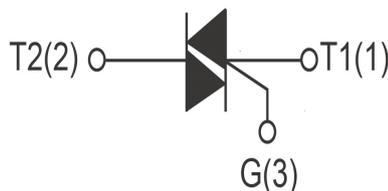


TO-3P Insulated



FEATURES

> IT(RMS):40A > VGT: 1.3V > VDRM VRRM:800V

APPLICATIONS

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

Absolute Maximum Ratings (T_j=25°C unless otherwise specified)

Symbol	Parameter	Conditions	Ratings	Unit
VDRM VRRM	Repetitive Peak Off-State Voltage		800	V
IT(RMS)	R.M.S On-State Current	T _c = 80°C	40	A
ITSM	Surge On-State Current	t _p =16.7ms/t _p =10ms	420	A
I ² t	I ² t for fusing	T _p =10ms	1000	A ² s
PG(AV)	Average Gate Power Dissipation	T _j =125°C	1	W
IGM	Peak Gate Current	T _j =125 °C	4	A
T _j	Operating Junction Temperature		~40~125	°C
TSTG	Storage Temperature		~40~150	°C

Electrical Characteristics (T_j=25°C unless otherwise specified)

Symbol	Parameter	Test Conditions	Value	Unit
IDRM	Repetitive Peak Off-State Current	T _c =25°C	5	µA
		T _c =125°C	5	mA
IRRM	Repetitive Peak Reverse Current	T _c =25°C	5	µA
		T _c =125°C	5	mA
VTM	Forward "on" voltage	I _T =60A t _p =380µs	1.5	V
VGT	Gate trigger voltage	V _D =12V, R _L =30Ω	≤1.3	V
IL	Latching current	I _G =1.2I _{GT}	100	mA
IH	Holding current	I _T =0.2A	≤ 80	mA
IGT	Gate trigger current	V _D =12V, R _L =30Ω	≤ 50	mA
VGD	Gate non-trigger voltage	V _D =V _{DRM} , T _J =150°C, R _L =3.3K Ω	0.2	V
dv/dt	Critical-rate of rise of commutation voltage	V _D =2/3V _{DRM} , T _J =125°C, gate open circuit	≥1000	V/µs
di/dt	Critical-rate of rise of commutation current	F=100Hz, I _G =2xI _{GT} , t _r ≤100ns	50	A/µs
R _d	Dynamic resistance	T _J = 125°C	9.5	mΩ

FIG1

Maximum power dissipation versus RMS on-state current

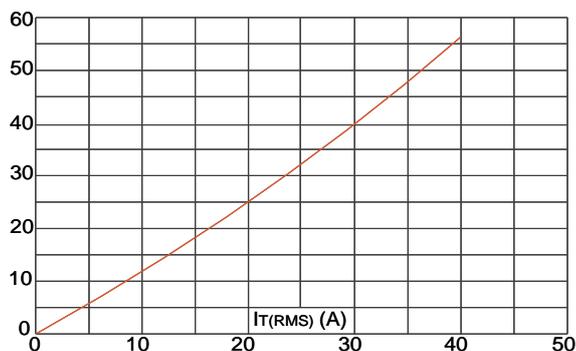


FIG2

RMS on-state current versus case temperature

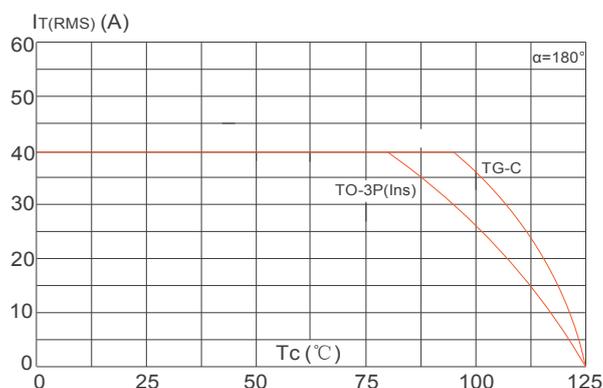


FIG3

Surge peak on-state current versus number of cycles

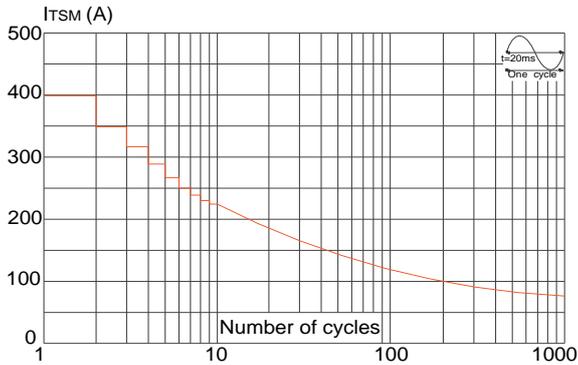


FIG4

On-state characteristics (maximum values)

