

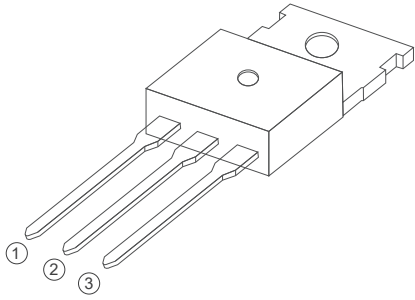
BT136 Series

4A TRIACs

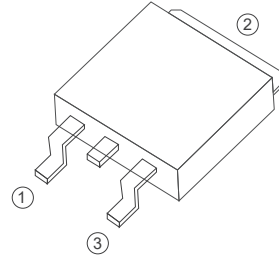
4 Quadrants TRIACs



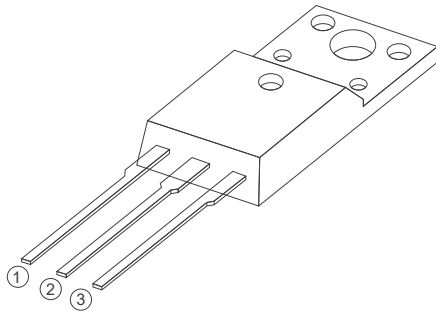
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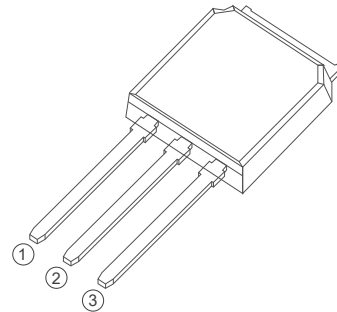
TO-220C



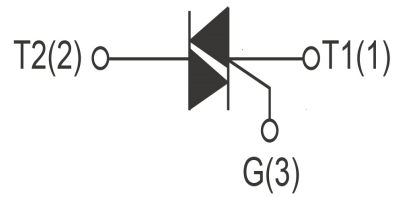
TO-252



TO-220F Insulated



TO-251



FEATURES

> $I_T(RMS)$: 4A > V_{GT} : 1.5V > V_{DRM} V_{RRM} : 600V and 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	BT136-600	600	V
		BT136-800	800	
IT(RMS)	R.M.S On-State Current	T _c =110°C	4	A
ITSM	Surge On-State Current	tp=16.7ms/tp=10ms	25/27	A
I _t	I _t for fusing	Tp=10ms	3.1	A ² s
PG(AV)	Average Gate Power Dissipation	T _J =125°C	1	W
IGM	Peak Gate Current	tp=20us T _J =125°C	2	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	
			D	E	F	G		
IDRM	Repetitive Peak Off-State Current	T _J =25°C	≤10				uA	
		T _J =125°C	≤0.5				mA	
IRRM	Repetitive Peak Reverse Current	T _J =25°C	≤10				uA	
		T _J =125°C	≤0.5				mA	
V _{TM}	Forward "on" voltage	I _T =5A tp=380us	≤1.7				V	
V _{GD}	gate non-trigger voltage	V _D =12V, T _J =125°C	≥0.2				V	
I _H	Holding current	I _T =100mA	≤10	≤25	≤30	≤60	mA	
V _{GT}	Gate trigger voltage	V _D =12V	≤1.5				V	
IGT	Gate trigger current	V _D =12V, I _{GT} =0.1A	I, II, III	5	10	25	50	mA
			IV	10	25	70	100	mA
di/dt	Critical-rate of rise of commutation current.	I _T =6A, I _{GT} =0.2A, dI _G /dt=0.2A/us	≥50				A /us	
			≥10				A /us	
dv/dt	Critical-rate of rise of commutation voltage	T _J =125°C V _D =2/3V _{DRM} Gate	5	10	50	200	V/us	

