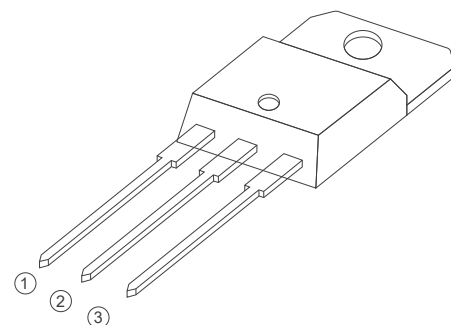


IT(RMS)		16A
VDRM/VRRM		600V
VTM		1.7V

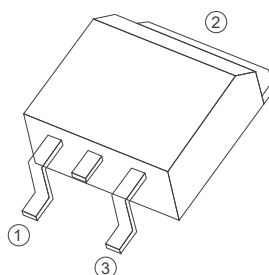
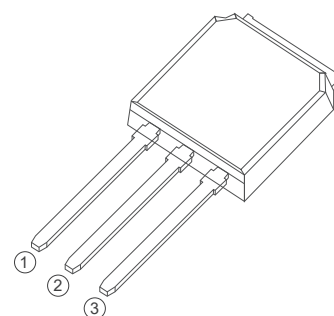

TO-220B Non-Insulated

FEATURES

IT(RMS): 16A

VG_T: 1.0V

V_{DRM} V_{RRM}:600V


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APPLICATIONS

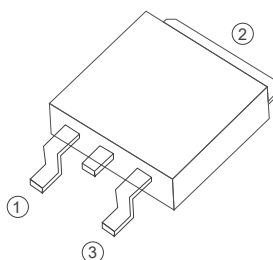
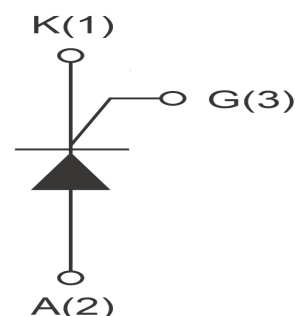
Heater Control

Motor Speed Controller

Washing machine

Vacuums

Solid state relay


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

Symbol	Parameter	Conditions	Ratings	Unit
VDRM VRRM	Repetitive Peak Off-State Voltage	TYN616	600	V
		TYN816	800	
IT(RMS)	R.M.S On-State Current		16	A
IT(AV)	average On-State Current		10	A
ITSM	Surge On-State Current	$F=50\text{Hz}, t_p=10\text{ms}$	160	A
I^2t	I^2t for fusing	$T_p=10\text{ms}$	100	A^2s
PG(AV)	Average Gate Power Dissipation	$T_j=125^{\circ}\text{C}$	1	W
PGM	Peak Gate Power Dissipation	$T_j=125^{\circ}\text{C}$	4	W
T_j	Operating Junction Temperature		$\sim 40\sim 125$	$^{\circ}\text{C}$
TSTG	Storage Temperature		$\sim 40\sim 150$	$^{\circ}\text{C}$

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

Symbol	Parameter	Test Conditions	Value	Unit
IDRM	Repetitive Peak Off-State Current	$T_c=25^{\circ}\text{C}$	≤ 10	μA
		$T_c=125^{\circ}\text{C}$	≤ 1	mA
IRRM	Repetitive Peak Reverse Current	$T_c=25^{\circ}\text{C}$	≤ 10	μA
		$T_c=125^{\circ}\text{C}$	≤ 1	mA
VTM	Forward "on" voltage	$I_T=24\text{A}, t_p=380\mu\text{s}$	≤ 1.7	V
VGD	Gate nontrigger voltage	$V_D=V_{\text{DRM}}, T_j=125^{\circ}\text{C}, R_L=3.3\text{K}\Omega$	≥ 0.25	V
IL	Latching current	$I_G=1.2I_{\text{GT}}$	≤ 50	mA
IH	Holding current	$V_D=12\text{V}, I_{\text{GT}}=0.1\text{A}$	≤ 40	mA
VGT	Gate trigger voltage	$V_D=12\text{V}, I_{\text{GT}}=0.1\text{A}$	≤ 1.0	V
IGT	Gate trigger current	$V_D=12\text{V}, I_T=0.1\text{A}$	≤ 20	mA
dv/dt	Critical-rate of rise of commutation voltage	$V_D=2/3V_{\text{DRM}}, T_j=110^{\circ}\text{C}, R_{\text{GK}}=1\text{K}\Omega$	≥ 400	V/ μs
di/dt	Critical-rate of rise of commutation current	$I_G=2X I_{\text{GT}}, t_r \leq 100\mu\text{s}, T_j=125^{\circ}\text{C}$	≥ 50	A/ μs

