

## 8A 3Quadrants TRIACs

### Product Summary

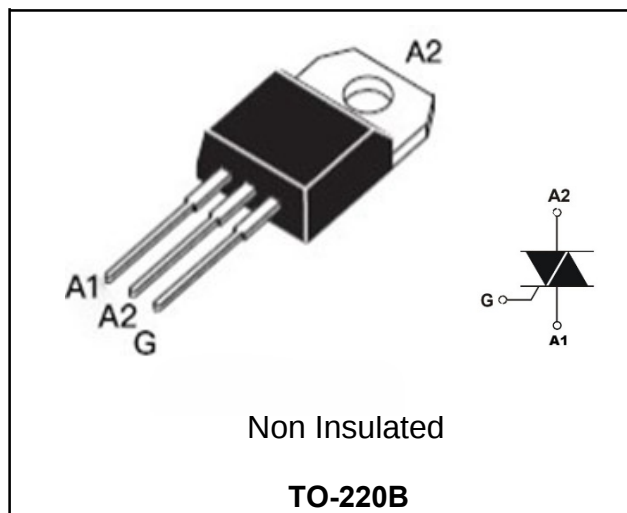
| Symbol            | Value   | Unit |
|-------------------|---------|------|
| $I_{T(RMS)}$      | 8       | A    |
| $V_{DRM} V_{RRM}$ | 600/800 | V    |
| $V_{TM}$          | 1.55    | V    |

### Features

With high ability to withstand the shock loading of large current, Provide high dv/dt rate with strong resistance to electromagnetic interference.

### Application

Power charger, T-tools, massager, solid state relay, AC Motor speed regulation and so on.



### 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                                                | $I_{T(RMS)}$ | 8            | A                |
| Non repetitive surge peak on-state current (full cycle, F=50Hz)     | $I_{TSM}$    | 80           | A                |
| $I^2t$ value for fusing ( $t_p=10ms$ )                              | $Pt$         | 36           | A <sup>2</sup> S |
| Critical rate of rise of on-state current ( $I_G=2 \times I_{GT}$ ) | $di/dt$      | I - II - III | 50               |
| Peak gate current                                                   | $I_{GM}$     | 4            | A                |
| Average gate power dissipation                                      | $P_{G(AV)}$  | 1            | 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 |
|----------------------------------------------|---------------------|-----------------------------------------------------------------------|-------------|-------|-----|------|------|
|                                              |                     |                                                                       |             | TW    | SW  | CW   |      |
| Gate trigger current                         | I <sub>GT</sub>     | V <sub>D</sub> =12V,R <sub>L</sub> =30Ω<br>T <sub>j</sub> =25℃, Fig.6 | I - II -III | ≤5    | ≤10 | ≤35  | mA   |
| Gate trigger voltage                         | V <sub>GT</sub>     |                                                                       | I - II -III | ≤1.3  |     |      | V    |
| Non-triggering gate voltage                  | V <sub>GD</sub>     | V <sub>D</sub> =V <sub>DRM</sub> T <sub>j</sub> =125℃                 |             | ≤0.2  |     |      | V    |
| Holding current                              | I <sub>H</sub>      | I <sub>T</sub> =100mA, Fig.6                                          |             | ≤10   | ≤15 | ≤35  | mA   |
| Latching current                             | I <sub>L</sub>      | I <sub>G</sub> =1.2I <sub>GT</sub> ,<br>Fig.6                         | I -III      | ≤10   | ≤25 | ≤50  | mA   |
|                                              |                     |                                                                       | II          | ≤15   | ≤30 | ≤60  |      |
| Critical-rate of rise of commutation voltage | dV <sub>D</sub> /dt | V <sub>D</sub> =67%V <sub>DRM</sub> , T <sub>j</sub> =125℃            |             | ≥20   | ≥40 | ≥400 | V/μs |

