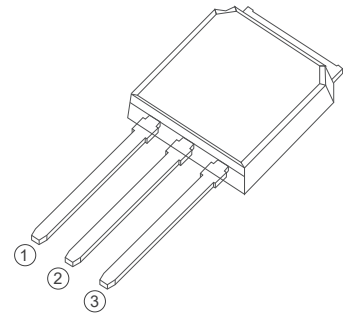


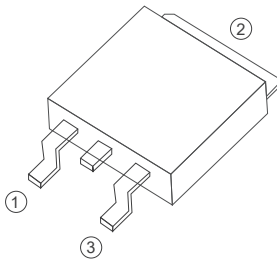
X0405MF Series  
4A SCRs  
Sensitive Gate SCRs



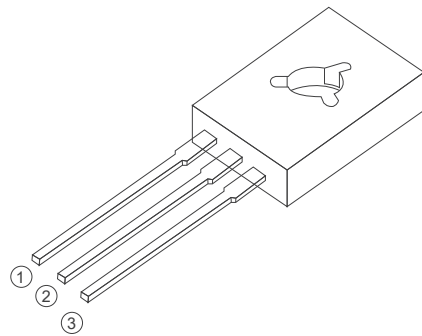
TO-202-3



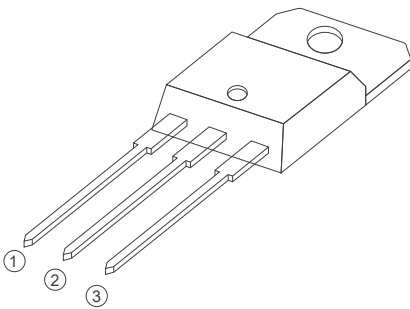
TO-251



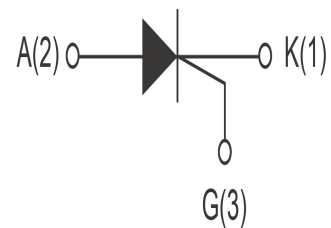
TO-252



TO-126



TO-220B Non-Insulated



## FEATURES

>  $I_T(RMS):4A$  >  $V_{GT}: 0.8V$  >  $V_{DRM} V_{RRM}:600V$

## APPLICATIONS

Washing machine, vacuums, massager, solid state relay, AC Motor speed regulation and so on.

**Absolute Maximum Ratings** ( $T_j=25^{\circ}\text{C}$  unless otherwise specified)

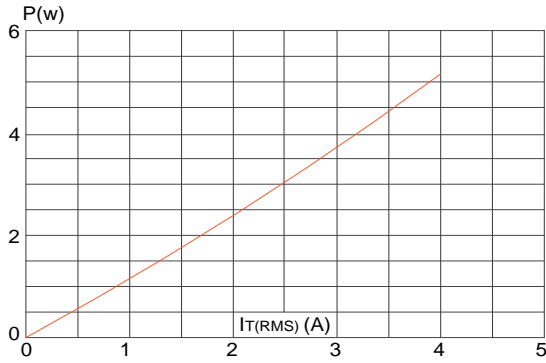
Symbol	Parameter	Conditions	Ratings	Unit
VDRM VRRM	Repetitive Peak Off-State Voltage	X0405	600	V
IT(RMS)	R.M.S On-State Current		4	A
IT(AV)	average On-State Current		2.5	A
ITSM	Surge On-State Current	F=50Hz, tp=10ms	30	A
$I^2t$	$I^2t$ for fusing	Tp=10ms	4.5	A <sup>2</sup> s
IGM	Peak Gate Current	tp=20uS, Tj=110°C	1.2	A
PG(AV)	Average Gate Power Dissipation	Tj=110°C	0.2	W
PGM	Peak Gate Power Dissipation	tp=20uS, Tj=110°C	1	W
Tj	Operating Junction Temperature		~40~125	°C
TSTG	Storage Temperature		~40~150	°C

