

IT(RMS)		4A
VDRM/VRRM		600V
VTM		1.5V

FEATURES

IT(RMS): 4A

VGT: 1.3 V

VDRM VRRM: 600V~800V

High blocking voltage capability

Less sensitive gate for improved noise immunity

APPLICATIONS

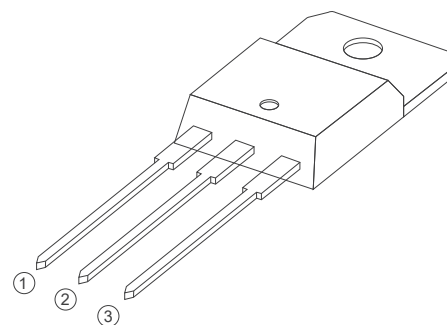
Heater Control

Motor Speed Controller

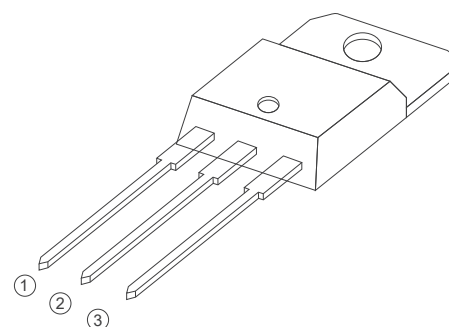
Washing machine

Vacuums

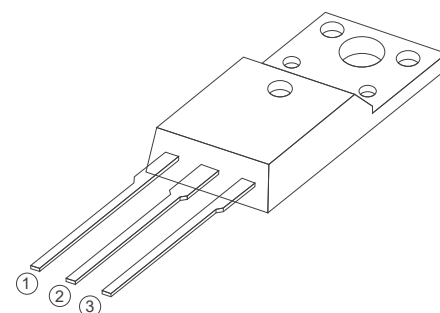
Solid state relay



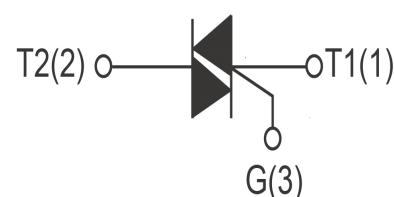
TO-220A Insulated



TO-220B Non-Insulated



TO-220F Insulated



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

Symbol	Parameter	Conditions	Ratings	Unit
VDRM VRRM	Repetitive Peak Off-State Voltage	BTA04/BTB04-600	600	V
		BTA04/BTB04-800	800	V
IT(RMS)	R.M.S On-State Current	T _c =110°C	4	A
ITSM		tp=16.7ms/tp=10ms	40/42	A
I ² t	I ² t for fusing	Tp=10ms	7.5	A ² s
PG(AV)		T _J =125°C	1	W
IGM	Peak Gate Current	tp=20us T _J =125°C	4	A
T _J			~40~125	°C
TSTG	Storage Temperature		~40~150	°C

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

Symbol	Parameter	Test Conditions	Value						Unit
			TW	SW	CW	BW	C	B	
IDRM	Repetitive Peak Off-State Current	T _J =25°C	≤10						uA
		T _J =125°C	≤1						mA
IRRM	Repetitive Peak Reverse Current	T _J =25°C	≤10						uA
		T _J =125°C	≤1						mA
VTM	Forward "on" voltage	IT=6A tp=380us	1.5						V
VGT	Gate trigger voltage	VD=12V ,RL=30Ω	≤1.3						V
di/dt	Critical-rate of rise of commutation current.	I,II,III IG=2XIGT,tr≤100ns,F=100Hz	≥50						A /us
			≥10						A /us
IGT	Gate trigger current	I,II,III VD=12V RL=30Ω	≤5	≤10	≤25	≤50	≤5	≤10	mA
			/	/	/	/	≤15	≤25	mA
IH	Holding current	IT=0.2A	≤10	≤15	≤35	≤60	≤25	≤50	mA
VGD	Gate non-trigger voltage	ALL VD=VDRM T _J =125°C,RL=3.3KΩ	≥0.2						V
dv/dt	Critical-rate of rise of commutation voltage	T _J =125°C VD=2/3VDRM Gate	≥20	≥ 40	≥200	≥500	≥ 20	≥ 50	V/us

