

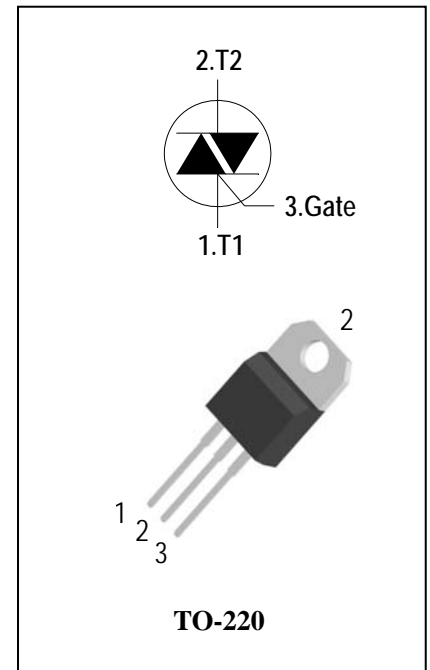
3 Quadrants Triacs

General Description

High current density due to mesa technology . the T12XX triac series is suitable for general purpose AC switching. They can be used as an ON/OFF function in applications such as static relays, heating regulation, High power motor controls e.g. washing machines and vacuum cleaners, Rectifier-fed DC inductive loads e.g. DC motors and solenoids , motor speed controllers.

Features

- ◆ Repetitive Peak Off-State Voltage: 600V/800V
- ◆ R.M.S On-State Current ($I_{T(RMS)}=12A$)
- ◆ High Commutation dv/dt
- ◆ These Devices are Pb-Free and are RoHS Compliant



Absolute Maximum Ratings

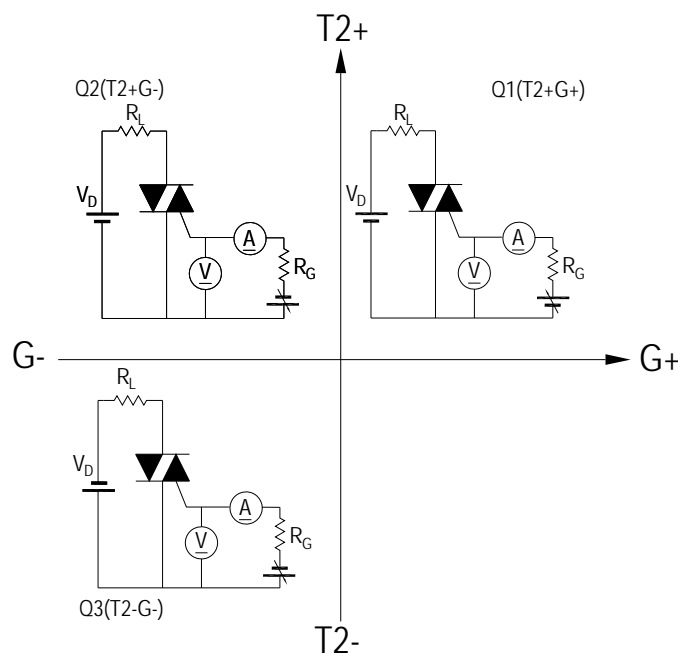
Symbol	Items	Conditions	Ratings	Unit
V_{DRM} V_{RRM}	Repetitive Peak Off-State Voltage	$T_j = 25^\circ\text{C}$	T12XXC-6B: 600 T12XXC-8B: 800	V
$I_{T(RMS)}$	R.M.S On-State Current	$T_c = 100^\circ\text{C}$	12	A
I_{TSM}	Surge On-State Current	$t_p=20\text{ms}(50\text{Hz})/t_p=16.7\text{ms}(60\text{Hz})$	120/126	A
I^2t	I^2t for fusing	$t_p=10\text{ms}$	78	A^2s
dI/dt	Critical rate of rise of on-state current	$F = 120\text{ Hz } T_j = 125^\circ\text{C}$ $I_G = 2 \times I_{GT}, t_r \leq 100\text{ ns}$	50	$\text{A}/\mu\text{s}$
I_{GM}	Peak Gate Current	$t_p = 20\ \mu\text{s } T_j = 125^\circ\text{C}$	4	A
$P_{G(AV)}$	Average Gate Power Dissipation($T_j=125^\circ\text{C}$)		1	W
P_{GM}	Peak Gate Power Dissipation($t_p=20\mu\text{s}, T_j=125^\circ\text{C}$)		5	W
T_j	Operating Junction Temperature		- 40 ~ 125	$^\circ\text{C}$
T_{STG}	Storage Temperature		- 40 ~ 150	$^\circ\text{C}$