**Electrical Characteristics** ( $T_j=25^{\circ}\text{C}$  unless otherwise specified)

Symbol	Parameter	Test Conditions	Value	Unit
IDRM	Repetitive Peak Off-State Current	Tc=25°C	≤5	uA
		Tc=110°C	≤100	uA
IRRM	Repetitive Peak Reverse Current	Tc=25°C	≤5	uA
		Tc=110°C	≤100	uA
VTM	Forward "on" voltage	IT=8A tp=380us	≤1.7	V
VGD	Gate nontrigger voltage	VD=VDRM, Tj=110°C, RGK=1KΩ, RL=3.3KΩ	≥0.2	V
IL	Latching current	IG=1.2IGT	≤6	mA
IH	Holding current	VD=12V, IGT=0.1A	≤5	mA
VGT	Gate trigger voltage	VD=12V	≤0.8	V
IGT	Gate trigger current	VD=12V, IT=0.1A	≤120	uA
dv/dt	Critical-rate of rise of commutation voltage	VD=2/3VDRM, Tj=110°C, RGK=1KΩ	≥10	V/us

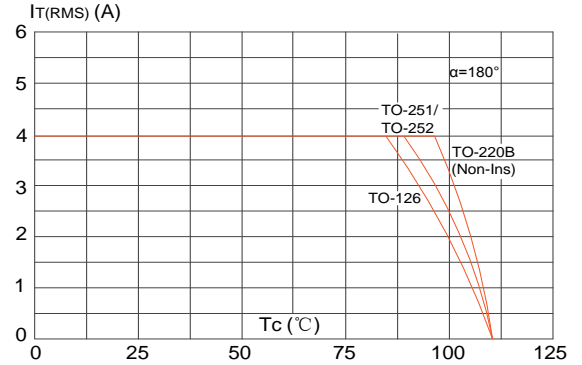
**FIG1**

Maximum power dissipation versus RMS on-state current



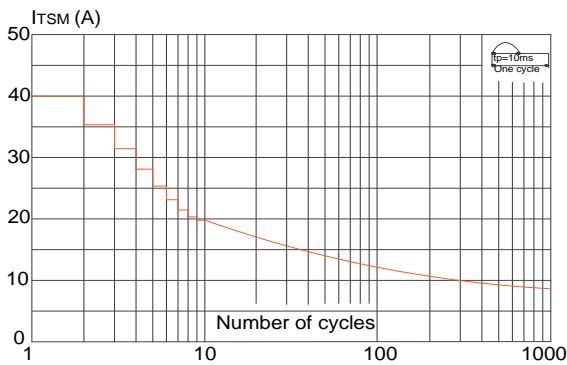
**FIG2**

RMS on-state current versus case temperature



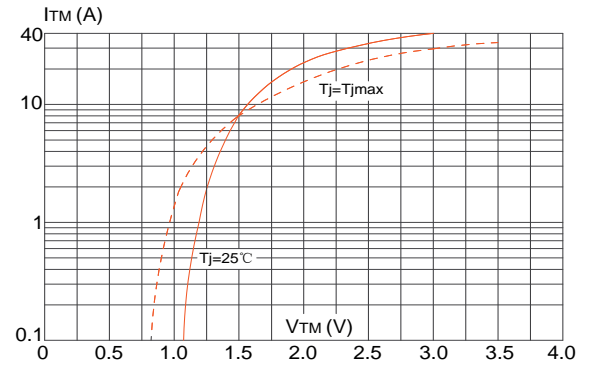
**FIG3**

Surge peak on-state current versus number of cycles



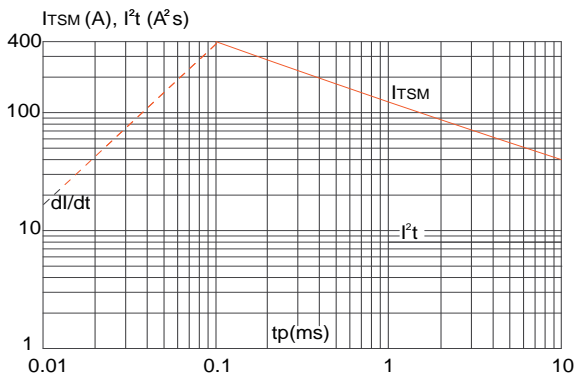
**FIG4**

On-state characteristics (maximum values)



