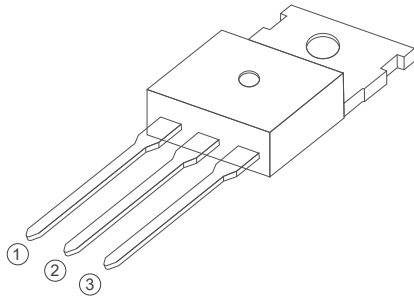
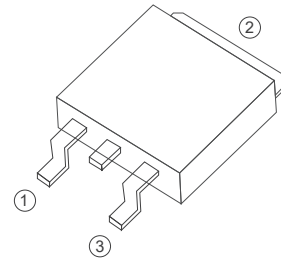


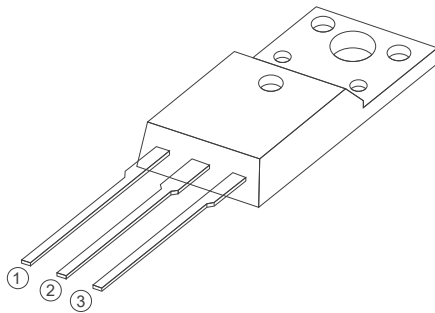
BT137 Series  
8A TRIACs  
4 Quadrants TRIACs



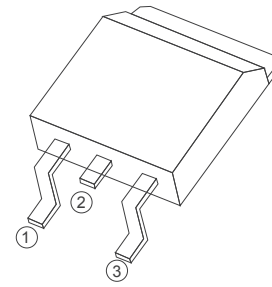
TO-220C



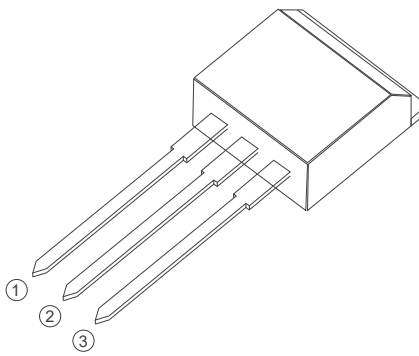
TO-252



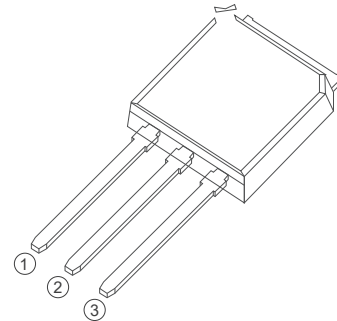
TO-220F Insulated



TO-263



TO-262



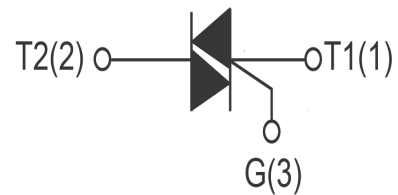
TO-251

## FEATURES

> IT(RMS): 8A    > VGT: 1.5V    > VDRM VRRM:800V

## APPLICATIONS

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



**Absolute Maximum Ratings** (T<sub>J</sub>=25°C unless otherwise specified)

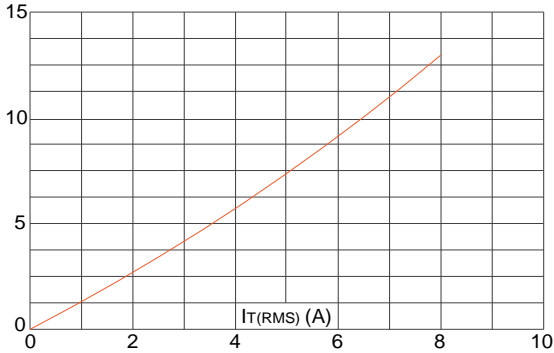
Symbol	Parameter	Conditions	Ratings	Unit
VDRM VRRM	Repetitive Peak Off-State Voltage	BT137-600	600	V
		BT137-800	800	V
IT(RMS)	R.M.S On-State Current	T <sub>c</sub> =110°C	8	A
ITSM	Surge On-State Current	t <sub>p</sub> =16.7ms/t <sub>p</sub> =10ms	80/84	A
I <sup>2</sup> t	I <sup>2</sup> t for fusing	T <sub>p</sub> =10ms	30	A <sup>2</sup> s
PG(AV)	Average Gate Power Dissipation	T <sub>J</sub> =125°C	1	W
IGM	Peak Gate Current	T <sub>J</sub> =125°C	4	A
T <sub>J</sub>	Operating Junction Temperature		~40~125	°C
TSTG	Storage Temperature		~40~150	°C

