T8xx Series

- **Description:**

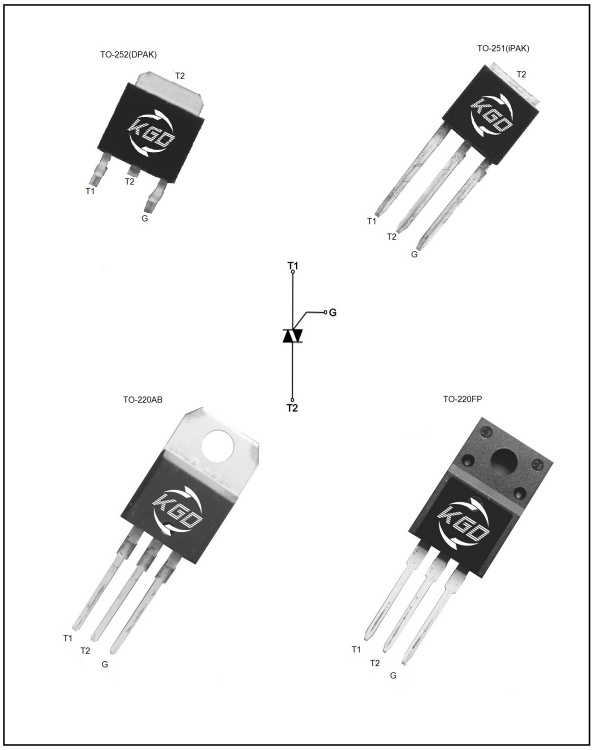
  High current density due to single mesa trchnology;
  SIPOS and Glass Passivation.

- **Applications:**

  T8XX 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 stating circuits... or for phase contol operation light dimmers,motorspeed controllers.

- **Features:**

  T8XX are 3 Quandrants TRIACS, They are specially recommended for use on inductive loads.
  T8XX are isolated internally,they providesa 2500V RMS isolation voltage from all three terminals to extemal heetsink.
  Blocking voltage to 800V
  On-state RMS current to 8A
  Non-repetitive peak on-state current to 80A



- **Absolute Maximum Ratings**

Symbol	Parameter	Conditions	Min	Max	Unit
V_{DRM}	Repetitive peak off-state voltage	T_J=25℃	-	800	V
$I_{T(RMS)}$	RMSon-statecurrent	F=60Hz,Tc=110℃	-	8	A
I_{TSM}	Non-repetitive peak On-state current	F=50Hz, t=20ms	-	80	A
		F=60Hz, t=16.7ms	-	84	A
I^2t	I^2t for fusing	Tp=10ms	-	36	A^2S
di/dt	Rate of rise of on-state current	I_G=2×I_{GT},t_r≤100ns, T_j=150℃	-	50	A/μs
I_{GM}	Peak gate current	t_p=20μs, T_j=150℃	-	4	A
P_{GM}	Peak gate power		-	5	W
$P_{G(AV)}$	Average gate power		-	1	W
T_{STG}	Storage temperature		-40	150	℃
T_J	Junction temperature		-40	125	℃

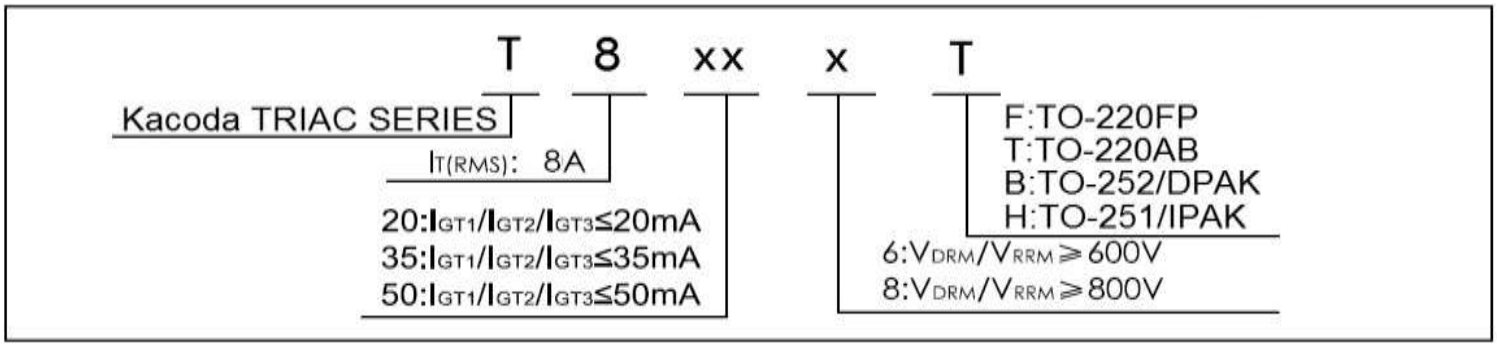
● Thermal Characteristics

Symbol	Parameter		Value	Unit
$R_{th(j-mb)}$	Junction to Case(AC)	DPAK/IPAK	1.6	℃/W
		TO-220AB Insulated/TO-220FP	2.5	
$R_{th(j-a)}$	Junction to am bient	DPAK/IPAK	60	℃/W
		TO-220AB Insulated/TO-220FP		