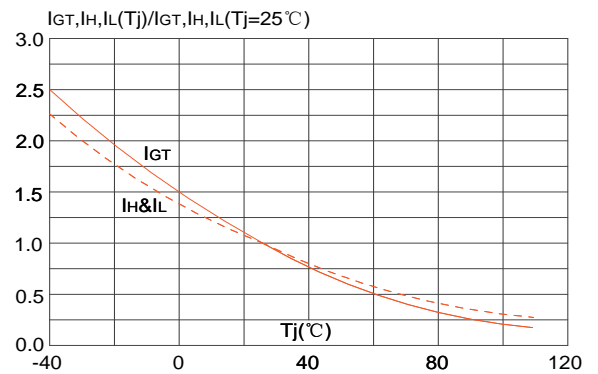
**FIG5**

Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 20ms$ , and corresponding value of  $I^2t$  ( $di/dt < 100A/\mu s$ )

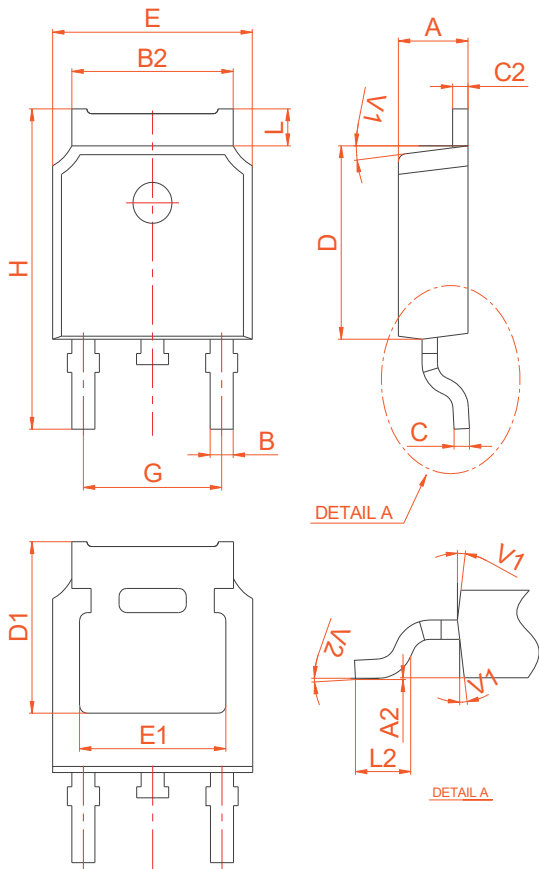


**FIG6**

Relative variations of gate trigger current, holding current and latching current versus junction temperature