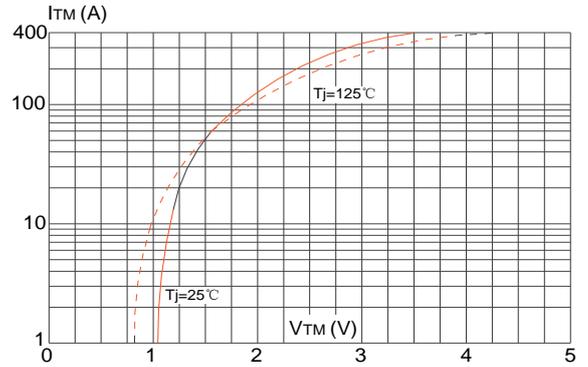


FIG5

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

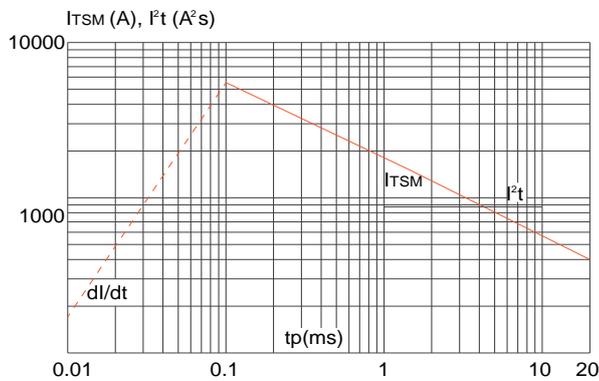
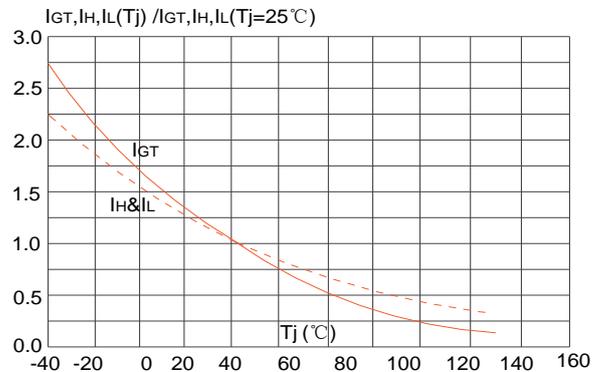
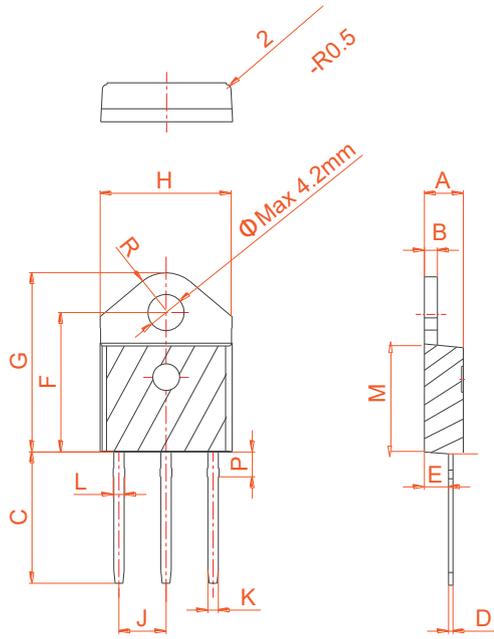


FIG6

FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



PACKAGE MECHANICAL DATA



TO-3P Ins

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	1.45		1.55	0.057		0.061
C	14.35		15.60	0.565		0.614
D	0.50		0.70	0.020		0.028
E	2.70		2.90	0.106		0.114
F	15.80		16.50	0.622		0.650
G	20.40		21.10	0.803		0.831
H	15.10		15.50	0.594		0.610
J	5.40		5.65	0.213		0.222
K	1.10		1.40	0.043		0.055
L	1.25		1.45	0.049		0.057
P	2.80		3.00	0.110		0.118
R		4.35			0.171	
M	12.37		12.77	0.487		0.503