**Electrical Characteristics** (T<sub>J</sub>=25°C unless otherwise specified)

Symbol	Parameter	Test Conditions	Value				Unit
			D	E	F	G	
IDRM	Repetitive Peak Off-State Current	T <sub>J</sub> =25°C	≤5				uA
		T <sub>J</sub> =125°C	≤1				mA
IRRM	Repetitive Peak Reverse Current	T <sub>J</sub> =25°C	≤5				uA
		T <sub>J</sub> =125°C	≤1				mA
VTM	Forward "on" voltage	IT=12A t <sub>p</sub> =380us	≤1.55				V
VGT	Gate trigger voltage	VD=12V ,RL=30Ω	≤1.3				V
di/dt	Critical-rate of rise of commutation current.	VD=12V IGT==0.1A	≥50				A /us
			≥10				A /us
IGT	Gate trigger current	VD=12V RL=30Ω	≤5	≤10	≤25	≤50	mA
			≤10	≤25	≤70	≤100	mA
IH	Holding current	IT=0.2A	≤10	≤25	≤30	≤60	mA
VGD	Gate non-trigger voltage	ALL VD=VDRM T <sub>J</sub> =125°C,RL=3.3KΩ	≥0.2				V
dv/dt	Critical-rate of rise of commutation voltage	T <sub>J</sub> =125°C VD=2/3VDRM Gate	≥5	≥10	≥50	≥200	V/us