FIG1

Maximum power dissipation versus RMS on-state current

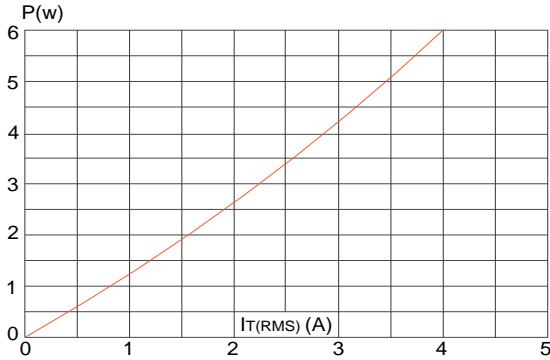


FIG2

RMS on-state current versus case temperature

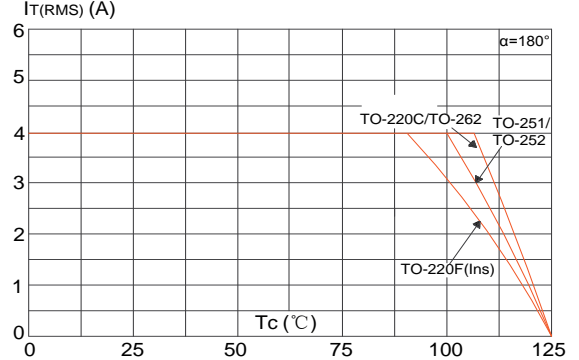


FIG3

Surge peak on-state current versus number of cycles

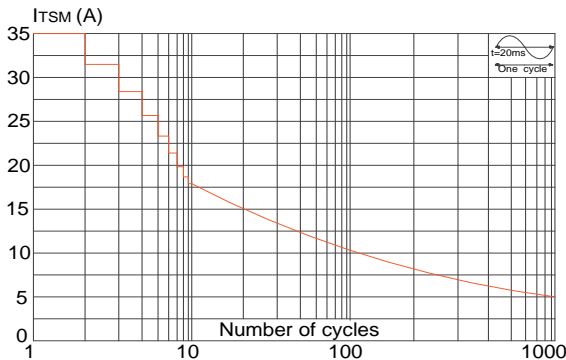


FIG4

On-state characteristics (maximum values)

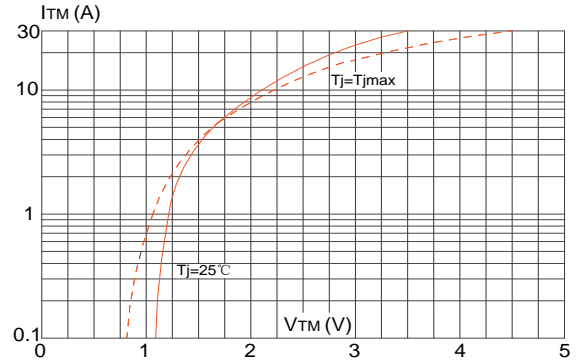


FIG5

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

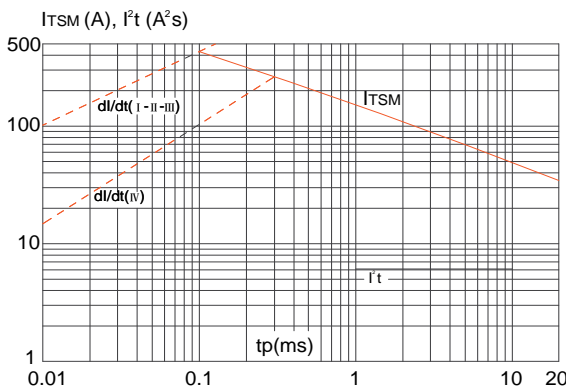


FIG6

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

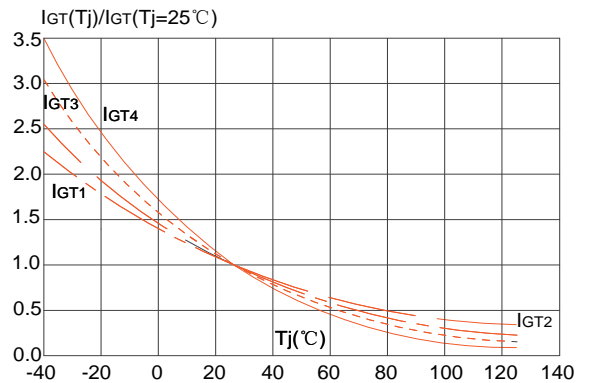


FIG7

FIG.7: Relative variations of holding current versus junction temperature

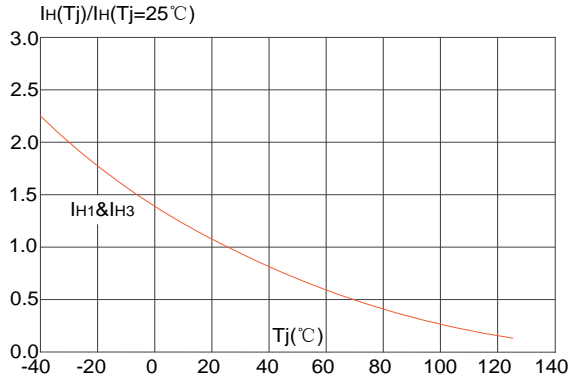
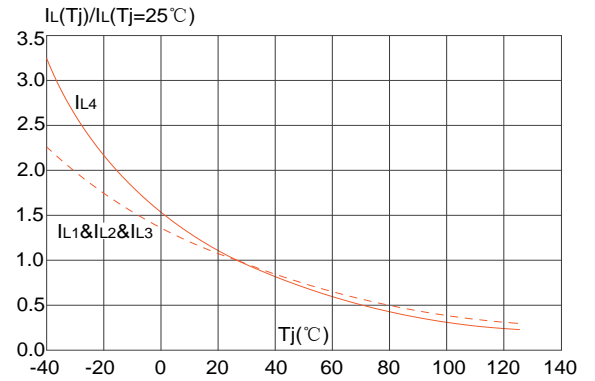
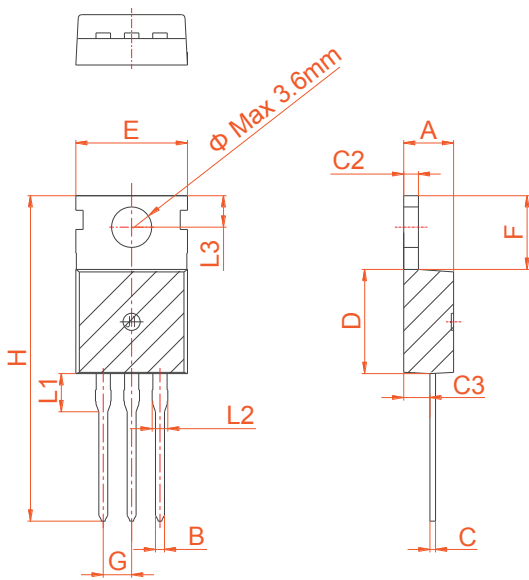


