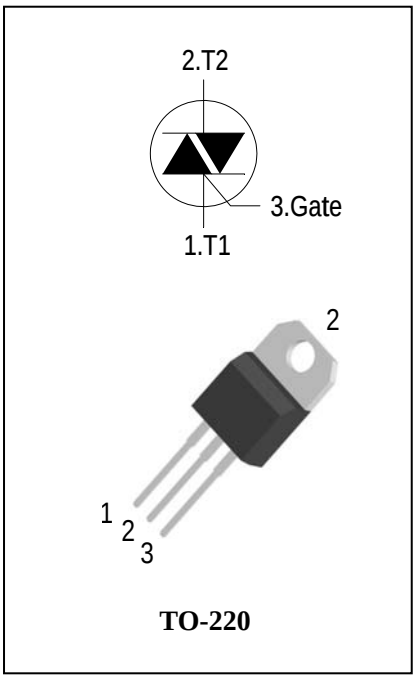
3 Quadrants Triacs

General Description

High current density due to mesa technology . the T16XX 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 ($I_{T(RMS)}$=16A)
- 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	Tj = 25°C	T16XXC-6B	600	V
			T16XXC-8B	800	
$I_{T(RMS)}$	R.M.S On-State Current	T_C = 100°C		16	A
I_{TSM}	Surge On-State Current	tp=20ms(50Hz)/tp=16.7ms(60Hz)		160/168	A
I^2t	I^2t for fusing	tp=10ms		144	A^2s
dI/dt	Critical rate of rise of on-state current	F = 120 Hz Tj = 125°C I_G = 2 x I_{GT} , tr ≤ 100 ns		50	A/μs
I_{GM}	Peak Gate Current	tp = 20 μs Tj = 125°C		4	A
$P_{G(AV)}$	Average Gate Power Dissipation(Tj=125°C)			1	W
P_{GM}	Peak Gate Power Dissipation(tp=20us,Tj=125°C)			5	W
T_j	Operating Junction Temperature			- 40 ~ 125	°C
T_{STG}	Storage Temperature			- 40 ~ 150	°C

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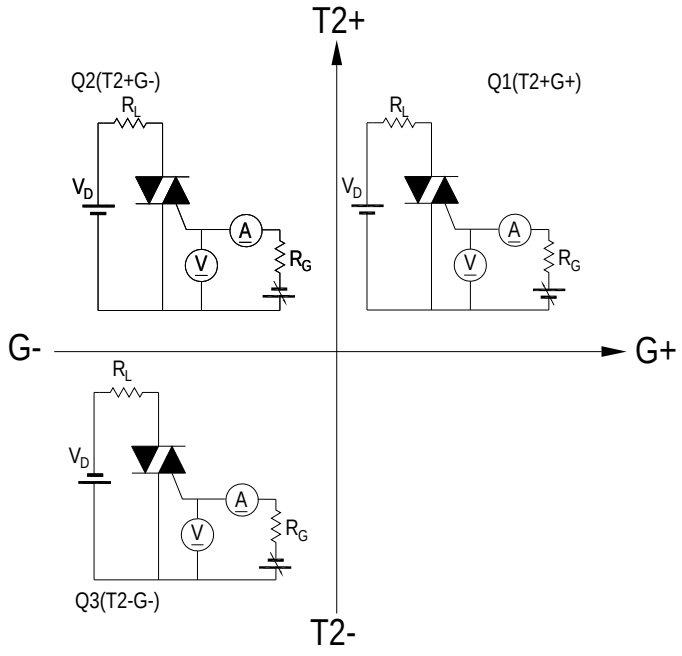
Electrical Characteristics(T_j = 25°C unless otherwise specified)

