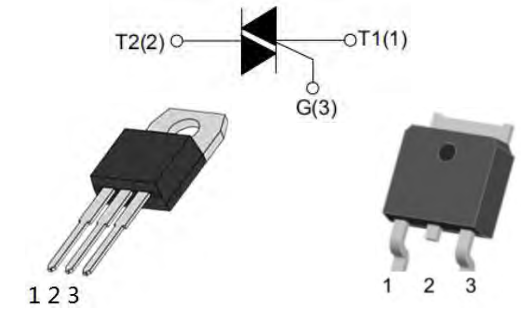
BT137 Series 8A Triacs

RoHS COMPLIANT

DESCRIPTION:

With low holding and latching current, BT137 Series triacs are especially recommended for use on middle and small resistance type power load.



TO-220

TO-252

TO-220F（Ins）

TO-263

MAIN FEATURES:

symbol	value	unit
$I_{T(RMS)}$	8	A
V_{DRM}/V_{RRM}	600/800	V
V_{TM}	≤1.6	V

ABSOLUTE MAXIMUM RATINGS:

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40~150	℃
Operating junction temperature range	T_j	-40~125	℃
Repetitive peak off-state voltage (T_j=25℃)	V_{DRM}	600/800	V
Repetitive peak reverse voltage (T_j=25℃)	V_{RRM}	600/800	V
RMS on-state current	$I_{T(RMS)}$	8	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	65	A
I^2t value for fusing (t_p=10ms)	I^2t	21	A^2s

Critical rate of rise of on-state current (I_G=2×I_{GT})	dI/dt	Ⅰ-Ⅱ-Ⅲ	50	A/μs
		Ⅳ	10	
Peak gate current		I_{GM}	2	A
Average gate power dissipation		$P_{G(AV)}$	0.5	W
Peak gate power		P_{GM}	5	W

ELECTRICAL CHARACTERISTICS (T_j=25℃ unless otherwise specified)

Parameter	Test Condition	Quadrant		Value				Unit
				D	E	F	G	
I_{GT}	V_D=12V, R_L=33Ω	Ⅰ－Ⅱ－Ⅲ	MAX	5	10	25	50	mA
		Ⅳ		10	25	70	100	
V_{GT}		Ⅰ－Ⅱ－Ⅲ－Ⅳ		1.3				V
V_{GD}	V_D=V_{DRM}	Ⅰ－Ⅱ－Ⅲ－Ⅳ	MIN	0.2				V
I_H	I_T=100mA		MAX	10	20	40	60	mA
I_L	I_G=1.2I_{GT}	Ⅰ－Ⅲ－Ⅳ	MAX	10	30	50	70	mA
		Ⅱ		20	40	70	100	
dV/dt	V_D=0.66×V_{DRM} T_j=125℃ Gate open		MIN	20	50	100	200	V/μs

STATIC CHARACTERISTICS

Symbol	Test Condition			Value	Unit
V_{TM}	I_{TM}=10A t_p=380μs	T_j=25℃	MAX	1.6	V
I_{DRM} I_{RRM}	V_{DRM}= V_{RRM}	T_j=25℃	MAX	5	μA
		T_j=125℃		0.5	mA

THERMAL RESISTANCES

Symbol	Test Condition		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-252	2.0	℃/W
		TO-220AB	1.8	
		TO-220F	2.8	
		TO-263	3.0	