● Electrical Characteristics

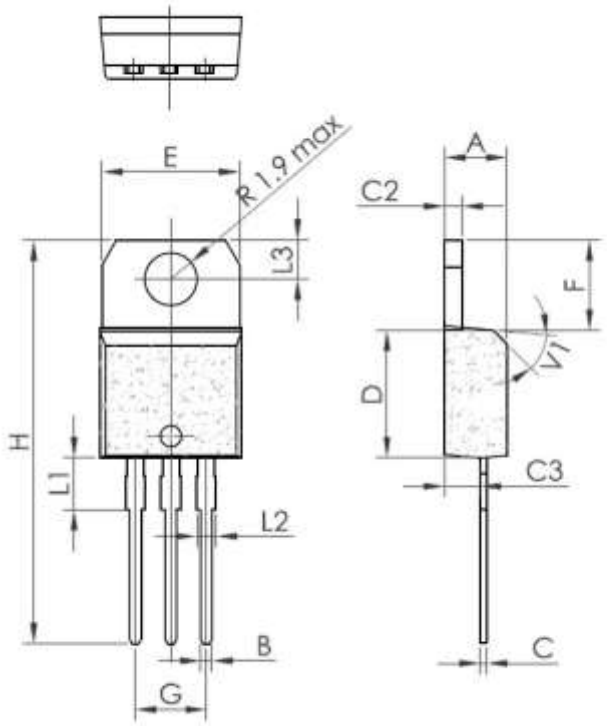
Symbol	Conditions	Quadrant		Numerical				Unit
				T805	T810	T835	T850	
V_{TM}	I_T=17A,tp=380μs	T_J=25℃	MAX		1.55			V
I_{DRM} I_{RRM}	$V_D=V_{DRM}$,$V_R=V_{RRM}$	T_J=25℃	MAX		10			μA
		T_J=150℃	MAX		3.0			mA
I_{GT}	V_D=12V,R_L=33Ω	I-II-III	MAX	5	10	35	50	mA
V_{GT}		I-II-III	MAX		1.5			V
V_{GD}	$V_D=V_{DRM}$,R_L=3.3KΩ, T_j=150℃	I-II-III	MIN		0.2			V
I_L	$I_T=1.2I_{GT}$	I-III	MAX	10	25	50	70	mA
		II	MAX	15	30	60	80	mA
I_H	I_T=100mA		MAX	10	15	35	50	Ma
dv/dt	V_{DM}=67%V_{DRM},gate open,T_j=150℃		MIN	20	40	400	1000	V/μs

● Ordering Information



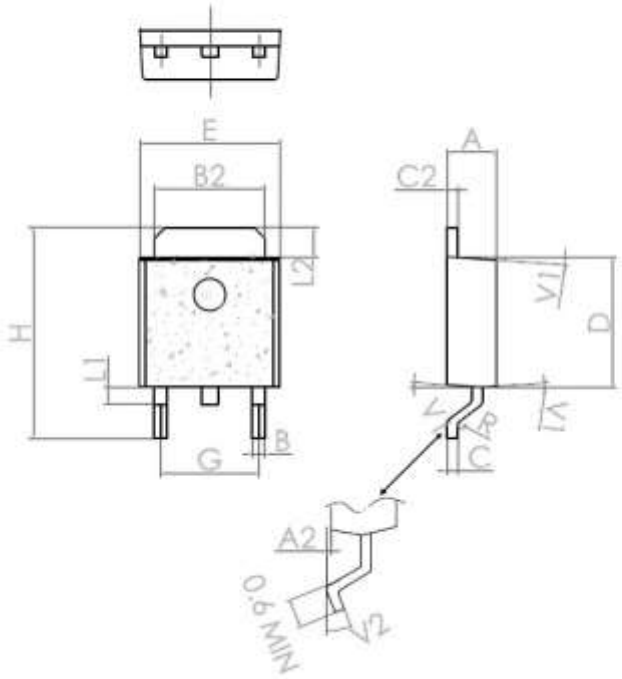
- **Package Outline Dimensions**

TO-220AB



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.4		4.6	0.173		1.181
B	0.61		0.88	0.024		0.034
C	0.49		0.70	0.019		0.027
C2	1.23		1.32	0.048		0.051
C3	2.4		2.72	0.094		0.107
D	8.6		9.7	0.338		0.382
E	10		10.4	0.393		0.409
F	6.2		6.6	0.244		0.259
G	4.8		5.4	0.189		0.213
H	28.0		29.8	11.0		11.7
L1		3.75			0.147	
L2	1.14		1.7	0.044		0.066
L3	2.65		2.95	0.104		0.116
V1		40°			40°	