FIG1

Maximum power dissipation versus RMS on-state current

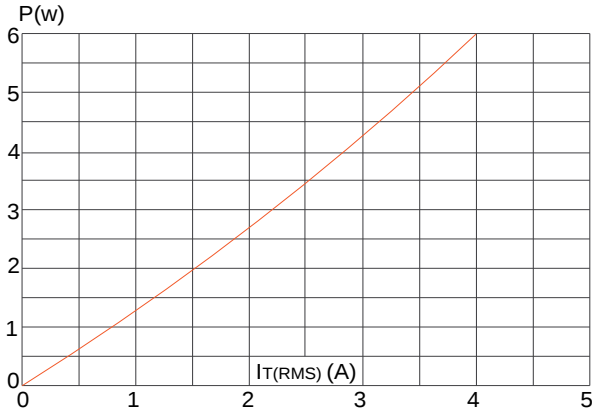


FIG2

RMS on-state current versus case temperature

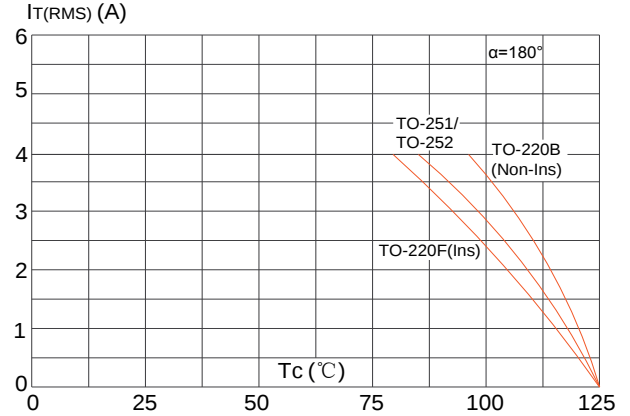


FIG3

Surge peak on-state current versus number of cycles

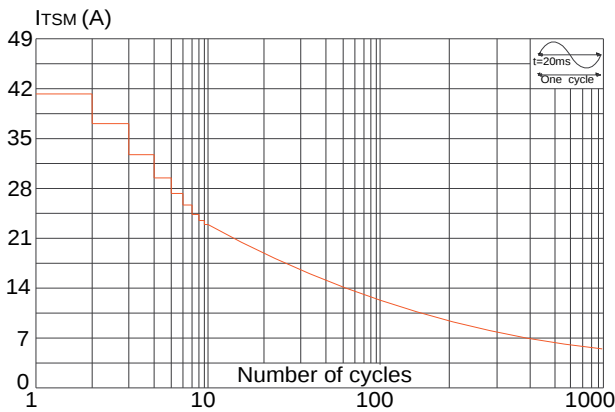


FIG4

On-state characteristics (maximum values)

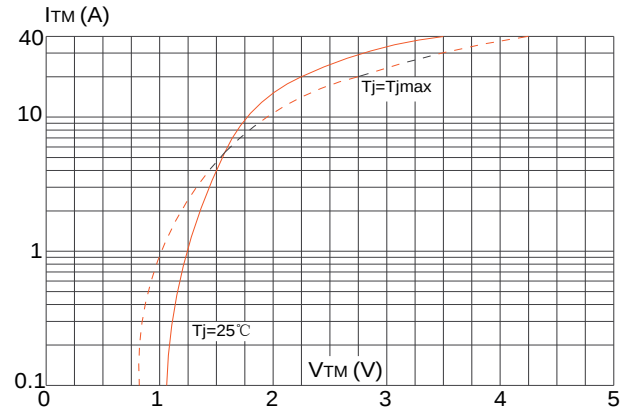


FIG5

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

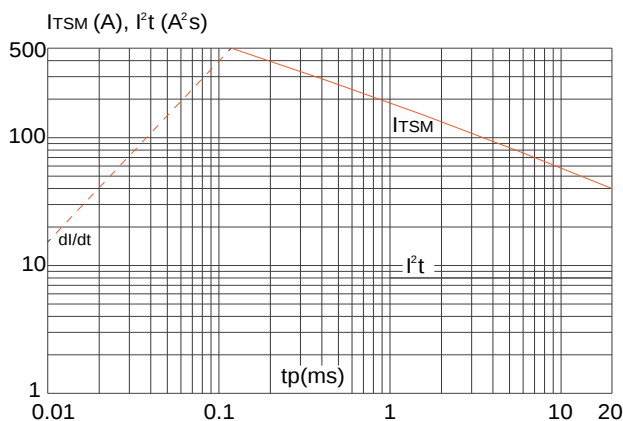
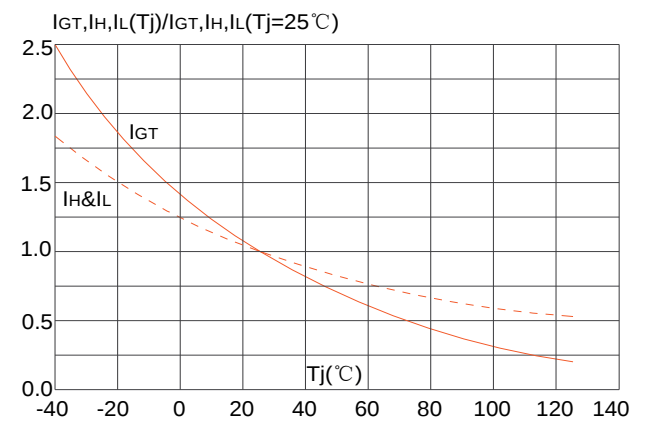
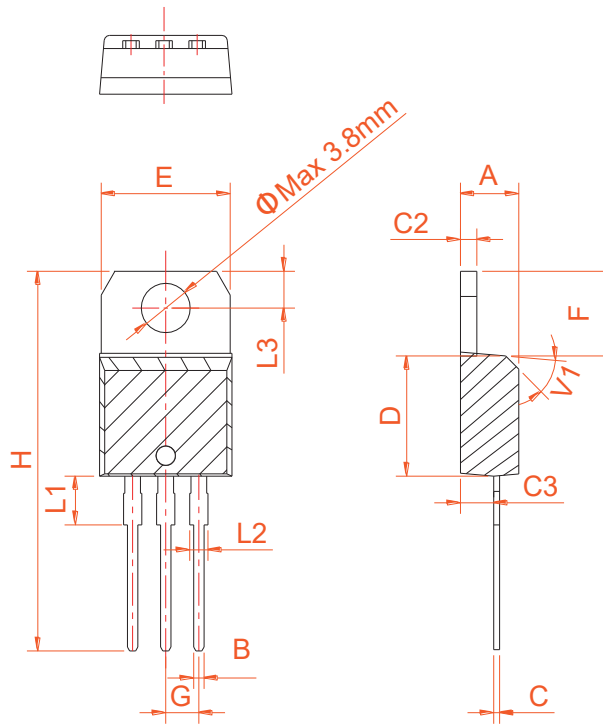


