

**6A 4Quadrants TRIACs**

**Product Summary**

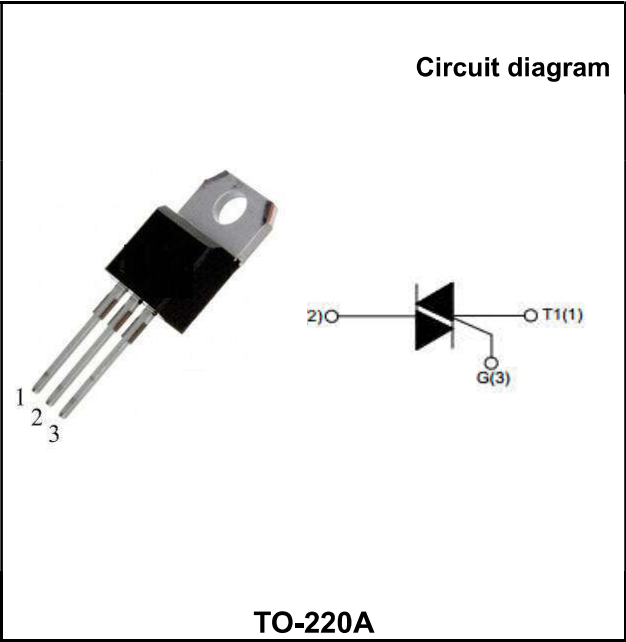
| Symbol            | Value   | Unit |
|-------------------|---------|------|
| $I_{T(AV)}$       | 6       | A    |
| $V_{DRM} V_{RRM}$ | 600/800 | V    |
| $V_{TM}$          | 1.55    | V    |

**Features**

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

**Application**

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



**Order Information**

| Part Number | Package | Marking     | packing | packing Quantity |
|-------------|---------|-------------|---------|------------------|
| BTA06A      | TO-220A | BTA06A XXXX | Box     | 1000PCS/Box      |

**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                                                  | $I_{T(RMS)}$ | 6         | A                |
| Non repetitive surge peak on-state current (full cycle, F=50Hz)       | $I_{TSM}$    | 60        | A                |
| $I^2t$ value for fusing (tp=10ms)                                     | $I^2t$       | 21        | A <sup>2</sup> s |
| Critical rate of rise of on-state current ( $I_G = 2 \times I_{GT}$ ) | $di/dt$      | 50        | A/us             |
| 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 |
|----------------------------------------------|-----------|----------------------------------------------------------------|------------|-----------|-----------|------|
|                                              |           |                                                                | E          | D         | C         |      |
| Gate trigger current                         | $I_{GT}$  | $V_D=12V$ ,<br>$R_L=30\Omega$ ,<br>$T_j=25^\circ C$ ,<br>Fig.6 | $\leq 5$   | $\leq 10$ | $\leq 25$ | mA   |
|                                              |           |                                                                | $\leq 10$  | $\leq 25$ | $\leq 50$ |      |
| Gate trigger voltage                         | $V_{GT}$  | I - II -III-IV                                                 | $\leq 1.3$ |           |           | V    |
| Gate non-trigger voltage                     | $V_{GD}$  | $V_D=V_{DRM}$ , $T_j=125^\circ C$                              | $\geq 0.2$ |           |           | V    |
| Holding current                              | $I_H$     | $I_T=100mA$ , Fig. 6                                           | $\leq 15$  | $\leq 15$ | $\leq 30$ | mA   |
| latching current                             | $I_L$     | $I_G=1.2I_{GT}$ ,<br>Fig. 6                                    | $\leq 10$  | $\leq 20$ | $\leq 40$ | mA   |
|                                              |           |                                                                | $\leq 20$  | $\leq 40$ | $\leq 50$ | mA   |
| Critical-rate of rise of commutation voltage | $dV_D/dt$ | $V_D=2/3V_{DRM}$ , $T_j=125^\circ C$                           | $\geq 10$  | $\geq 20$ | $\geq 50$ | V/us |