FIG8

FIG.8: Relative variations of latching current versus junction temperature



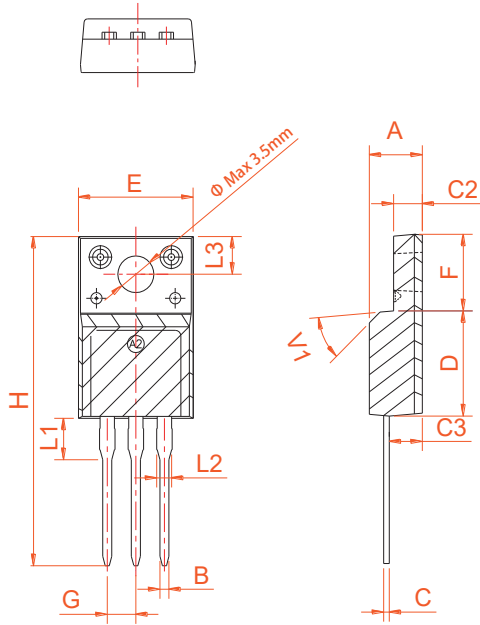
PACKAGE MECHANICAL DATA



TO-220C

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	

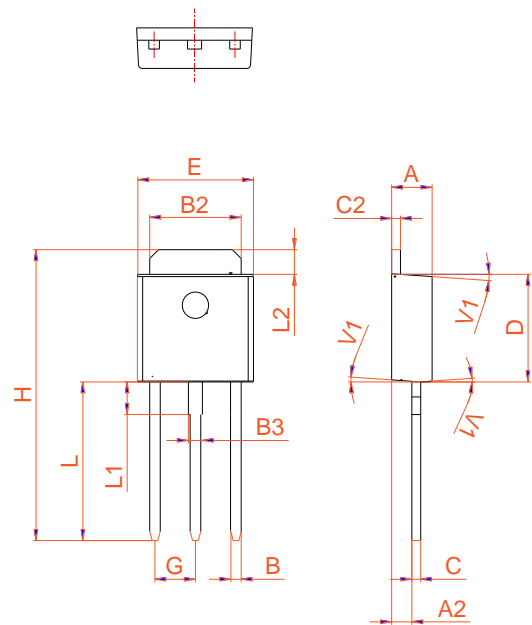
PACKAGE MECHANICAL DATA



TO-220F Ins

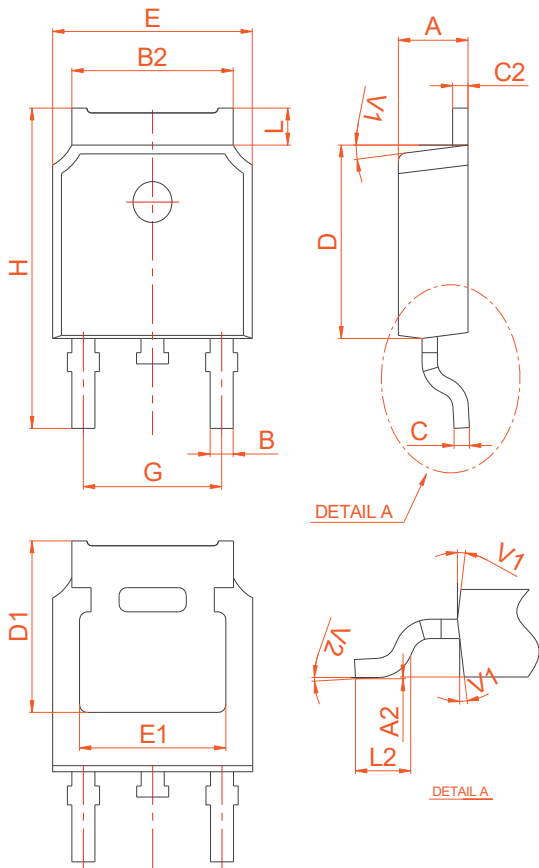
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.50		4.90	0.177		0.193
B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.47		0.65	0.019		0.026
C2	2.45		2.75	0.096		0.108
C3	2.60		3.00	0.102		0.118
D	8.80		9.30	0.346		0.366
E	9.80		10.4	0.386		0.410
F	6.40		6.80	0.252		0.268
G		2.54			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°	

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

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°

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