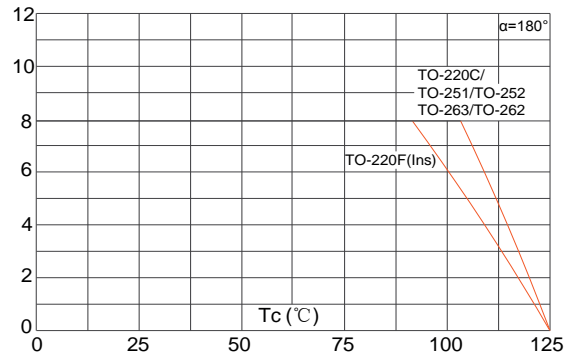
**FIG1**

Maximum power dissipation versus RMS on-state current



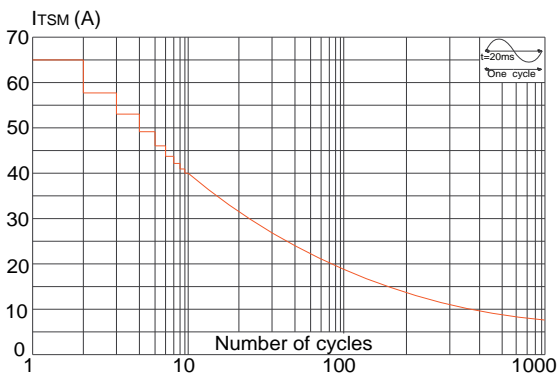
**FIG2**

RMS on-state current versus case temperature



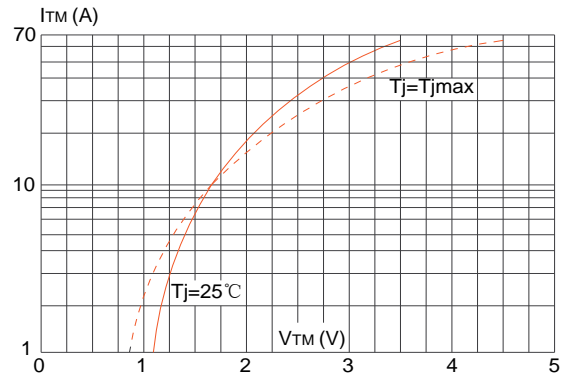
**FIG3**

Surge peak on-state current versus number of cycles



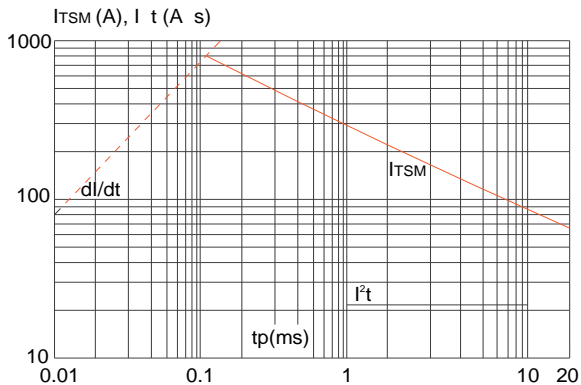
**FIG4**

On-state characteristics (maximum values)