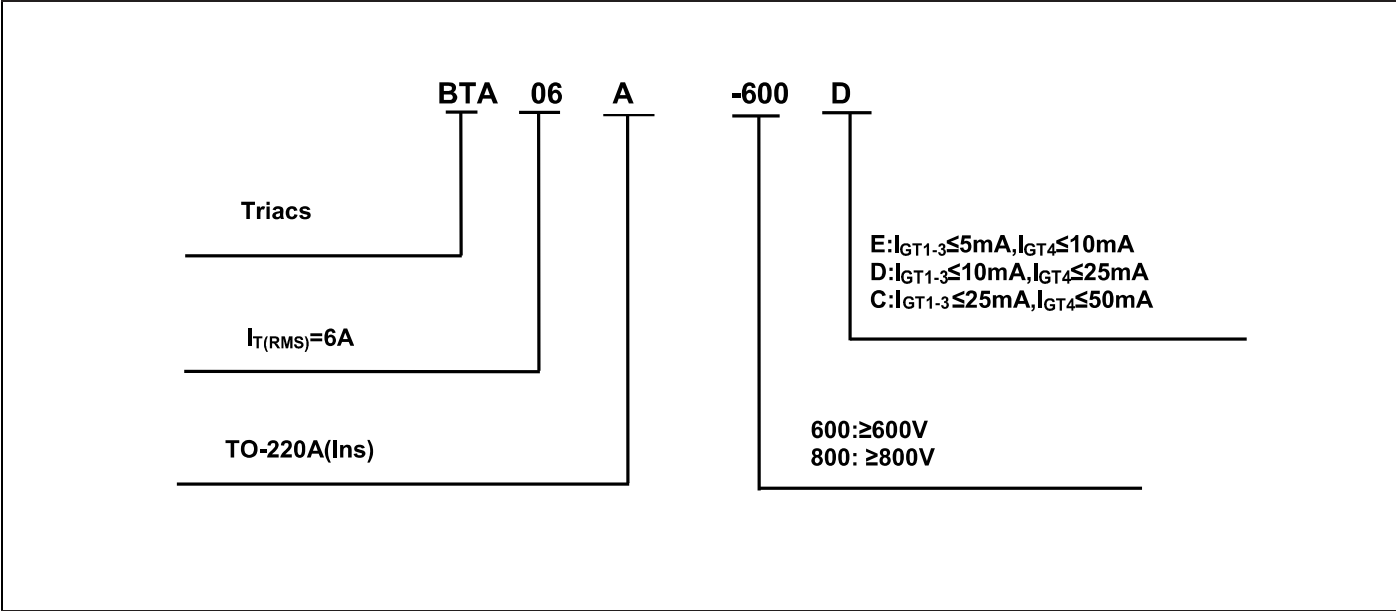
**STATIC CHARACTERISTICS**

|                                   |                        |                                                                                             |                             |              |            |            |           |
|-----------------------------------|------------------------|---------------------------------------------------------------------------------------------|-----------------------------|--------------|------------|------------|-----------|
| Forward "on" voltage              | <b>V<sub>TM</sub></b>  | <b>I<sub>TM</sub></b> =8.5A,tp=380us,Fig.4                                                  |                             | <b>≤1.55</b> |            |            | <b>V</b>  |
| Repetitive Peak Off-State Current | <b>I<sub>DRM</sub></b> | <b>V<sub>D</sub></b> = <b>V<sub>DRM</sub></b> <b>V<sub>R</sub></b> = <b>V<sub>RRM</sub></b> | <b>T<sub>J</sub></b> =25°C  | <b>≤10</b>   | <b>≤10</b> | <b>≤10</b> | <b>uA</b> |
| Repetitive Peak Reverse Current   | <b>I<sub>RRM</sub></b> |                                                                                             | <b>T<sub>J</sub></b> =125°C | <b>≤1</b>    | <b>≤1</b>  | <b>≤1</b>  | <b>mA</b> |

**THERMAL RESISTANCES**

|                    |               |                     |      |     |              |
|--------------------|---------------|---------------------|------|-----|--------------|
| Thermal resistance | $R_{th(j-c)}$ | Junction to case    | TYP. | 2.7 | $^\circ C/W$ |
|                    | $R_{th(j-a)}$ | Junction to ambient | TYP. | 60  | $^\circ C/W$ |