FIG1

Maximum power dissipation versus RMS on-state current

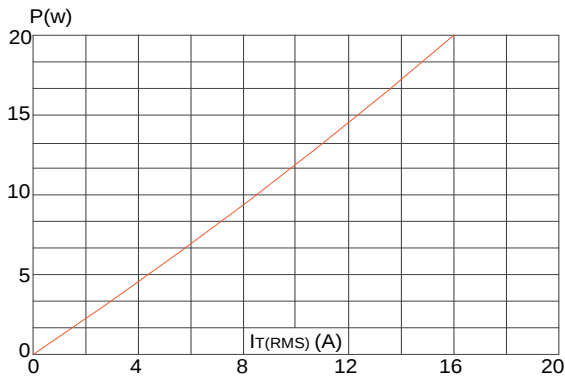


FIG2

RMS on-state current versus case temperature

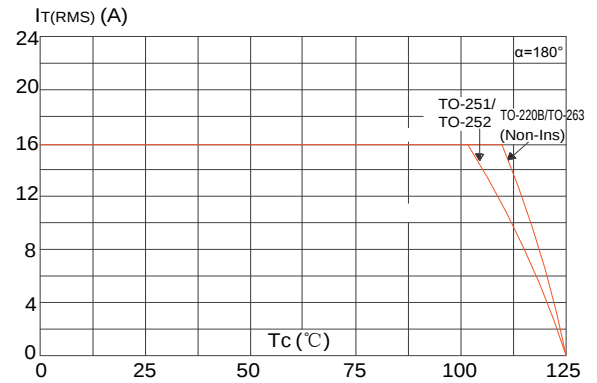


FIG3

Surge peak on-state current versus number of cycles

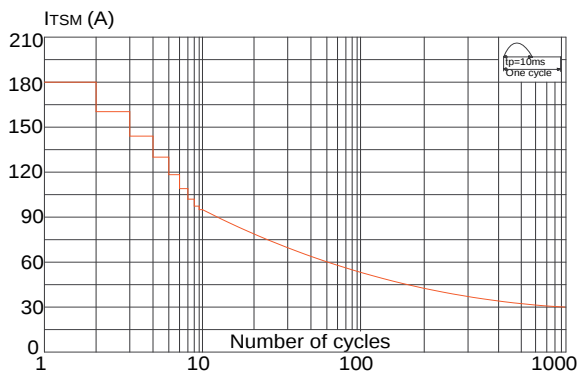


FIG4

On-state characteristics (maximum values)

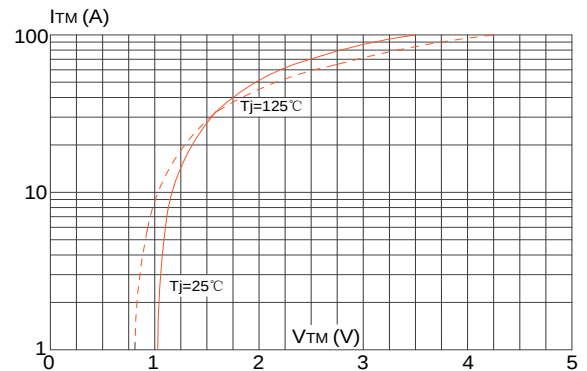


FIG5

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

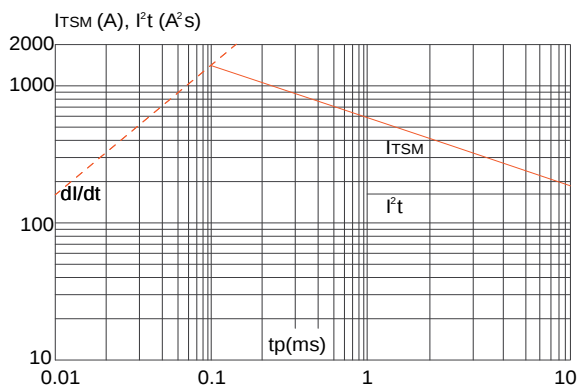
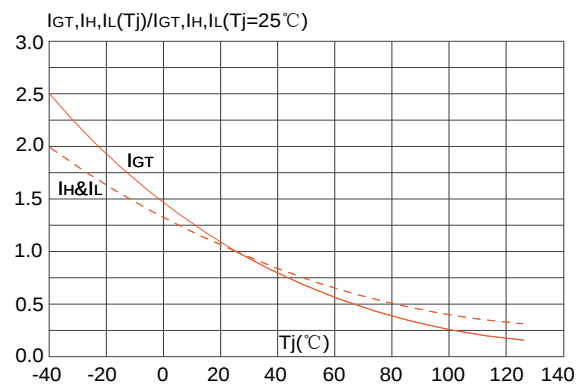
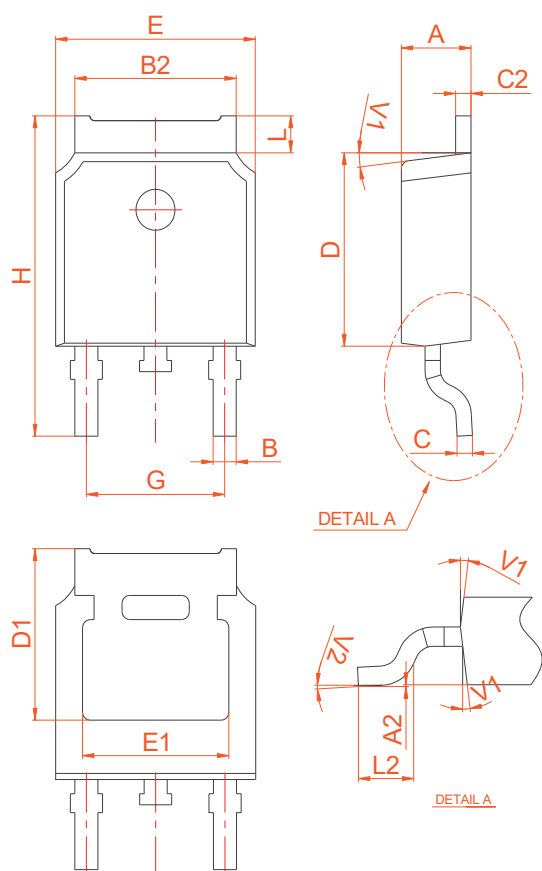


