

Product Summary

| Symbol | Value | Unit |
|-------------------|-----------|------|
| $I_{T(RMS)}$ | 16 | A |
| $V_{DRM} V_{RRM}$ | 600 / 800 | V |
| V_{TM} | 1.55 | V |

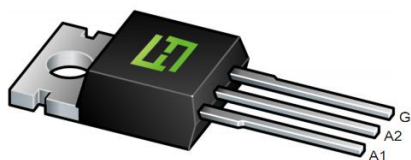
Feature

With high ability to withstand the shock loading of large current, With high commutation performances, 4 quadrants products especially recommended for use on inductive load.

Application

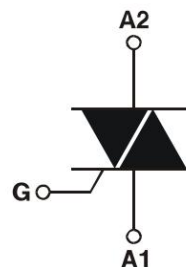
Washing machine, vacuums, massager, solid state relay, AC Motor speed regulation and so on.

Package

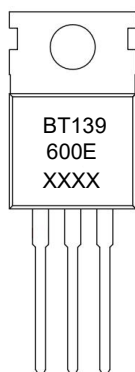


TO-220C

Circuit diagram



Marking



Absolute maximum ratings (Ta=25°C unless otherwise noted)

| Parameter | Symbol | Value | Unit | |
|---|--------------|--------------|------------------|------------|
| Repetitive peak off-state voltage | V_{DRM} | 600 / 800 | V | |
| Repetitive peak reverse voltage | V_{RRM} | 600 / 800 | V | |
| RMS on-state current | $I_{T(RMS)}$ | 16 | A | |
| Non repetitive surge peak on-state current (full cycle, F=50Hz) | I_{TSM} | 140 | A | |
| I^2t value for fusing (tp=10ms) | I^2t | 98 | A ² s | |
| Critical rate of rise of on-state current ($I_G = 2 \times I_{GT}$) | di_T/dt | I - II - III | 50 | A/ μ s |
| | | IV | 10 | |
| Peak gate current | I_{GM} | 2 | A | |
| Average gate power dissipation | $P_{G(AV)}$ | 0.5 | W | |
| Junction Temperature | T_J | -40 ~ +125 | °C | |
| Storage Temperature | T_{STG} | -40 ~ +150 | °C | |

Electrical characteristics (TA=25°C, unless otherwise noted)

| Parameter | Symbol | Test Condition | Value | Unit | | |
|--|---------------|---|--------------|---------------------|------------|---------|
| Gate trigger current | I_{GT} | $V_D = 12V$ $I_T = 0.1A$ $T_J = 25^\circ C$ | I - II - III | 10 | mA | |
| | | | IV | 25 | | |
| Gate trigger voltage | V_{GT} | I - II - III - IV | MAX. | 1.3 | V | |
| Gate non-trigger voltage | V_{GD} | $V_D = V_{DRM}$ $T_J = 125^\circ C$ | MIN. | 0.2 | V | |
| latching current | I_L | $V_D = 12V$ $I_{GT} = 0.1A$ $T_J = 25^\circ C$ | I - III - IV | 30 | mA | |
| | | | II | 40 | | |
| Holding current | I_H | I - II - III - IV | MAX. | 25 | mA | |
| Critical-rate of rise of commutation voltage | dV_D/dt | $V_D = 2/3V_{DRM}$ Gate Open $T_J = 125^\circ C$ | MIN. | 20 | V/ μ s | |
| STATIC CHARACTERISTICS | | | | | | |
| Forward "on" voltage | V_{TM} | $I_{TM} = 20A$ $tp = 380\mu s$ | MAX. | 1.55 | V | |
| Repetitive Peak Off-State Current | I_{DRM} | $V_D = V_{DRM}$ $V_R = V_{RRM}$ | MAX. | $T_J = 25^\circ C$ | 5 | μA |
| Repetitive Peak Reverse Current | I_{RRM} | | | $T_J = 125^\circ C$ | 1 | mA |
| THERMAL RESISTANCES | | | | | | |
| Thermal resistance | $R_{th(j-c)}$ | Junction to case(AC) | TYP. | 1.2 | °C/W | |
| | $R_{th(j-a)}$ | Junction to ambient | TYP. | 60 | °C/W | |