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°

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

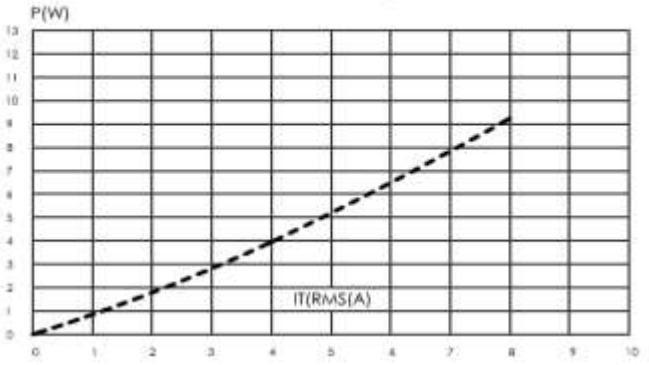


FIG.2: RMS on-state current versus case temperature(full cycle)

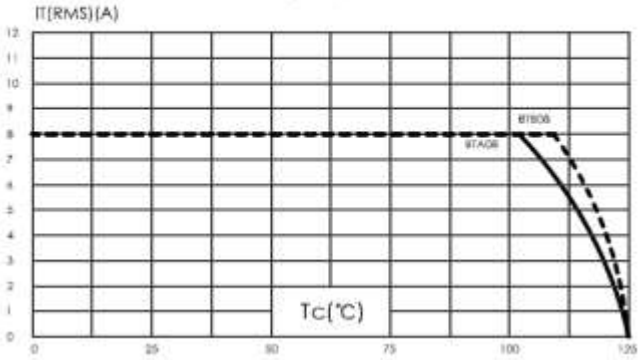


FIG.3: On-state characteristics (maximum values)

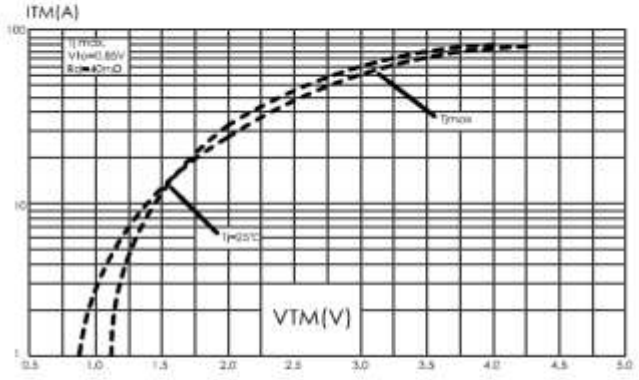


FIG.4: Surge peak on-state current versus number of cycles.

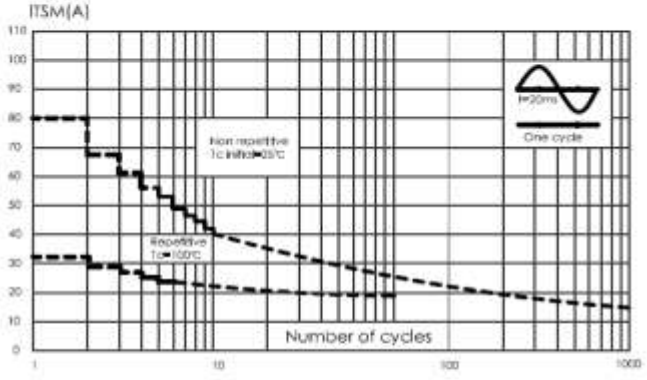


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms, and corresponding value of I²t

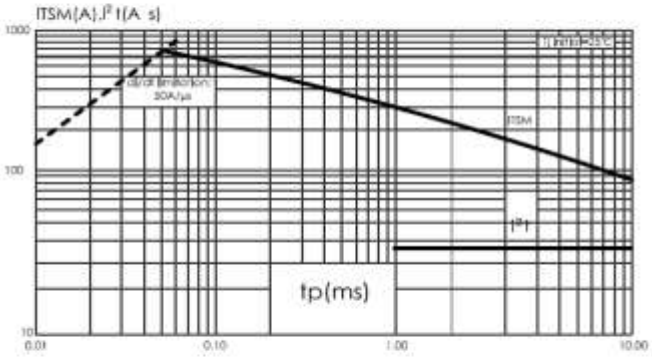


FIG.6: Relative variation of gate trigger current,holding current and latching current versus junction temperature(typical values).