FIG6

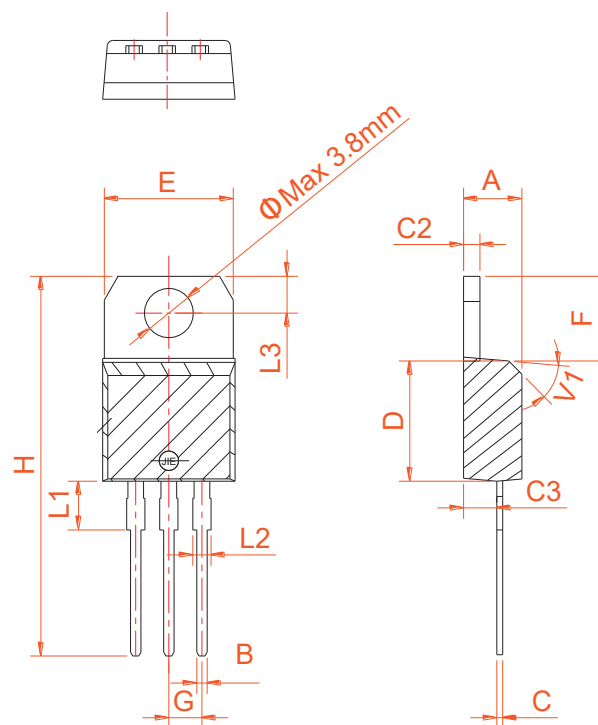
FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



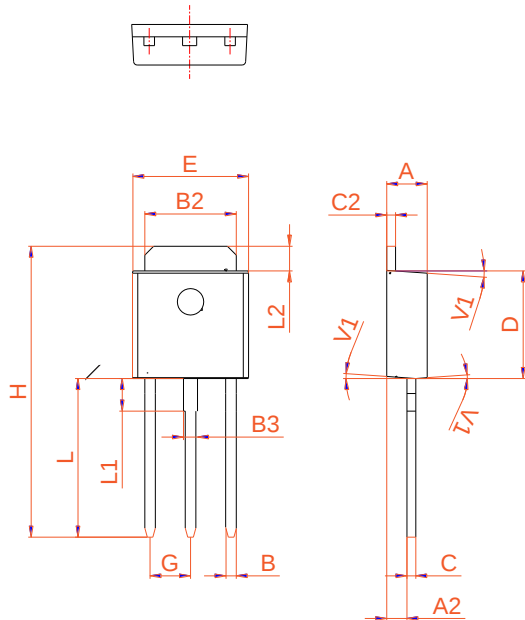
PACKAGE MECHANICAL DATA

TO-252

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	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	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°


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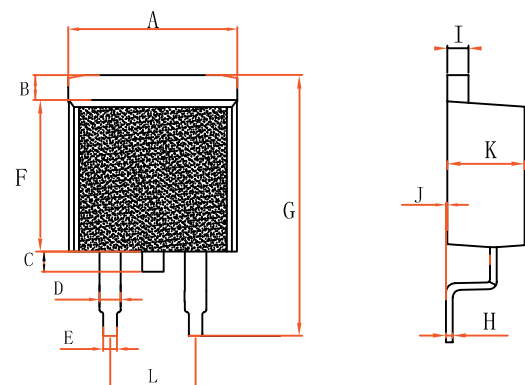
PACKAGE MECHANICAL DATA



TO-251

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°	

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.7		10.4	0.381		0.409
B	1.31		1.62	0.051		0.063
C	0.65		1.22	0.025		0.048
D	1.15		1.36	0.045		0.053
E	0.62		0.95	0.024		0.037
F	8.75		9.32	0.344		0.366
G	14.75		15.8	0.58		0.622
H	0.32		0.48	0.012		0.018
I	1.18		1.36	0.046		0.053
J	0		0.15	0		0.005
K	4.38		4.86	0.172		0.191
L	4.85		5.23	0.19		0.205



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