

IT(RMS)		8A
VDRM/VRRM		600V
VTM		1.5V

FEATURES

IT(RMS): 8A

VGT: 0.8V

VDRM VRRM:600V

APPLICATIONS

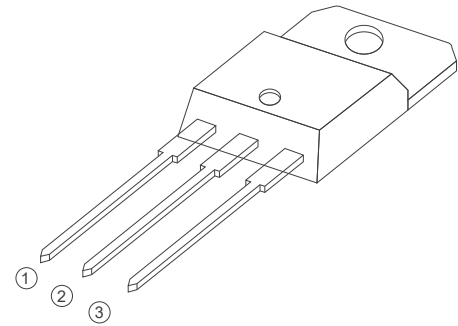
Heater Control

Motor Speed Controller

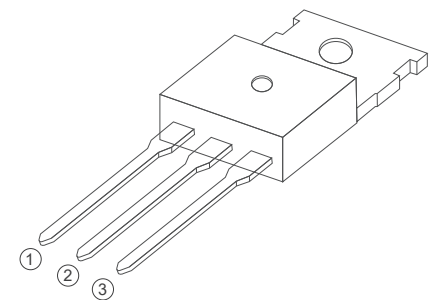
Washing machine

Vacuums

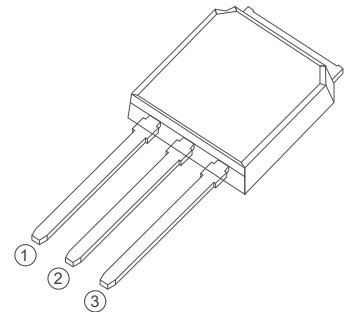
Solid state relay



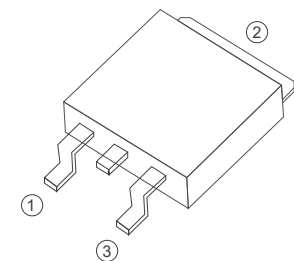
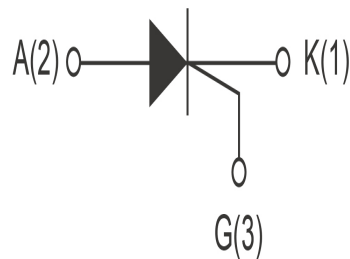
TO-220B Non-Insulated



TO-220C



TO-251



TO-252

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

Symbol	Parameter	Conditions	Ratings	Unit
VDRM VRRM	Repetitive Peak Off-State Voltage		600	V
IT(RMS)	R.M.S On-State Current		8	A
ITSM	Surge On-State Current	F=50Hz, tp=10ms	70	A
I ² t	I ² t for fusing	Tp=10ms	24.5	A ² s
IGM	Peak Gate Current	tp=20us Tj=110°C	4	A
PG(AV)	Average Gate Power Dissipation	Tj=125°C	1	W
PGM	Peak Gate Power Dissipation	Tj=125°C	5	W
Tj	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	Tc=25°C	≤5	uA
		Tc=110°C	≤500	uA
IRRM	Repetitive Peak Reverse Current	Tc=25°C	≤5	uA
		Tc=110°C	≤500	uA
VTM	Forward "on" voltage	IT=16A tp=380us	≤1.5	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
Rth(j-c)	Thermal resistance	Junction to case	2.3	°C/W