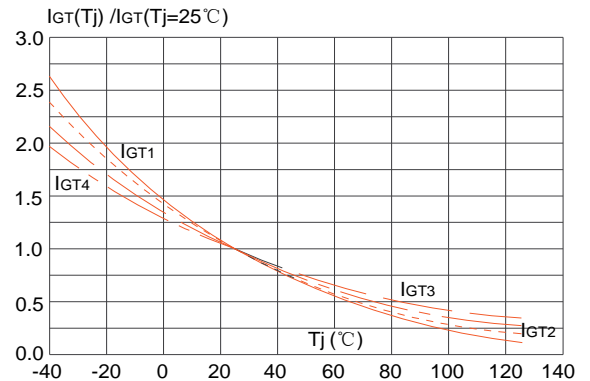
**FIG5**

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



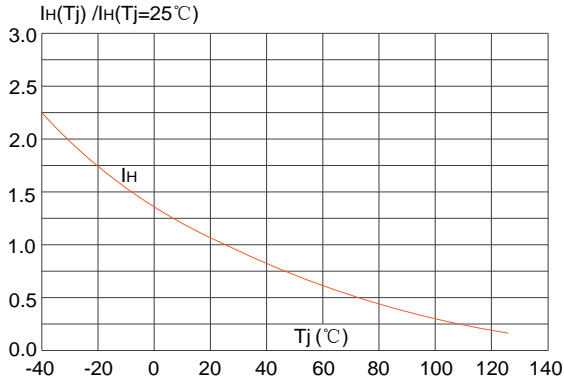
**FIG6**

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



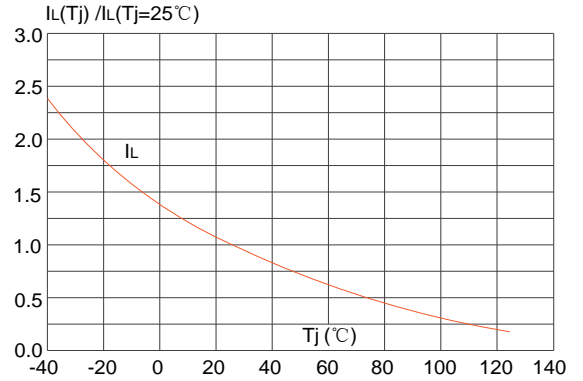
**FIG7**

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

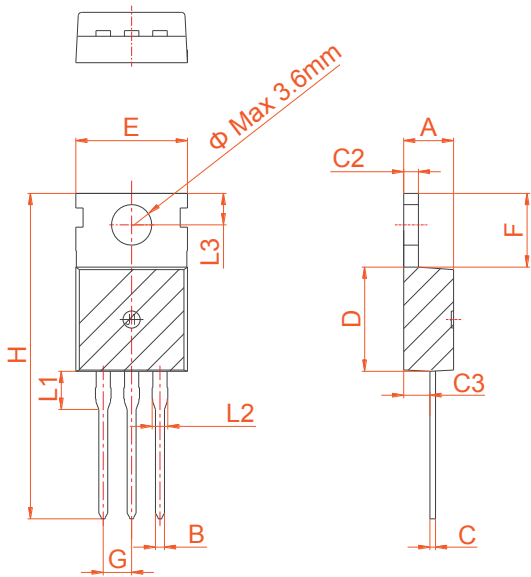


**FIG8**

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



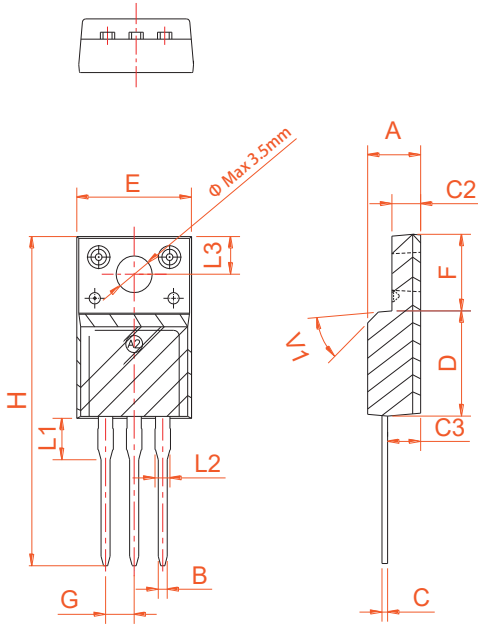
**PACKAGE MECHANICAL DATA**



**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	

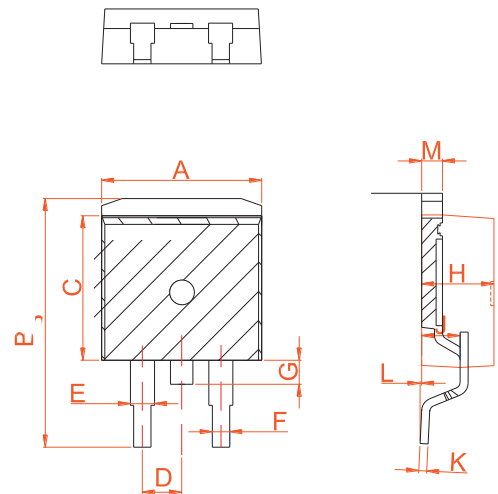
**PACKAGE MECHANICAL DATA**



TO-220F Ins

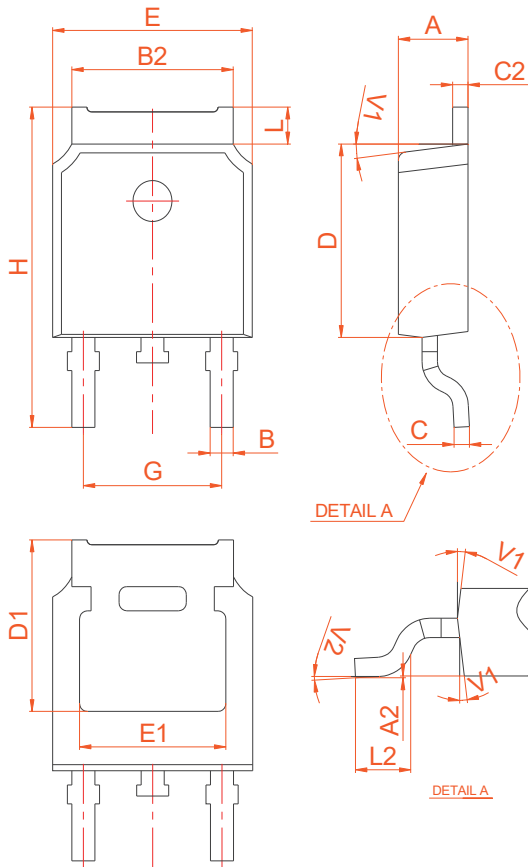
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.50		4.90	0.177		0.193
B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.47		0.65	0.019		0.026
C2	2.45		2.75	0.096		0.108
C3	2.60		3.00	0.102		0.118
D	8.80		9.30	0.346		0.366
E	9.80		10.4	0.386		0.410
F	6.40		6.80	0.252		0.268