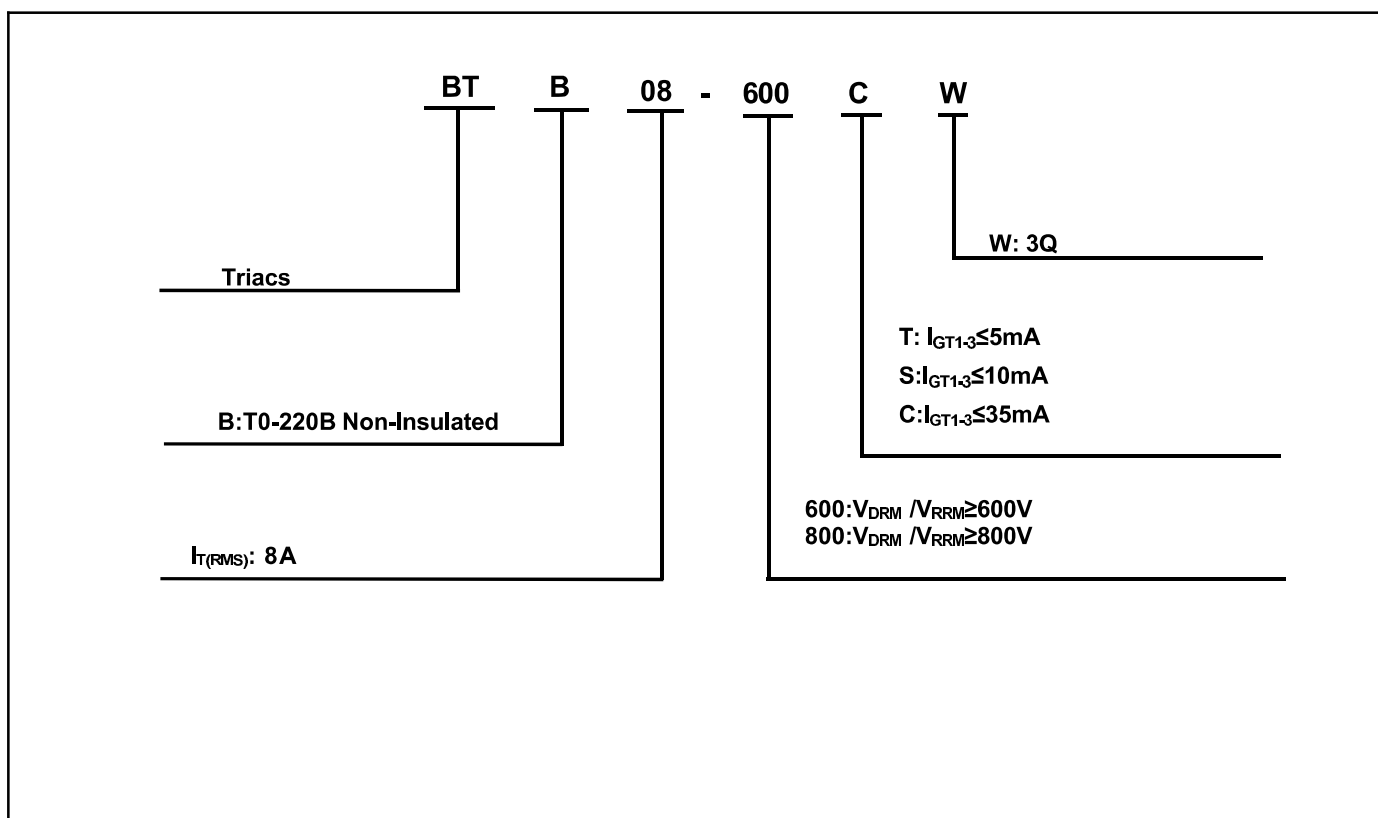
**STATIC CHARACTERISTICS**

|                                   |           |                                    |                   |             |           |           |         |
|-----------------------------------|-----------|------------------------------------|-------------------|-------------|-----------|-----------|---------|
| On-state Voltage                  | $V_{TM}$  | $I_{TM}=11A, t_p=380\mu s$ , Fig.4 |                   | $\leq 1.55$ |           |           | V       |
| Repetitive Peak Off-State Current | $I_{DRM}$ | $V_D=V_{DRM}=V_{RRM}$              | $T_j=25^\circ C$  | $\leq 10$   | $\leq 10$ | $\leq 10$ | $\mu A$ |
| Repetitive Peak Reverse Current   | $I_{RRM}$ |                                    | $T_j=125^\circ C$ | $\leq 1$    | $\leq 1$  | $\leq 1$  | mA      |

**THERMAL RESISTANCES**

|                    |               |                     |      |     |              |
|--------------------|---------------|---------------------|------|-----|--------------|
| Thermal resistance | $R_{th(j-c)}$ | Junction to case    | TYP. | 1.6 | $^\circ C/W$ |
|                    | $R_{th(j-a)}$ | Junction to ambient | TYP. | 60  | $^\circ C/W$ |

**Ordering Information**



**Typical Characteristics**

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

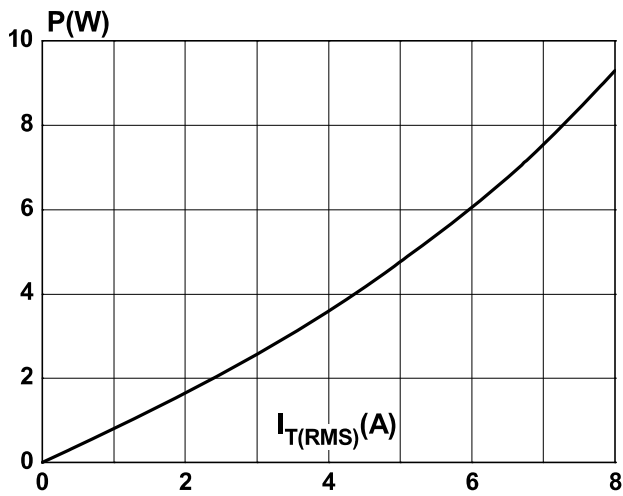


FIG.2: RMS on-state current versus case temperature (full cycle)