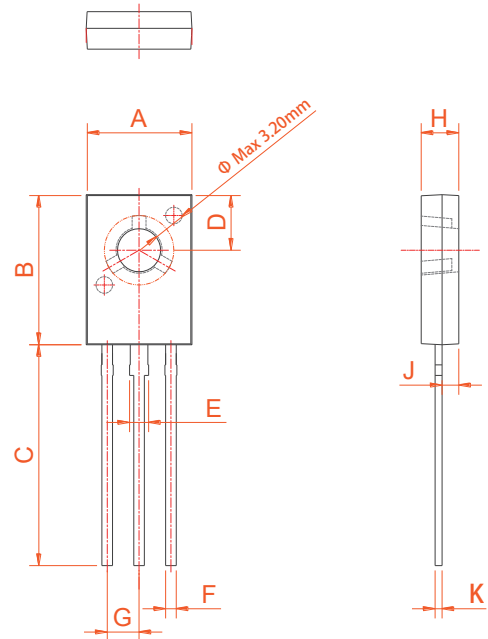
**PACKAGE MECHANICAL DATA**



**TO-252**

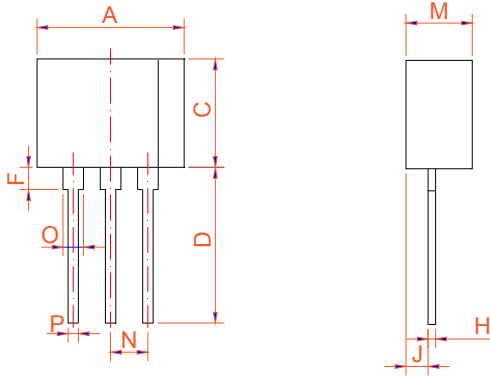
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.20		2.40	0.086		0.095
A2	0.03		0.23	0.001		0.009
B	0.55		0.65	0.022		0.026
B2	5.10		5.40	0.200		0.213
C	0.45		0.55	0.018		0.022
C2	2.70		2.90	0.106		0.114
D	6.00		6.20	0.236		0.244
E	6.40		6.70	0.252		0.264
G	4.40		4.70	0.173		0.185
H	9.35		10.6	0.368		0.417
L1	1.30		1.70	0.051		0.067
L2	1.37		1.50	0.054		0.059
L3		0.8			0.031	
L4		0.8			0.031	
V1		4°			4°	
V2	0°		8°	0°		8°

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	7.40		7.80	0.291		0.307
B	10.6		11.2	0.417		0.441
C	15.3		16.3	0.602		0.642
D	3.90		4.10	0.154		0.161
E	1.17		1.47	0.046		0.058
F	0.66		0.86	0.026		0.034
G		2.29			0.090	
H	2.50		2.90	0.098		0.114
J	1.10		1.50	0.043		0.059
K	0.45		0.60	0.018		0.024



**TO-126**

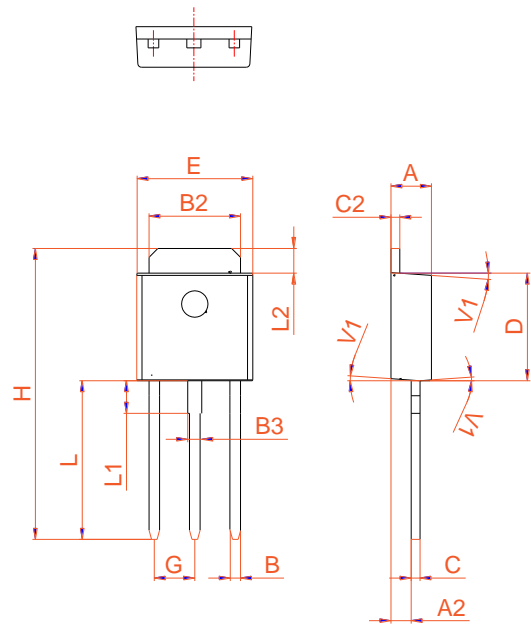
**PACKAGE MECHANICAL DATA**



TO-202-3

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.30		9.90	0.366		0.390
C	7.0		7.6	0.276		0.299
D	10.5		11.5	0.413		0.453
F	1.50		2.50	0.059		0.098
H	0.45		0.55	0.018		0.022
J	1.50		1.90	0.059		0.075
M	4.40		4.70	0.173		0.185
N		2.54			0.100	
O	1.20		1.50	0.047		0.059
P	0.60		0.80	0.024		0.031

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.20		2.40	0.086		0.095
A2	0.90		1.20	0.035		0.047
B	0.55		0.65	0.022		0.026
B2	5.10		5.40	0.200		0.213
B3	0.76		0.85	0.030		0.033
C	0.45		0.62	0.018		0.024
C2	0.48		0.62	0.019		0.024
D	6.00		6.20	0.236		0.244
E	6.40		6.70	0.252		0.264
G		2.30			0.091	
H	16.0		17.0	0.630		0.669
L	8.90		9.40	0.350		0.370
L1	1.80		1.90	0.071		0.075
L2	1.37		1.50	0.054		0.059
V1		4°			4°	



TO-251



Information furnished is believed to be accurate and reliable. However, Shenzhen HanKingyuan Electronic 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. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied.

The KY logo is a registered trademark of Shenzhen HanKingyuan Electronic.

©2013 Shenzhen HanKingyuan Electronic - Printed in Shenzhen - All Rights Reserved