Electrical Characteristics (T_j = 25°C unless otherwise specified)

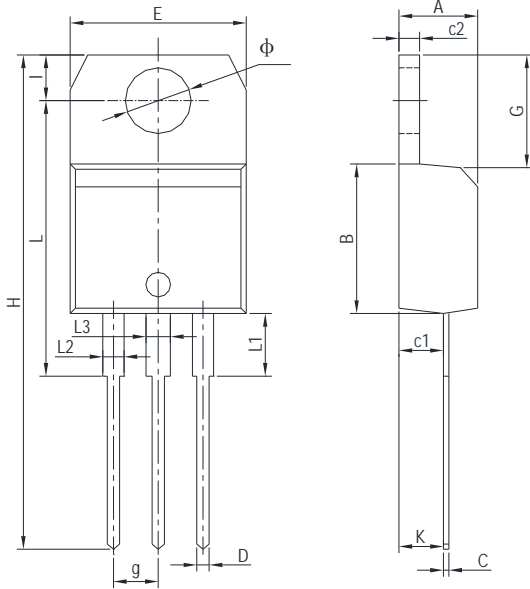
Symbol	Items		Conditions		T12XXC-6/8B				Unit
					T1205	T1210	T1235	T1250	
I _{DRM} I _{RRM}	Peak Forward Reverse Blocking Current		V _{DRM} = V _{RRM} , T _j = 25°C V _{DRM} = V _{RRM} , T _j = 125°C	Max.	5 1				uA mA
V _{TM}	Peak On-State Voltage		I _{TM} = 17A, t _p = 380 μs	Max.	1.55				V
V _{GD}	Q1-Q2-Q3	Non-Trigger Gate Voltage	V _D = V _{DRM} R _L = 3.3 kΩ T _j = 125°C	Min.	0.2				V
V _{GT}	Q1-Q2-Q3	Gate Trigger Voltage	V _D = 12V , R _L = 33Ω	Max.	1.3				V
I _{GT}	Q1-Q2-Q3	Gate Trigger Current		Max.	5	10	35	50	mA
I _H	Q1-Q2-Q3	Holding Current	I _T = 0.1A	Max.	10	15	40	60	mA
I _L	Q1-Q3	Latching Current	I _G = 1.2 I _{GT}	Max.	15	20	50	70	mA
	Q2				25	35	60	80	
dV/dt	Critical Rate of Rise of Off-State Voltage		V _D = 2/3V _{DRM} gate open T _j = 125°C	Min.	20	40	500	1000	V/μs
(dV/dt) _c	Critical Rate of Change of Commutating Voltage		(dI/dt) _c = -5.3A/ms T _j = 125°C	Min.	0.5	1	10	25	V/μs
R _{th(j-c)}	Junction to case (AC)			Max.	1.4				°C/W
R _{th(j-a)}	Junction to ambient			Max.	60				°C/W

FIG.1: Triac quadrant are defined and the gate trigger test circuit



PACKAGE MECHANICAL DATA

TO-220 Package Dimension



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.40	4.60	0.173	0.181
B	9.00	9.30	0.354	0.366
C	0.40	0.60	0.015	0.023
c1	2.00	2.60	0.078	0.102
c2	1.23	1.32	0.048	0.051
D	0.70	1.00	0.027	0.039
E	10.00	10.40	0.393	0.409
g	2.40	2.70	0.094	0.106
G	6.20	6.80	0.244	0.267
H	28.00	29.85	1.102	1.175
I	2.65	2.95	0.104	0.116
L	15.80	16.80	0.622	0.661
L1	3.75		0.147	
L2	1.14	1.70	0.044	0.066
L3	1.14	1.70	0.044	0.066
Φ	3.60	3.90	0.141	0.153
K	2.60TYP		0.102TYP	

Making Diagram

ADV: Logo
T1235C-8B: Part number
X: Internal control code
H: Halogen Free

T 12 XX C - 8 B

<p>T series thyristor</p> <p>Current: 12=12A</p> <p>Gate trigger current: 05=5mA 10=10mA, 35=35mA, 50=50mA</p>	<p>Package explain: B=TO-220</p> <p>Voltage: 6=600V, 8=800V</p> <p>Quadrant: C=3Q</p>
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Ordering information

Part number	Package	Marking	Packing	Quantity
T1235C-8B	TO-220	T1235C-8B	Tube	50pcs

Note: Gate Trigger Current Sensitivity and type 05=5mA, 10=10mA, 35=35mA, 50=50mA

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