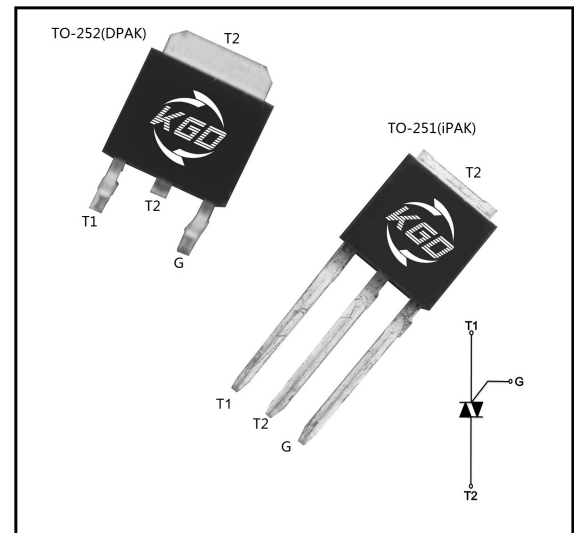


BT137S, BT137T Series

- Description:**
 High current density due to mesa technology; Glass Passivation.
- Applications**
 BT137S series triacs is suitable for general purpose AC switching. They can be used as an ON/OFF Function in applications such as static relays, heating regulation, induction motor starting circuits... or for phase control operation light dimmers, motor speed controllers.
- Features:**
 Blocking voltage to 600V
 On-state RMS current to 8A
 Non-repetitive peak on-state current to 84A
- Absolute Maximum Ratings**



Symbol	Parameter	Conditions	Value	Unit	
V_{DRM}	Repetitive peak off-state voltage	$T_J=25^{\circ}C$	600	V	
V_{RRM}	Repetitive peak Reverse voltage	$T_J=25^{\circ}C$	600	V	
$I_{T(RMS)}$	RMS on-state current (full sine wave)	$T_c=110^{\circ}C$	8	A	
I_{TSM}	Non-repetitive surge peak On-state current (full cycle, $T_J=25^{\circ}C$)	$f=60Hz, t_p=16.7ms$	84	A	
		$f=50Hz, t_p=20ms$	80		
I^2t	I^2t Value for fusing	$t_p=10ms$	36	A^2S	
I_{GM}	Peak gate current	$t_p=20\mu s, T_J=125^{\circ}C$	4	A	
$P_{G(AV)}$	Average gate power dissipation		1	W	
P_{GM}	Peak gate power dissipation	$t_p=10ms, T_J=125^{\circ}C$	10	W	
T_{STG}	Storage temperature		-40	150	$^{\circ}C$
T_J	Junction temperature		-40	125	$^{\circ}C$

BT137S, BT137T Series
Electrical Characteristics

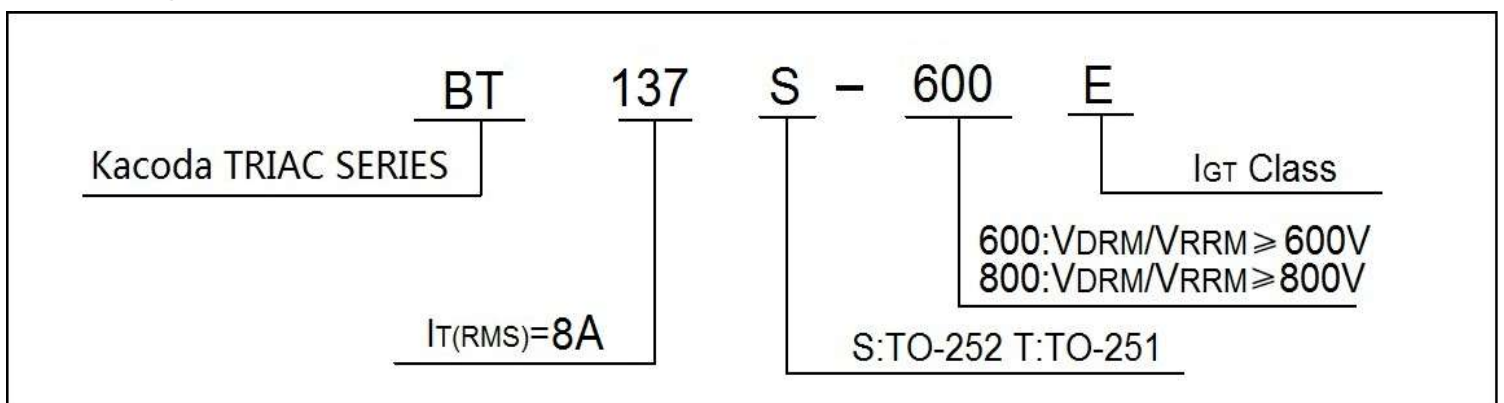
Symbol	Conditions	Quadrant	Value				Unit	
			D	E	F	G		
I_{GT}	$V_D=12V, R_L=33\Omega$	I - II - III	5	10	25	50	mA	
		IV	10	25	70	100		
V_{GT}		ALL	MAX	1.3			V	
V_{GD}	$V_D=V_{DRM}, R_L=3.3K\Omega, T_J=125^\circ C$	ALL	MIN	0.2			V	
I_L	$I_G=1.2I_{GT}$	I - III - IV	MAX	10	20	40	60	mA
		II	MAX	20	40	60	90	
I_H	$I_T=100mA$		MAX	10	25	30	60	mA
dv/dt	$V_{DM}=67\%V_{DRM}, \text{gate open}, T_J=125^\circ C$		MIN	10	20	200	400	V/ μs