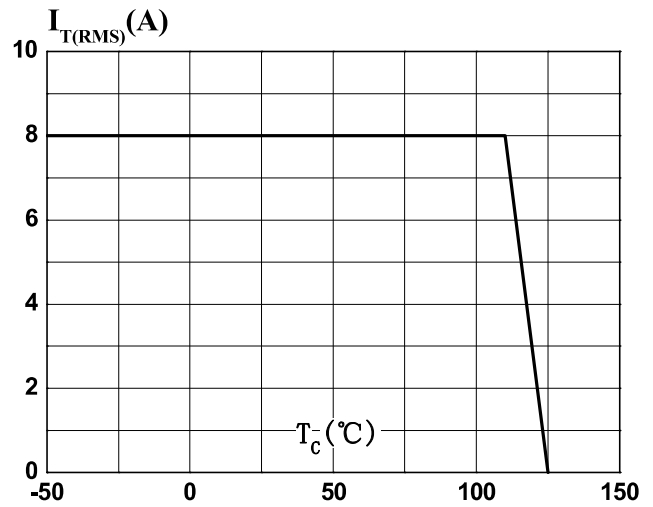


FIG.3: Surge peak on-state current versus number of cycles

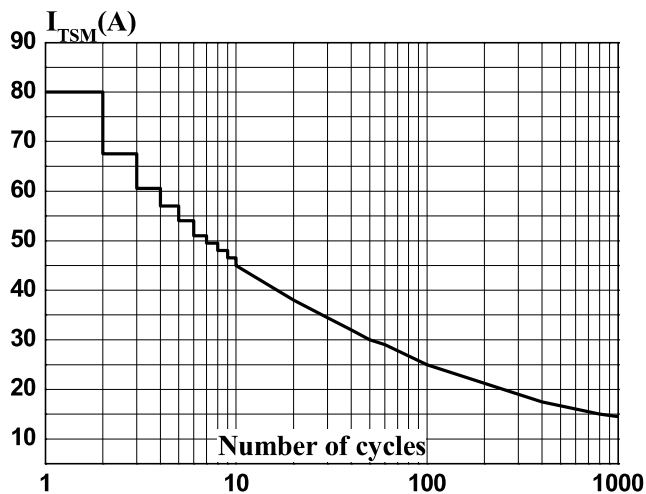


FIG.4: On-state characteristics (maximum values)