Typical Characteristics

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

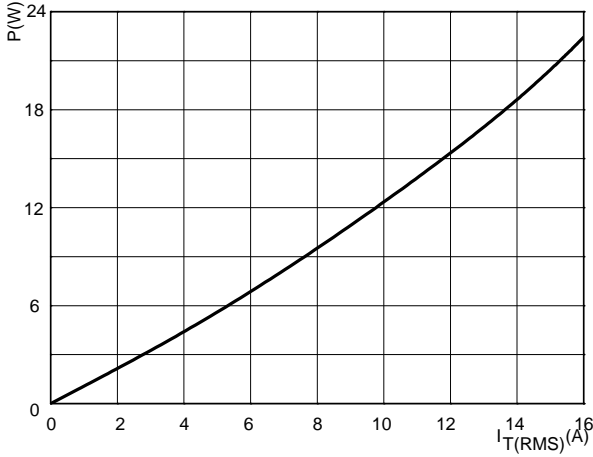


FIG.2: RMS on-state current versus case temperature (full cycle)

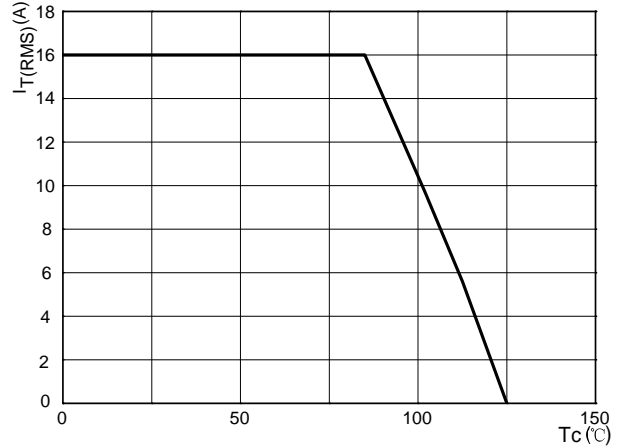


FIG.3: Surge peak on-state current versus number of cycles

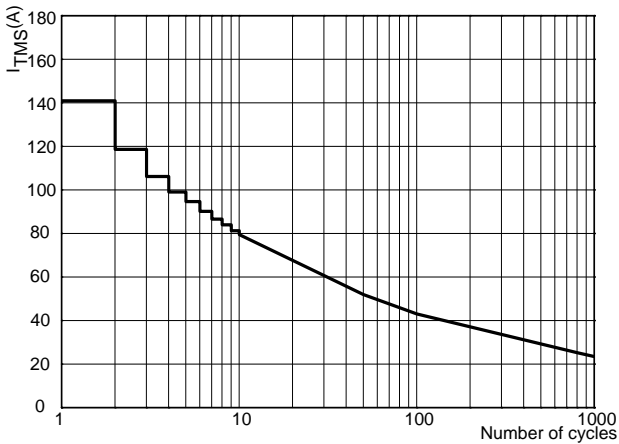


FIG.4: On-state characteristics (maximum values)