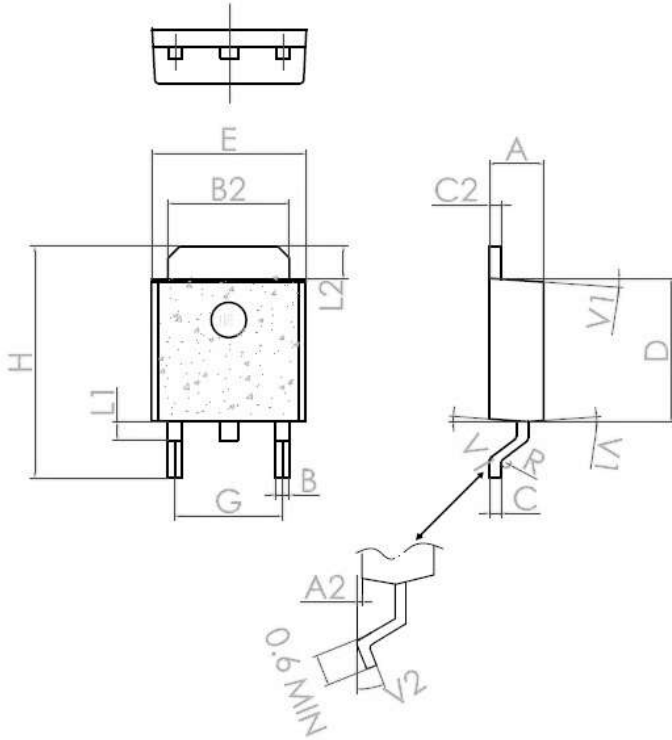
Electrical Characteristics

Symbol	Parameter	Numerical	Unit	
V_{TM}	$I_T=5A, t_p=380\mu s$	$T_J=25^\circ C$	1.55	V
I_{DRM}	$V_D=V_{DRM}, V_R=V_{RRM}$	$T_J=25^\circ C$	5	μA
I_{RRM}		$T_J=125^\circ C$	1	mA

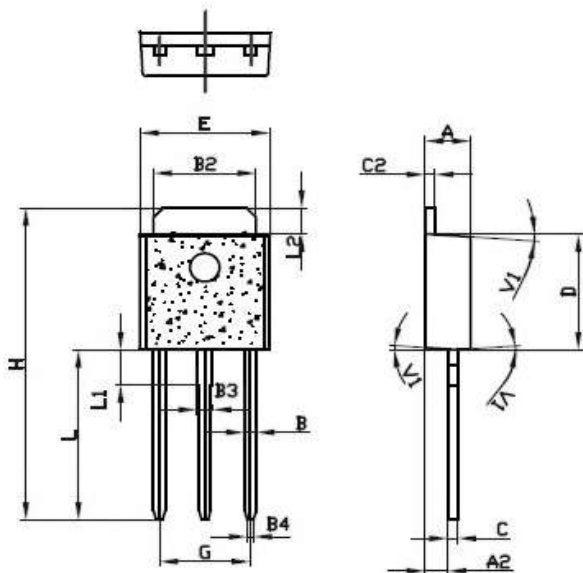
Thermal Characteristics

Symbol	Parameter	Numerical(MAX)	Unit
$R_{th(j-c)}$	Junction to case(AC)	3.7	$^\circ C/W$
$R_{th(j-a)}$	Junction to ambient(AC)	55	$^\circ C/W$

Ordering Information


Package Outline Dimensions
TO-252 / DPAK


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.2		2.4	0.086		0.095
A2	0.03		0.23	0.001		0.009
B	0.55		0.65	0.021		0.026
B2	5.2		5.4	0.204		0.212
C	0.45		0.62	0.017		0.024
C2	0.48		0.62	0.019		0.024
D	6		6.2	0.236		0.244
E	6.4		6.6	0.251		0.259
G	4.40		4.60	0.173		0.181
H	9.35		10.1	0.368		0.397
L1		0.8			0.031	
L2	1.37		1.5	0.054		0.059
V1		4°			4°	
V2	0°		8°	0°		8°

TO-251(iPAK)


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.2		2.4	0.086		0.095
A2	0.9		1.1	0.035		0.043
B	0.55		0.65	0.021		0.026
B2	5.1		5.4	0.200		0.212
B3	0.76		0.85	0.030		0.033
B4		0.32			0.013	
C	0.45		0.62	0.017		0.024
C2	0.48		0.62	0.019		0.024
D	6		6.2	0.236		0.244
E	6.4		6.7	0.252		0.264
G	4.4		4.7	0.173		0.185
H	16.0		16.7	0.630		0.658
L	8.9		9.4	0.350		0.370
L1	1.8		1.9	0.071		0.075
L2	1.37		1.5	0.054		0.059
V1		4°			4°	