ORDERING INFORMATION

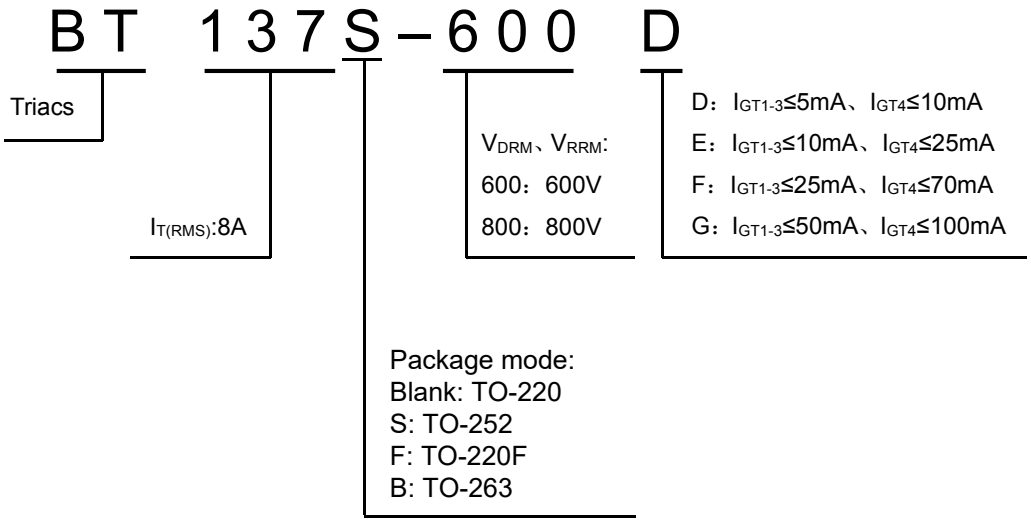


FIG.1: Maximum power dissipation versus RMS on-state current

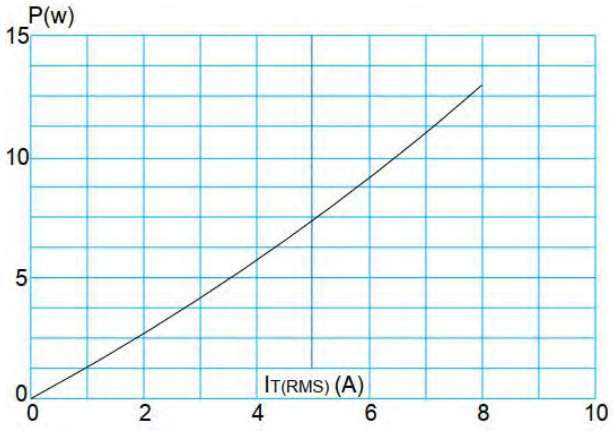


FIG.2: RMS on-state current versus case temperature

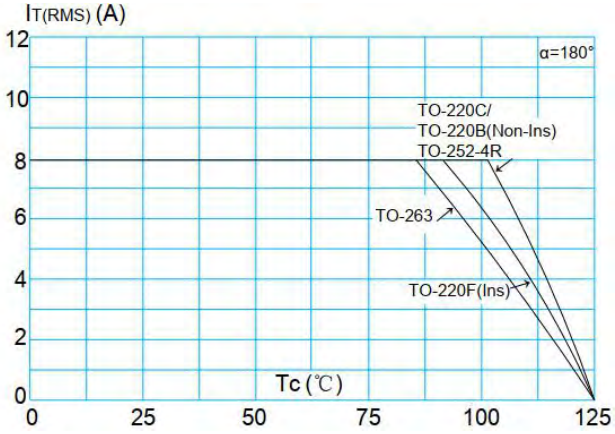


FIG.3: Surge peak on-state current versus number of cycles

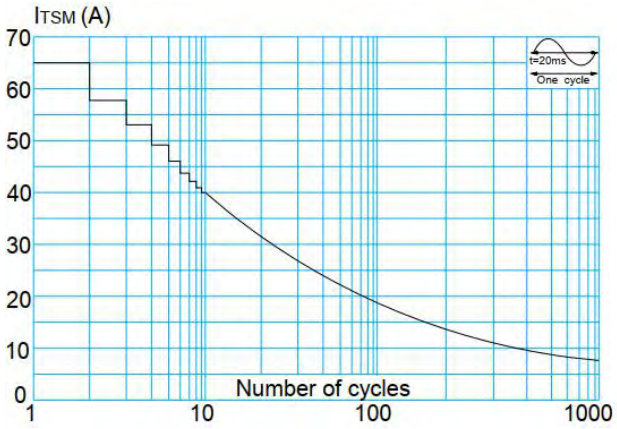


FIG.4: On-state characteristics (maximum values)