**Ordering Information**



Typical Characteristics

FIG1 Maximum power dissipation versus RMS on-state current

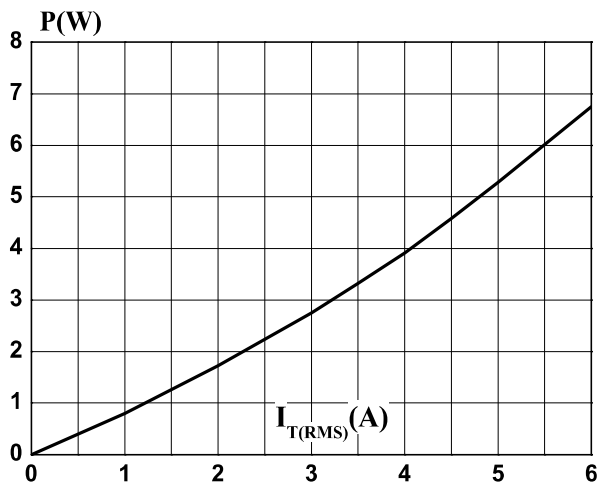


FIG2 RMS on-state current versus case temperature

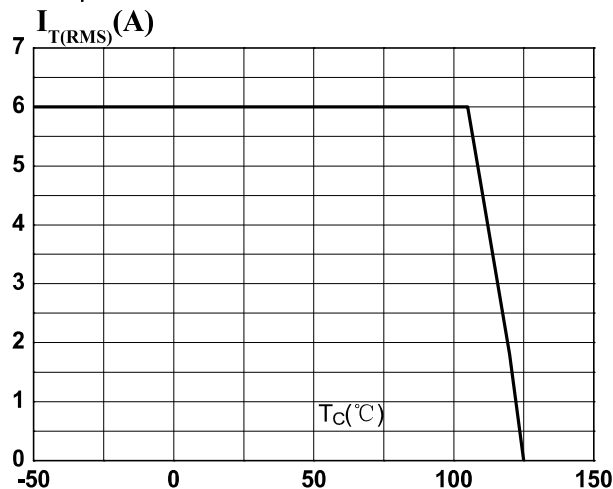


FIG3 Surge peak on-state current versus number of cycles

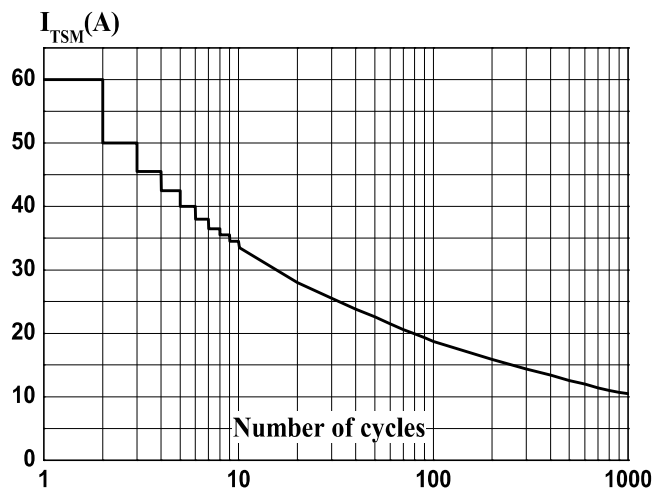


FIG4 On-state characteristics (maximum values)

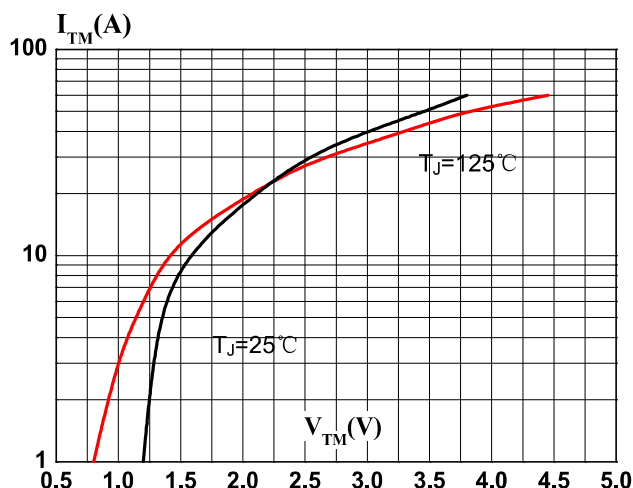


FIG5 Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 20ms$ , and corresponding value of  $I^2t$  ( $dI/dt < 100A/\mu s$ )