FIG.1: Maximum power dissipation versus RMS on-state current (full cycle)

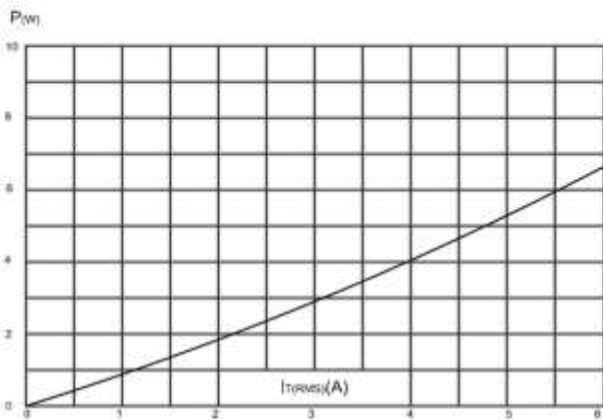


FIG.2: RMS on-state current versus case temperature (full cycle)

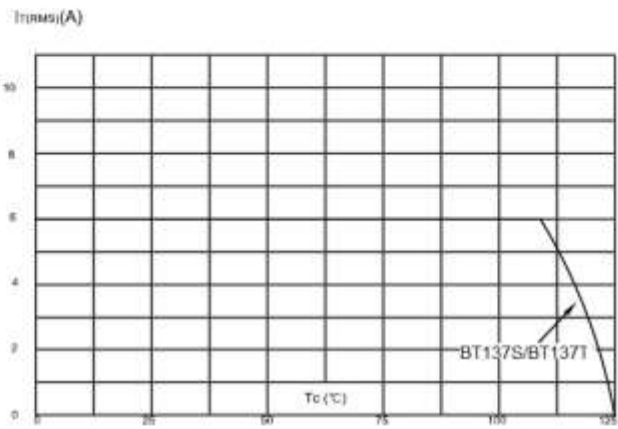


FIG.3: On-state characteristics (maximum values).

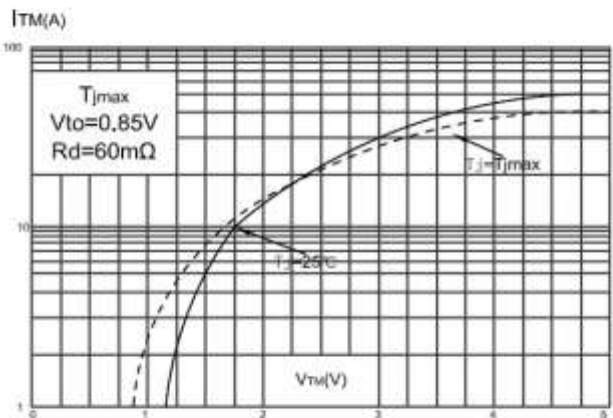


FIG.4: Surge peak on-state current versus number of cycles.

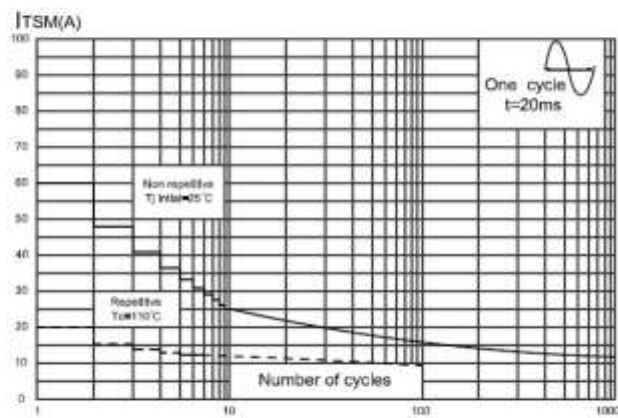


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10ms$, and corresponding value of I^2t .

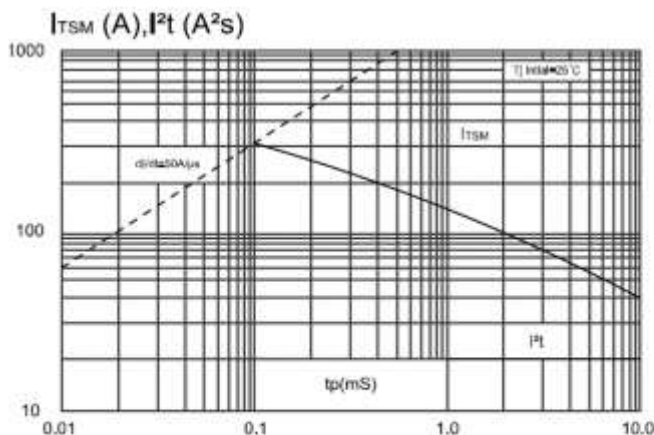


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)