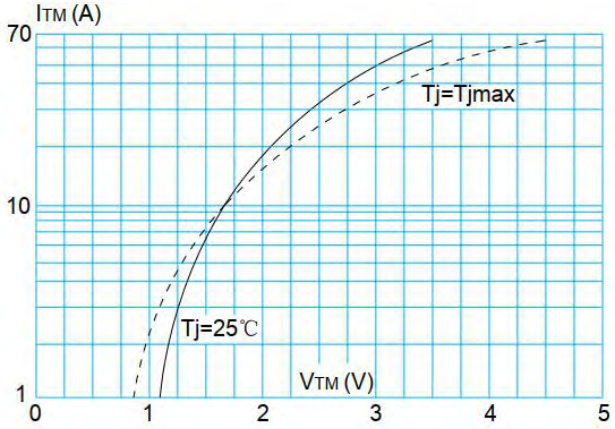


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<20ms, and corresponging value of I^2t (Ⅰ-Ⅱ-Ⅲ:dI/dt < 50A/μs;Ⅳ:dI/dt < 10A/μs)

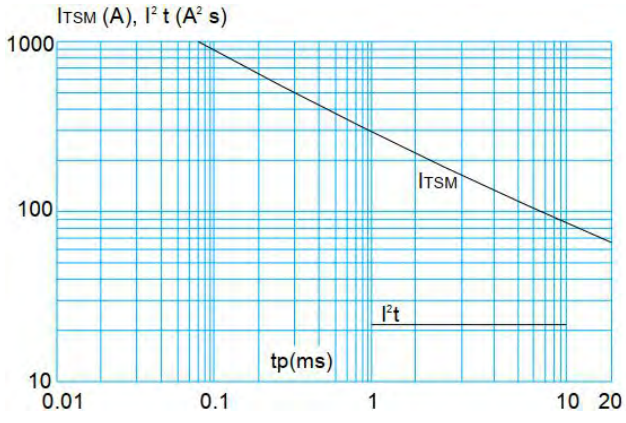


FIG.6: Relative variations of gate trigger current versus junction temperature

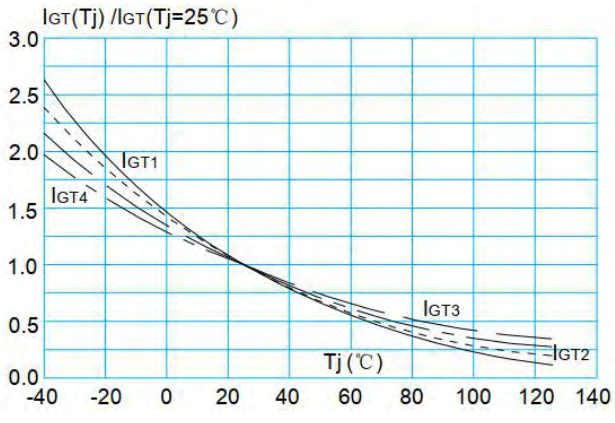


FIG.7: Relative variations of holding current versus junction temperature

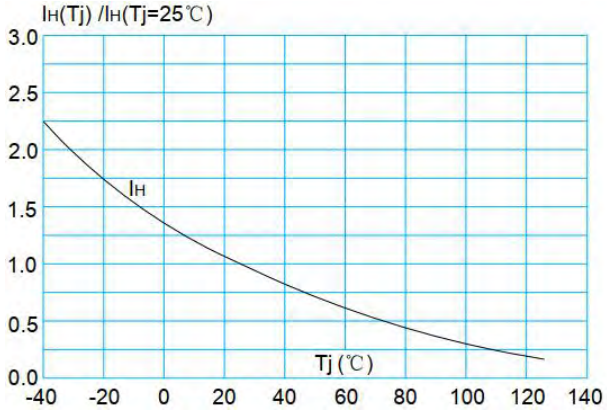
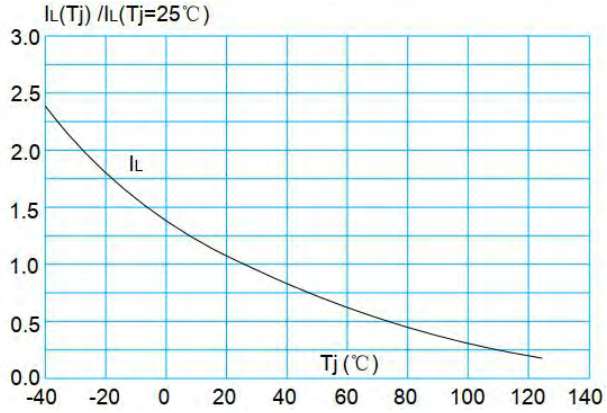
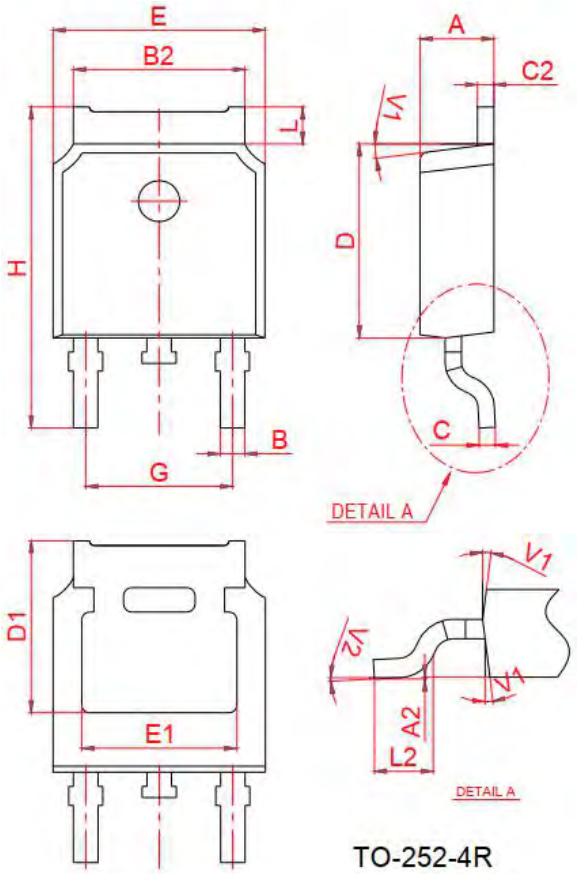