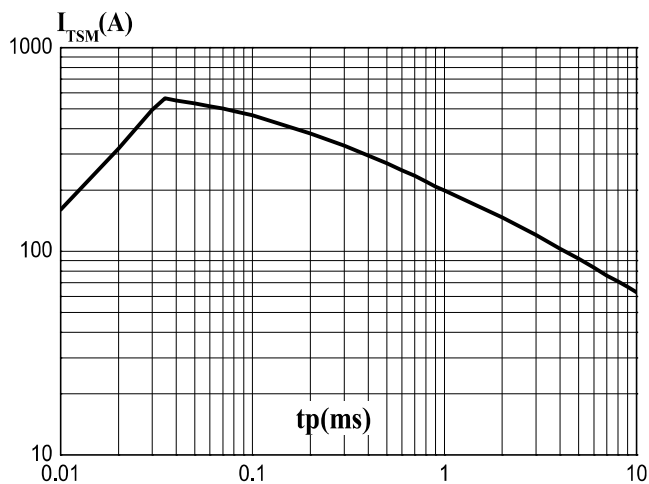
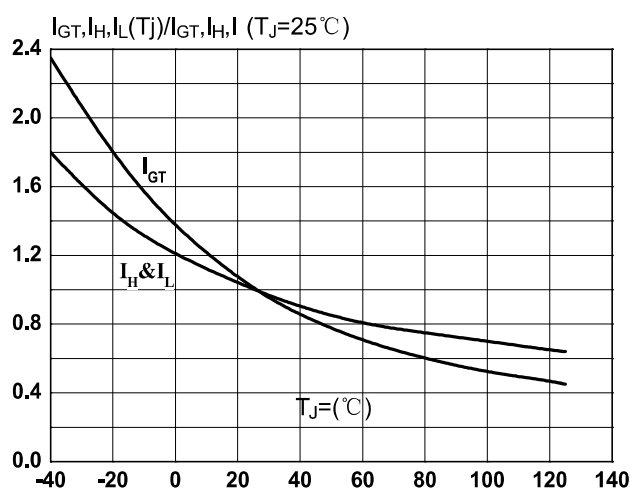
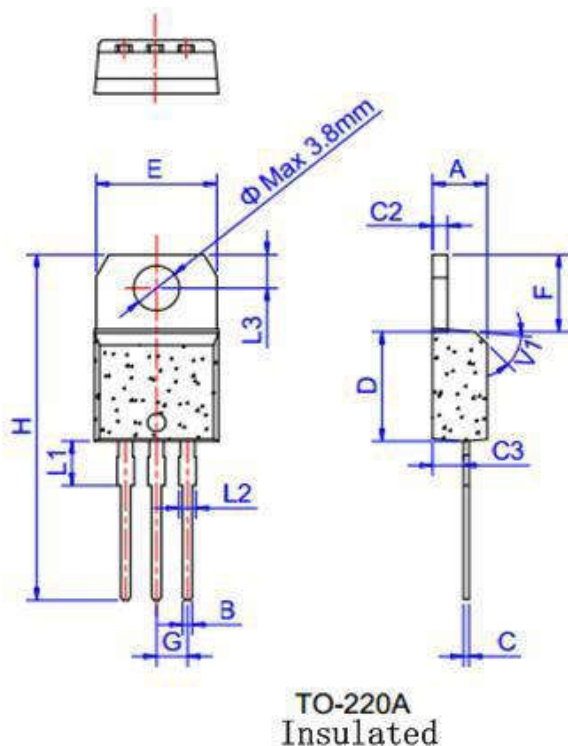


FIG6 Relative variations of gate trigger current, holding current and latching current versus junction temperature



Package Information

TO-220A(Ins)



| Ref. | Dimensions  |      |      |        |       |       |
|------|-------------|------|------|--------|-------|-------|
|      | Millimeters |      |      | Inches |       |       |
|      | Min.        | Typ. | Max. | Min.   | Typ.  | Max.  |
| A    | 4.40        |      | 4.60 | 0.173  |       | 0.181 |
| B    | 0.61        |      | 0.88 | 0.024  |       | 0.035 |
| C    | 0.46        |      | 0.70 | 0.018  |       | 0.028 |
| C2   | 1.21        |      | 1.32 | 0.048  |       | 0.052 |
| C3   | 2.40        |      | 2.72 | 0.094  |       | 0.107 |
| D    | 8.60        |      | 9.70 | 0.339  |       | 0.382 |
| E    | 9.80        |      | 10.4 | 0.386  |       | 0.409 |
| F    | 6.55        |      | 6.95 | 0.258  |       | 0.274 |
| G    |             | 2.54 |      |        | 0.1   |       |
| H    | 28.0        |      | 29.8 | 1.102  |       | 1.173 |
| L1   |             | 3.75 |      |        | 0.148 |       |
| L2   | 1.14        |      | 1.70 | 0.045  |       | 0.067 |
| L3   | 2.65        |      | 2.95 | 0.104  |       | 0.116 |
| V1   |             | 45°  |      |        | 45°   |       |