FIG1

Maximum power dissipation versus RMS on-state current

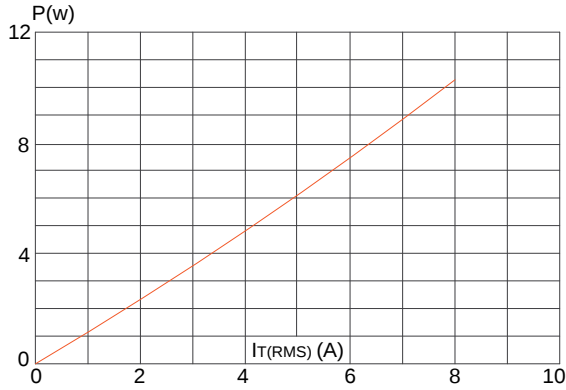


FIG2

RMS on-state current versus case temperature

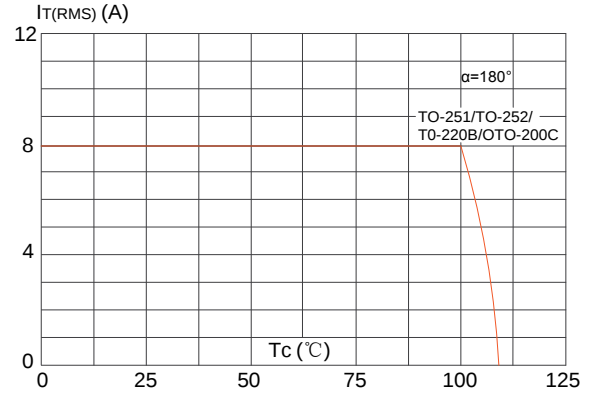


FIG3

Surge peak on-state current versus number of cycles

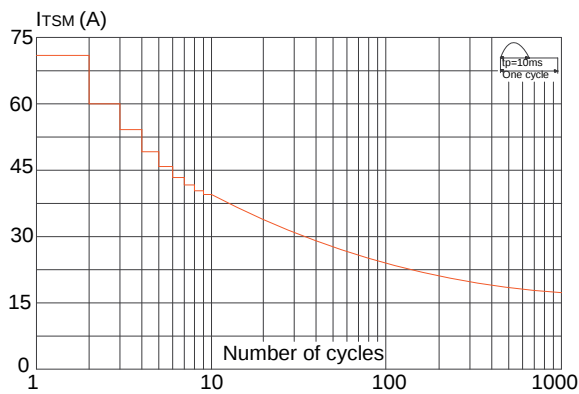


FIG4

On-state characteristics (maximum values)

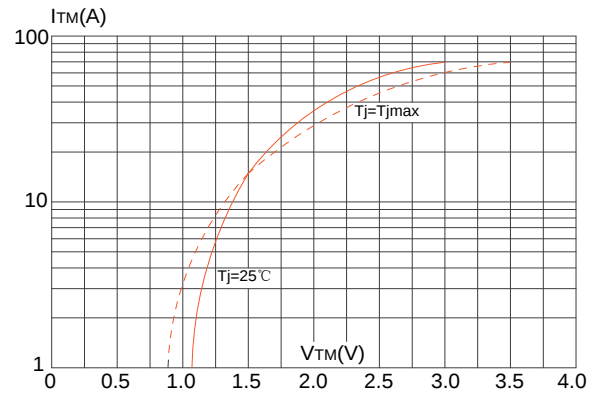


FIG5

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

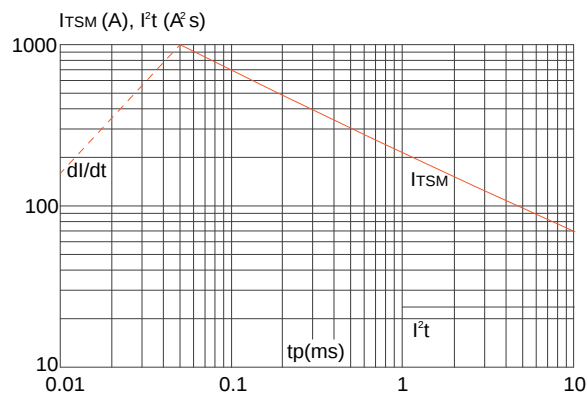
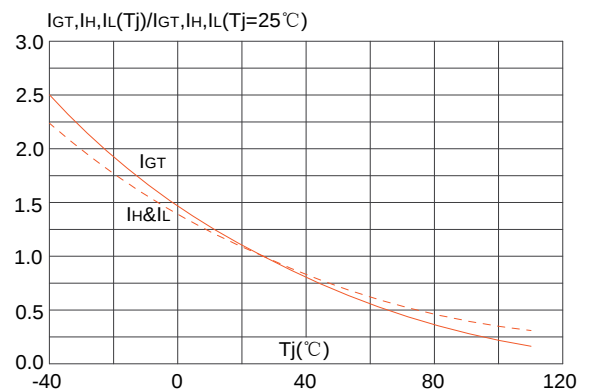
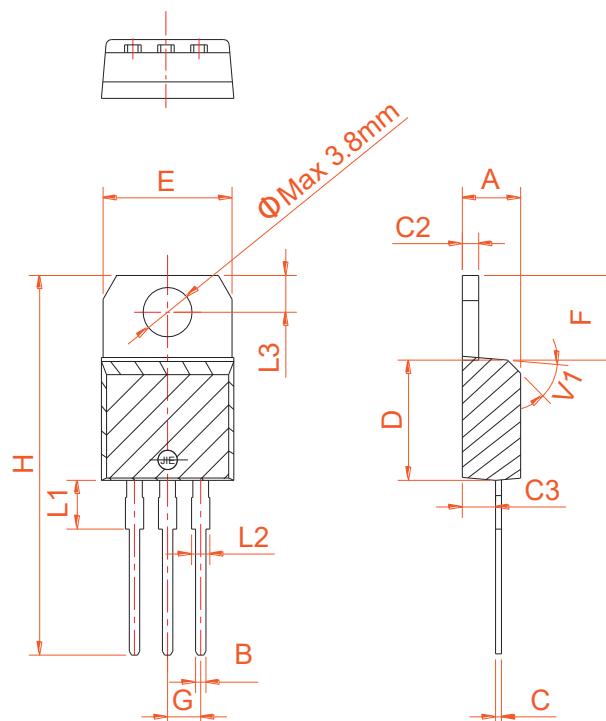