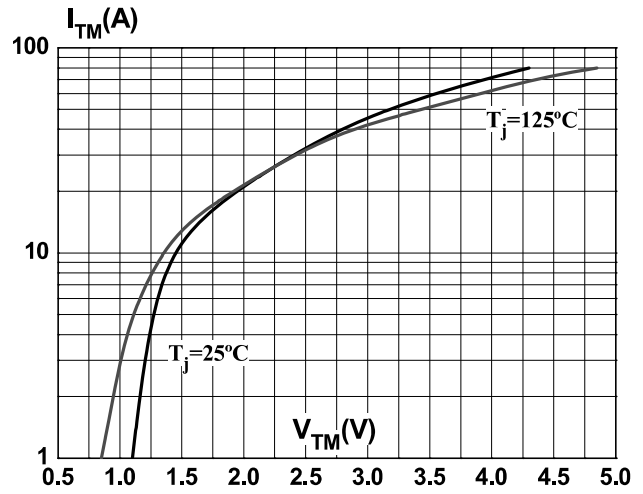


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10ms$

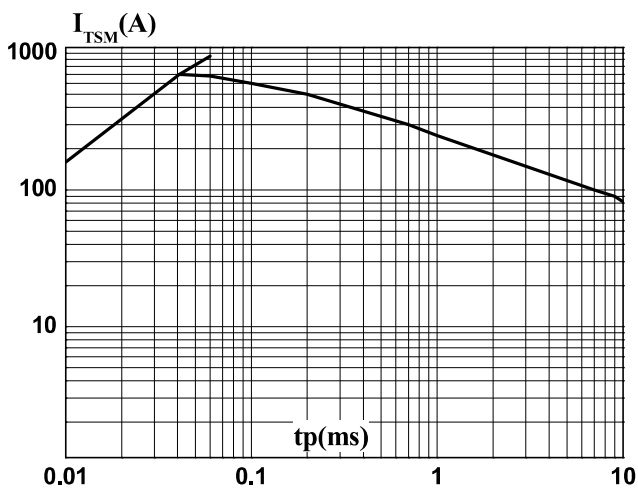
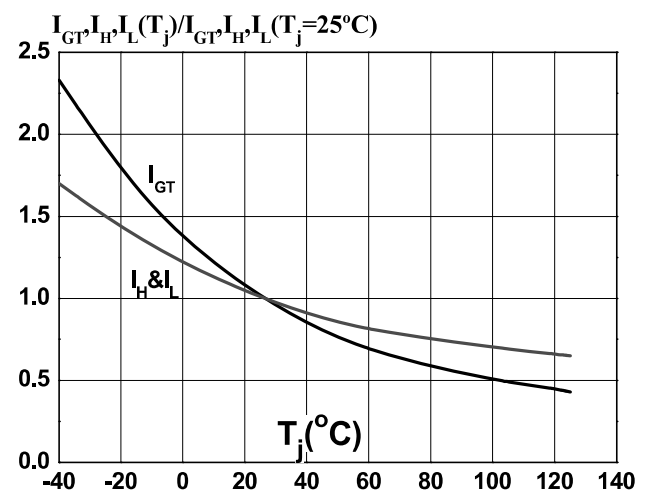
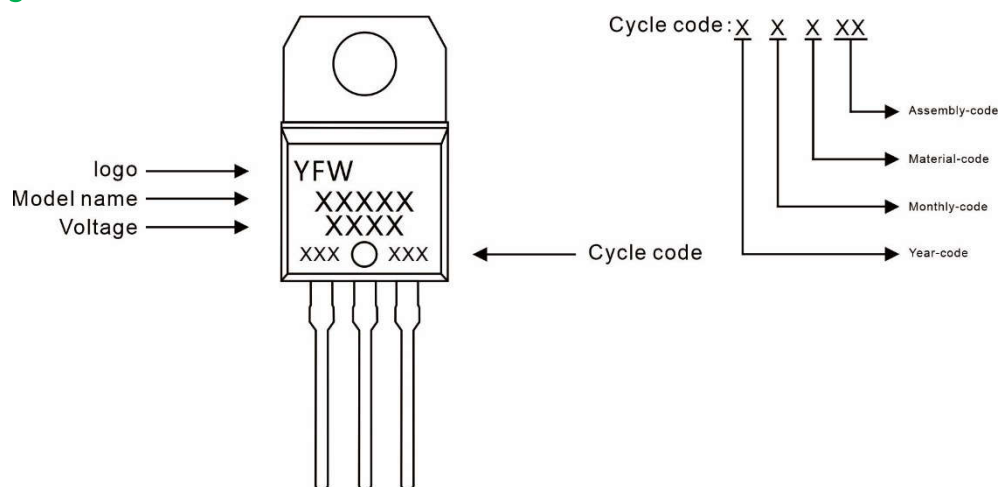


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



## Marking Diagram



## Ordering information

| Model name | Package | Unit Weight   | Base Quantity | Packing Quantity           |
|------------|---------|---------------|---------------|----------------------------|
| BTB08      | TO-220B | 0.07oz(1.96g) | 50pcs/tube    | 1000PCS/Box 5000PCS/Carton |

## Package Dimensions

### TO-220B(Non Insulated)

| (Non Insulated) |        | Millimeter |       | Inches |       |
|-----------------|--------|------------|-------|--------|-------|
|                 |        | Min.       | Max.  | Min.   | Max.  |
|                 | Symbol |            |       |        |       |
|                 | A      | 9.80       | 10.40 | 0.386  | 0.409 |
|                 | B      | 2.65       | 3.10  | 0.104  | 0.122 |
|                 | C      | 14.80      | 16.10 | 0.583  | 0.634 |
|                 | D      | 0.70       | 0.92  | 0.028  | 0.036 |
|                 | D1     | 1.18       | 1.42  | 0.047  | 0.056 |
|                 | E      | 2.40       | 2.70  | 0.095  | 0.106 |
|                 | L      | 2.80       | 4.20  | 0.11   | 0.17  |
|                 | L1     | 13.05      | 13.60 | 0.514  | 0.535 |
|                 | H      | 5.85       | 6.82  | 0.23   | 0.27  |
|                 | K      | 2.35       | 2.75  | 0.093  | 0.108 |
|                 | T      | 4.38       | 4.61  | 0.172  | 0.181 |
|                 | T1     | 1.15       | 1.36  | 0.045  | 0.054 |
|                 | T2     | 0.35       | 0.65  | 0.014  | 0.026 |
|                 | ΦR     | 3.75       | 3.95  | 0.148  | 0.156 |

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