G		2.54			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	9.90		10.20	0.390		0.402
B	14.70		15.80	0.579		0.622
C	9.4		9.6	0.37		0.378
D		2.54			0.100	
E	1.20		1.40	0.047		0.055
F	0.75		0.85	0.029		0.033
G			1.75			0.069
H	4.40		4.70	0.173		0.185
J	2.30		2.70	0.091		0.106
K	0.38		0.55	0.015		0.022
L	0	0.10	0.25	0	0.004	0.010
M	1.25		1.35	0.049		0.053



TO-263

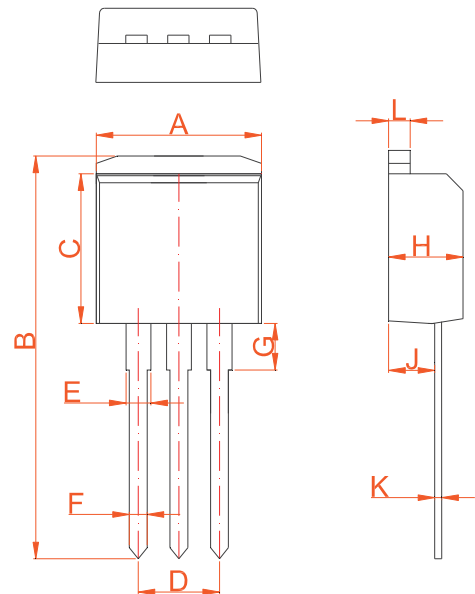
**PACKAGE MECHANICAL DATA**



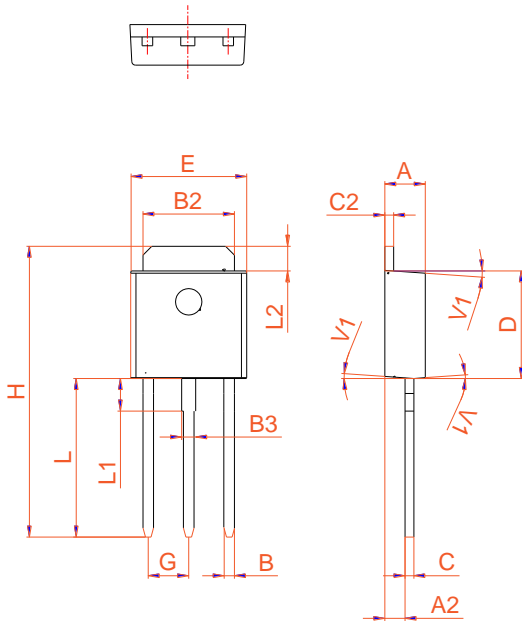
**TO-252**

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	9.95		10.20	0.392		0.402
B	23.25		23.45	0.915		0.923
C	8.90		9.10	0.35		0.358
D	2.50		2.60	0.098		0.102
E	1.20		1.35	0.047		0.053
F	0.80		0.85	0.031		0.033
G	3.30		3.60	0.130		0.142
H	4.45		4.55	0.175		0.179
J	2.50		2.70	0.098		0.106
K	0.38		0.42	0.015		0.017
L	1.25		1.29	0.049		0.051



**TO-262**



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°	

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