FIG6

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



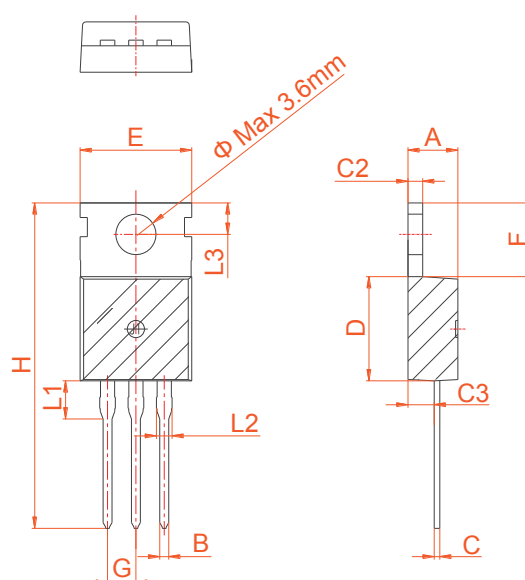
PACKAGE MECHANICAL DATA



TO-220B Non-Ins

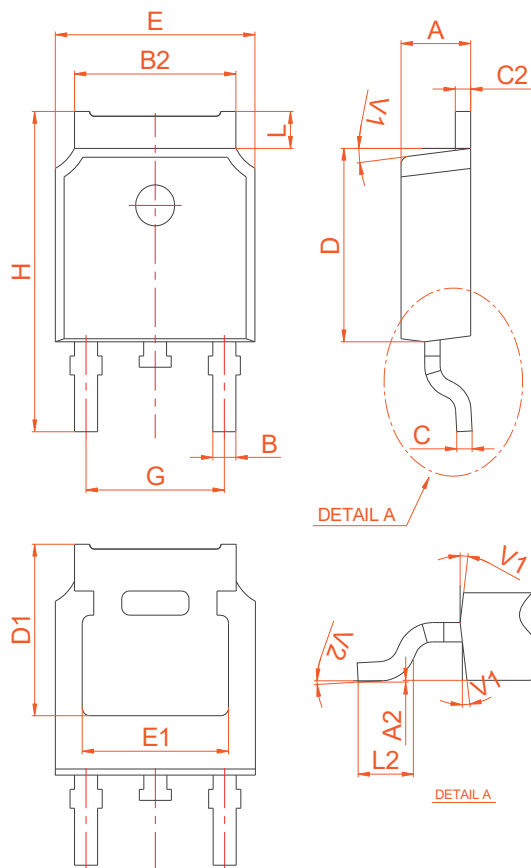
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.80		10.4	0.386		0.409
F	6.55		6.95	0.258		0.274
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.75			0.148	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
V1		45°			45°	

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.70		0.90	0.028		0.035
C	0.45		0.60	0.018		0.024
C2	1.23		1.32	0.048		0.052
C3	2.20		2.60	0.087		0.102
D	8.90		9.90	0.350		0.390
E	9.90		10.3	0.390		0.406
F	6.30		6.90	0.248		0.272
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.39			0.133	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
Φ		3.6			0.142	



TO-220C

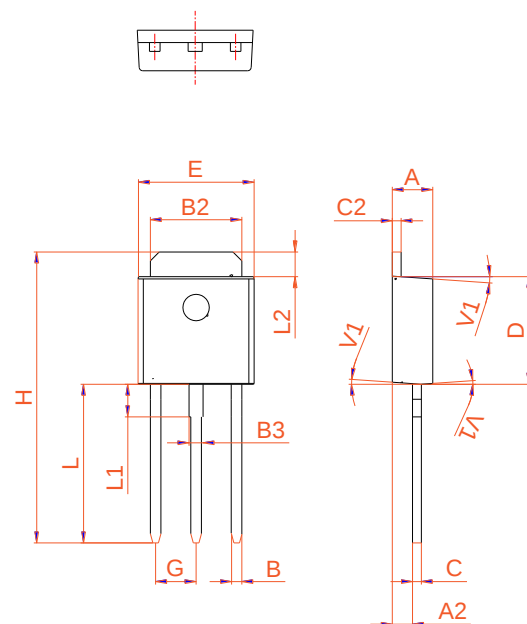
PACKAGE MECHANICAL DATA



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	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