FIG.8: Relative variations of latching current versus junction temperature



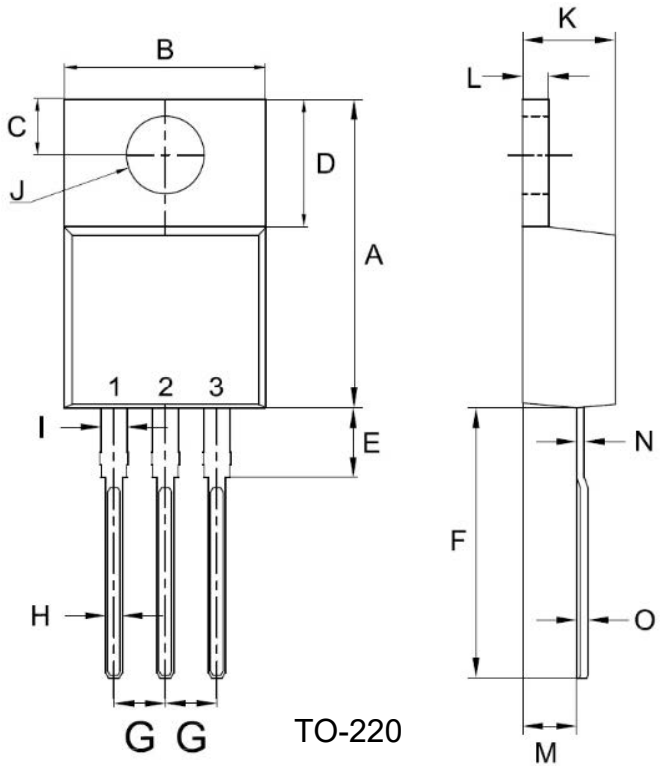
RoHS COMPLIANT

PACKAGE MECHANICAL DATA



TO-252-4R

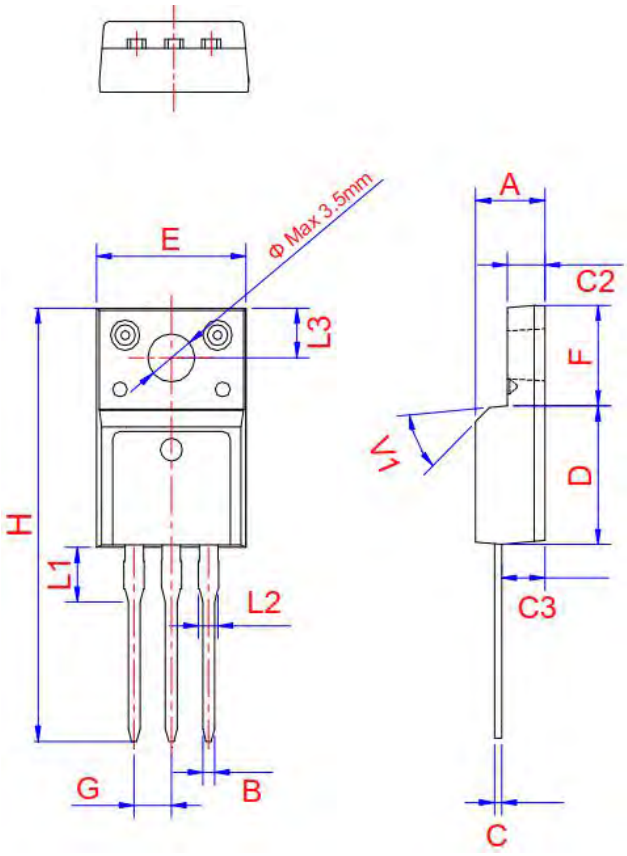
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.2		2.4	0.087		0.094
A2	0		0.1	0		0.004
B	0.66		0.86	0.026		0.034
B2	5.1		5.46	0.201		0.215
C	0.46		0.58	0.018		0.023
C2	0.44		0.58	0.017		0.023
D	5.9		6.3	0.232		0.248
D1	5.30REF			0.211REF		
E	6.4		6.8	0.252		0.268
E1	4.63			0.182		
G	4.372		4.772	0.172		0.188
H	9.8		10.4	0.386		0.409
L	1.09		1.21	0.043		0.048
L2	1.35		1.65	0.053		0.065
V1		7°			7°	
V2	0°		6°	0°		6°



TO-220

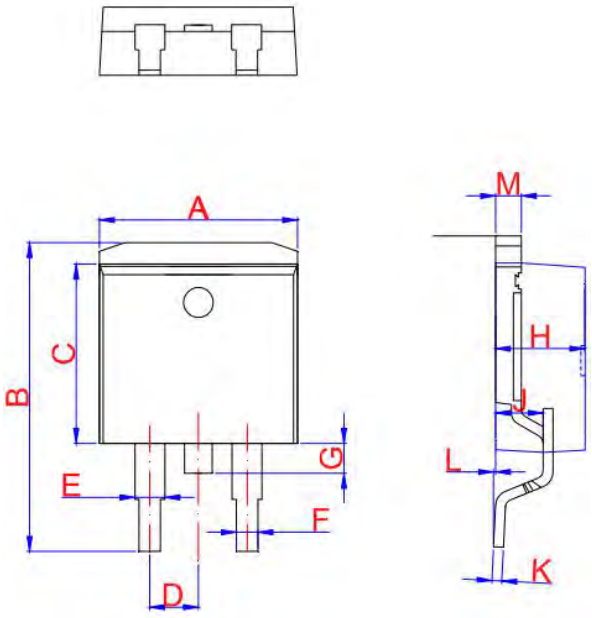
TO-220		Unit:mm
DIM	MIN	MAX
A	14.80	15.80
B	9.57	10.57
C	2.54	2.94
D	5.80	6.80
E	2.95	3.95
F	12.70	13.40
G	2.34	2.74
H	0.51	1.11
I	0.97	1.57
J	3.54ϕ	4.14ϕ
K	4.27	4.87
L	1.07	1.47
M	2.65	3.05
N	0.30	0.46
O	0.48	0.64

BT137 Series 8A Triacs



TO-220F

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.5		4.9	0.177		0.193
B	0.74	0.8	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	2.6		3	0.102		0.118
D	8.8		9.3	0.346		0.366
E	9.8		10.4	0.386		0.41
F	6.4		6.8	0.252		0.268
G		2.54			0.1	
H	28		29.8	1.102		1.173
L1		3.63			0.148	
L2	1.14		1.7	0.045		0.067
L3	2.65	3.3	0		0.13	0.116
V1		45°			45°	



TO-263

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.9		10.3	0.390		0.406
B	14.7		15.8	0.579		0.622
C	8.5		8.9	0.370		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	4.60	4.80	0.173	0.181	0.189
J	2.40	2.60	2.80	0.094	0.102	0.110
L	0	0.1	0.25	0	0.004	0.010
M	1.17	1.27	1.37	0.046	0.05	0.054