

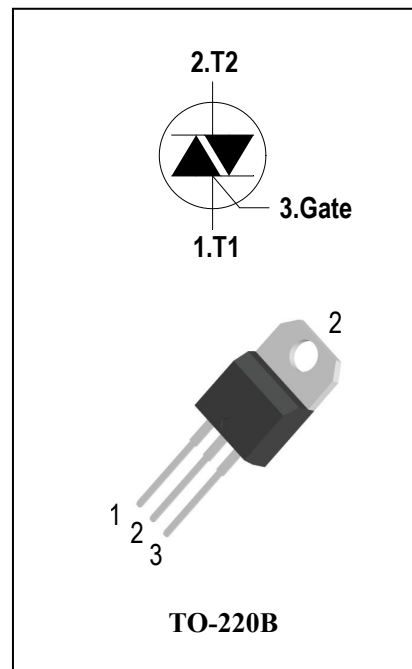
3 Quadrants Triacs

General Description

High current density due to mesa technology. the T4XXC 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, Rectifier-fed DC inductive loads e.g.DC motors and solenoids , motor speed controllers.

Features

- ◆ Repetitive Peak Off-State Voltage: 600Vand800V
- ◆ R.M.S On-State Current ($I_{T(RMS)} = 4A$)
- ◆ High Commutation dv/dt
- ◆ These Devices are Pb-Free and are RoHS Compliant



Absolute Maximum Ratings

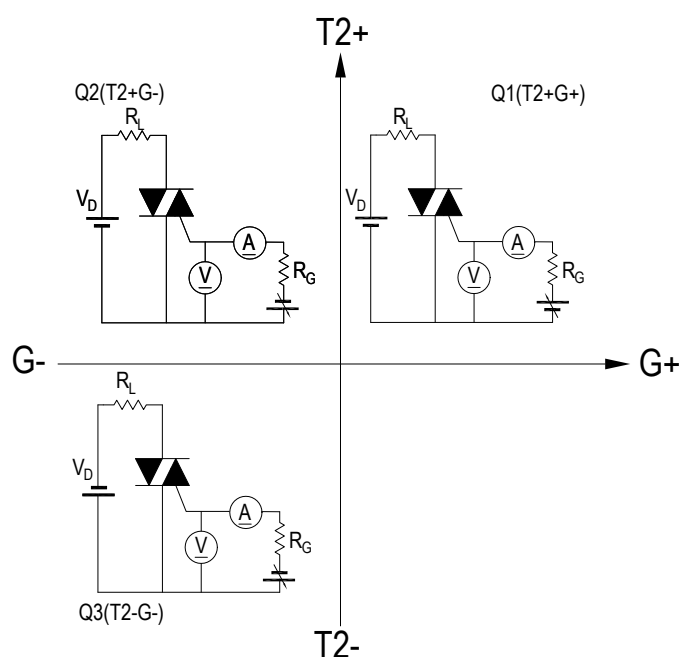
| Symbol | Items | Conditions | | Ratings | Unit |
|------------------------|--|--|----------|------------|-------------|
| V_{DRM} V_{RRM} | Repetitive Peak Off-State Voltage | $T_j = 25^{\circ}C$ | T4XXC-6B | 600 | V |
| | | | T4XXC-8B | 800 | V |
| $I_{T(RMS)}$ | R.M.S On-State Current | $T_C = 110^{\circ}C$ | | 4 | A |
| I_{TSM} | Surge On-State Current | $t_p=20ms(50Hz)/t_p=16.7ms(60Hz)$ | | 25/27 | A |
| I^2t | I^2t for fusing | $t_p=10ms$ | | 3.1 | A^2s |
| dI/dt | Critical rate of rise of on-state current | $F = 120\text{ Hz}$ $T_j = 125^{\circ}C$ $I_G = 2 \times I_{GT}$, $t_r \leq 100\text{ ns}$ | | 50 | $A/\mu s$ |
| I_{GM} | Peak Gate Current | $t_p = 20\text{ }\mu s$ $T_j = 125^{\circ}C$ | | 2 | A |
| $P_{G(AV)}$ | Average Gate Power Dissipation($T_j=125^{\circ}C$) | | | 0.5 | W |
| P_{GM} | Peak Gate Power Dissipation($t_p=20\mu s, T_j=125^{\circ}C$) | | | 5 | W |
| T_j | Operating Junction Temperature | | | - 40 ~ 125 | $^{\circ}C$ |
| T_{STG} | Storage Temperature | | | - 40 ~ 150 | $^{\circ}C$ |



Electrical Characteristics ($T_j = 25^\circ\text{C}$ unless otherwise specified)

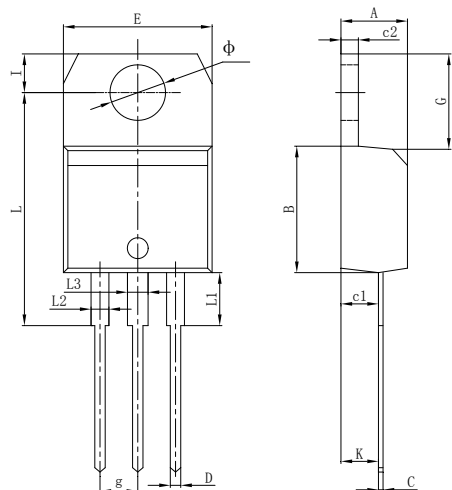
| Symbol | Items | | Conditions | | T4XXC-6B/8B | | | | Unit |
|----------------------|--|--------------------------|---|------|-------------|------|------|------|------|
| | | | | | T405 | T410 | T435 | T450 | |
| I _{DRM} | Peak Forward Reverse Blocking Current | | V _{DRM} = V _{RRM} , T _j = 25°C | Max. | 5 | | | | uA |
| I _{RRM} | | | V _{DRM} = V _{RRM} , T _j = 125°C | | 1 | | | | mA |
| V _{TM} | Peak On-State Voltage | | I _{TM} = 5A, t _p = 380 μs | Max. | 1.7 | | | | 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. | 10 | 25 | 50 | 70 | mA |
| | Q2 | | | | 15 | 30 | 70 | 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 | 400 | 1000 | V/μs |
| (dV/dt) _c | Rate of Change of Commutating Current, | | (dI/dt) _c =-1.7A/ms T _j = 125°C | Min. | 0.5 | 1 | 10 | 25 | V/μs |
| R _{th(j-c)} | Junction to case (AC) | | | Max. | 2.6 | | | | °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-220B 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 |
| 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
T435C-8B:Part number
X:Internal control code

T 4 XX C - 8 B

T series thyristor

Current:4=4A

Gate trigger current:05=5mA
10=10mA,35=35mA,50=50mA

Package explain:
B=TO-220B

Voltage:6=600V,8=800V

Quadrant:C=3Q

Ordering information

| Part number | Package | Marking | Packing | Quantity |
|-------------|---------|----------|---------|----------|
| T4XXC-6B | TO-220B | T4XXC-6B | Tube | 50pcs |
| T4XXC-8B | TO-220B | T4XXC-8B | Tube | 50pcs |

Note: Gate Trigger Current Sensitivity and type05=5mA,10=10mA,35=35mA,50=50mA

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