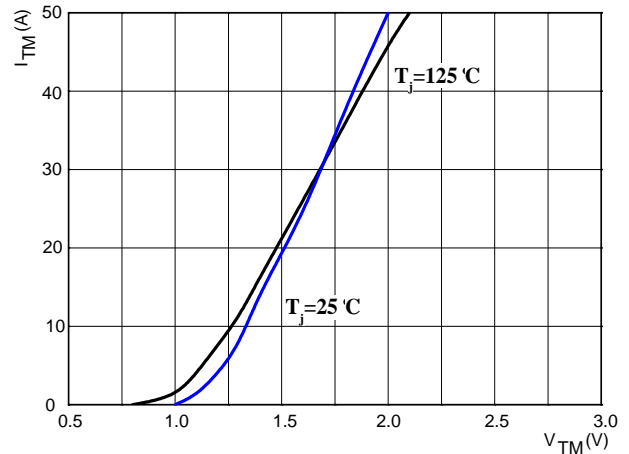


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp < 10ms

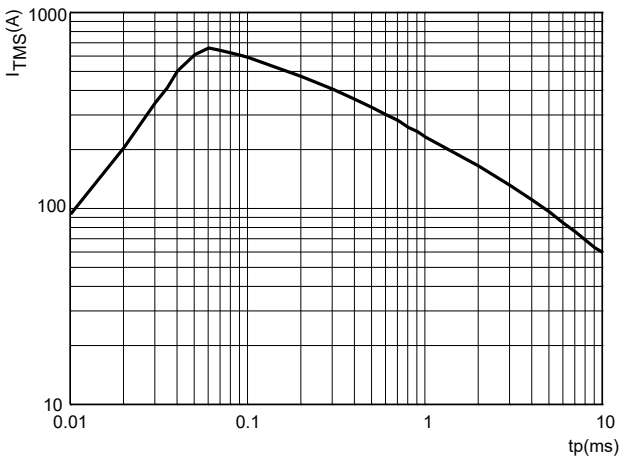
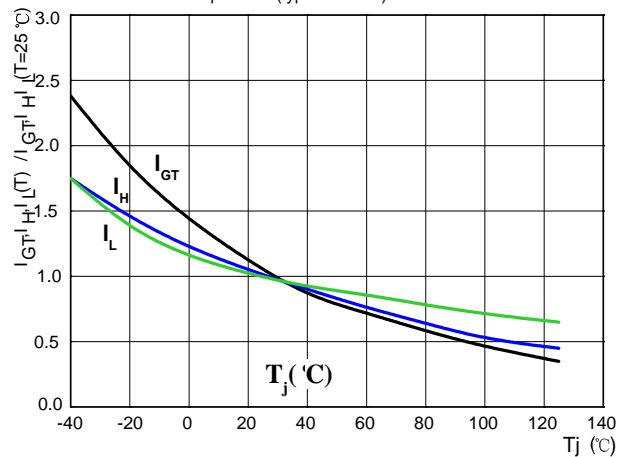
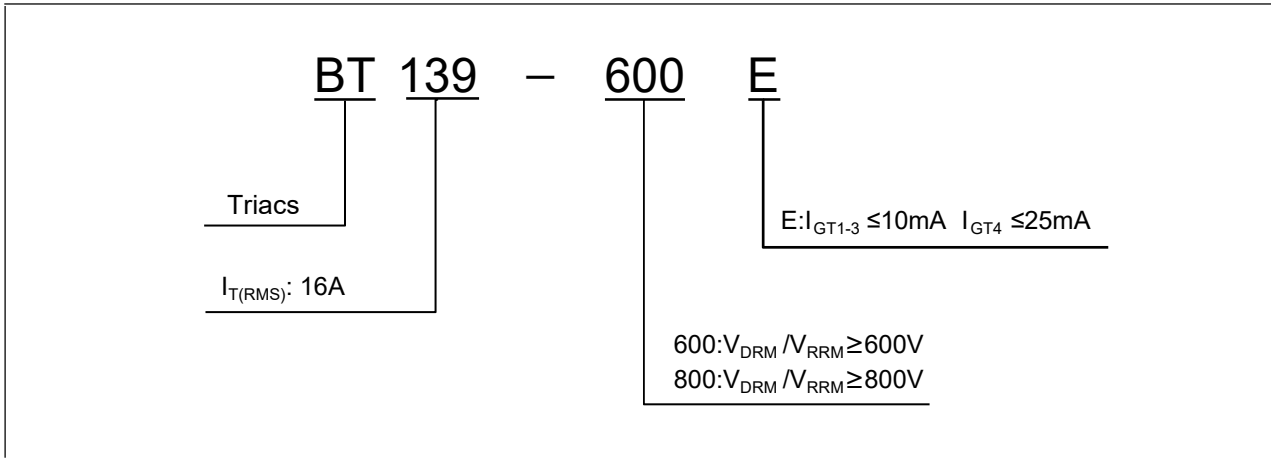


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



Ordering Information



TO-220C Package Information