FIG6

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

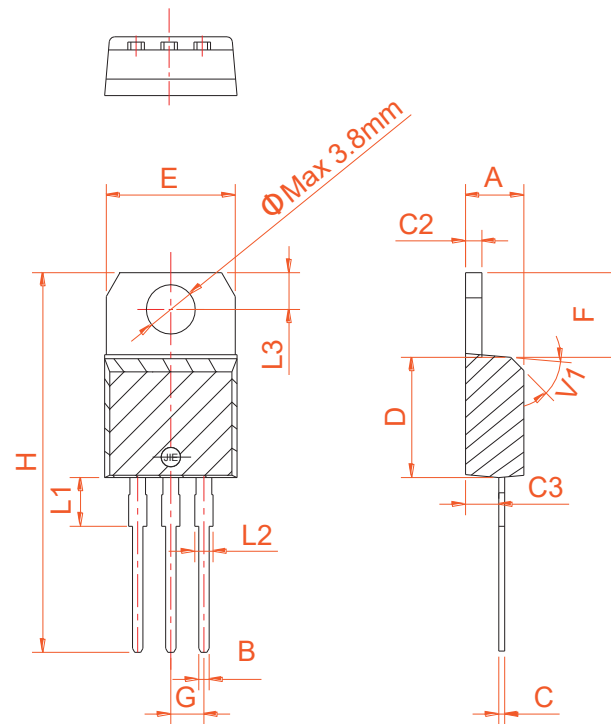


PACKAGE MECHANICAL DATA


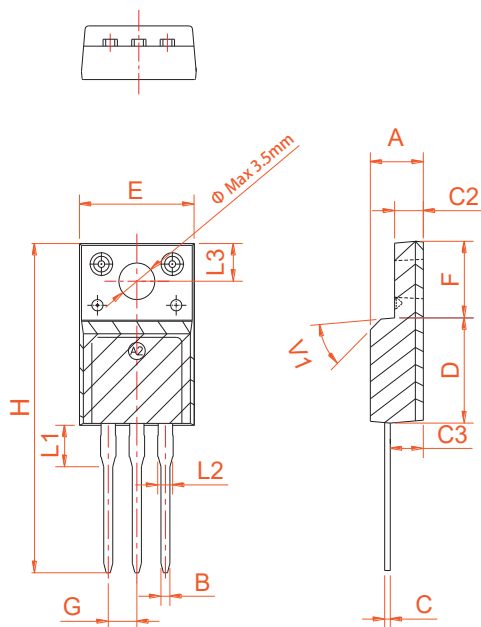
TO-220A Ins

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	9.60		10.4	0.378		0.409
F	6.20		6.60	0.244		0.260
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	0.61		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°	



TO-220B Non-Ins

PACKAGE MECHANICAL DATA


TO-220F Ins

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.50		4.90	0.177		0.193
B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.47		0.65	0.019		0.026
C2	2.45		2.75	0.096		0.108
C3	2.60		3.00	0.102		0.118
D	8.80		9.30	0.346		0.366
E	9.80		10.4	0.386		0.410
F	6.40		6.80	0.252		0.268
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.63			0.143	
L2	1.14		1.70	0.045		0.067
L3		3.30			0.130	
V1		45°			45°	