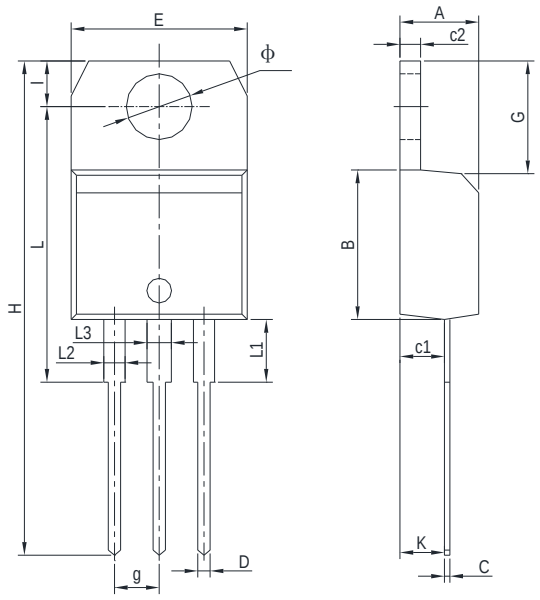
Symbol	Items		Conditions		T16XXC-6/8B				Unit
					T1605	T1610	T1635	T1650	
I_{DRM}	Peak Forward Reverse Blocking Current		V_{DRM} = V_{RRM}, Tj = 25°C	Max.	5				uA
I_{RRM}			V_{DRM} = V_{RRM}, Tj = 125°C		2				mA
V_{TM}	Peak On-State Voltage		I_{TM} = 22.5A, t_p = 380 μs	Max.	1.55				V
V_{GD}	Q1-Q2-Q3	Non−Trigger Gate Voltage	V_D = V_{DRM} R_L = 3.3 kΩ Tj = 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 Tj = 125°C	Min.	20	40	500	1000	V/μs
(dV/dt)c	Critical Rate of Change of Commutating Voltage		(dI/dt)c=-7A/ms Tj = 125°C	Min.	0.5	1	10	25	V/μs
$R_{th(j-c)}$	Junction to case (AC)			Max.	1.2				°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



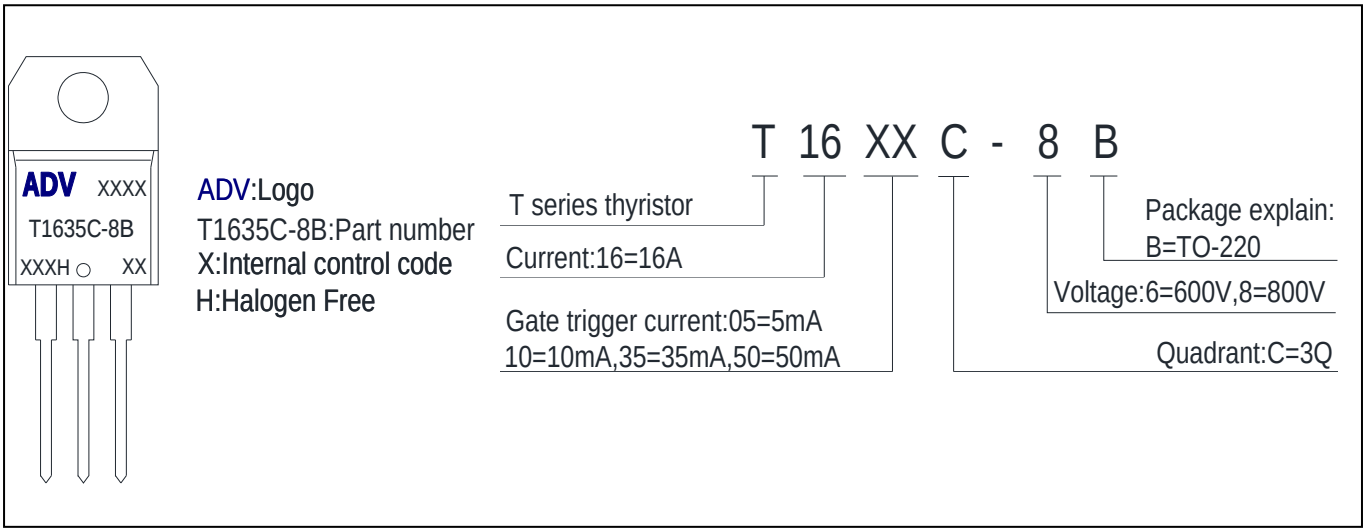
PACKAGE MECHANICAL DATA

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



Ordering information

Part number	Package	Marking	Packing	Quantity
T1635C-8B	TO-220	T1635C-8B	Tube	50pcs
Note: Gate Trigger Current Sensitivity and type05=5mA,10=10mA,35=35mA,50=50mA				

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