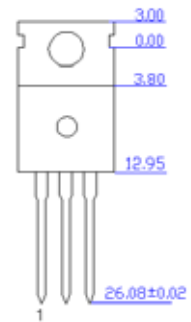


**STANDARD**

Passivated sensitive gate triacs in plastic envelope, intended for use in general purpose bi-directional switching and phase control applications, where high sensitivity is required in all four quadrants.

**△ ABSOLUTE MAXIMUM RATINGS (TA=25°C)**

| Characteristic                       | Symbol     | Rating  | Unit |
|--------------------------------------|------------|---------|------|
| Repetitive Peak off-state voltage    | $V_{DRM}$  | 700     | V    |
| RMS on-state current                 | $I_T(RMS)$ | 4       | A    |
| Non-repetitive peak on-state current | $I_{TSM}$  | 40      | A    |
| Peak gate power                      | $P_{GM}$   | 5       | W    |
| Peak gate current                    | $I_{GM}$   | 2       | A    |
| Junction Temperature                 | $T_J$      | 125     |      |
| Storage Temperature                  | $T_{STG}$  | -40-150 |      |

**TO-220AB**


1.T1 2.T2 3.G

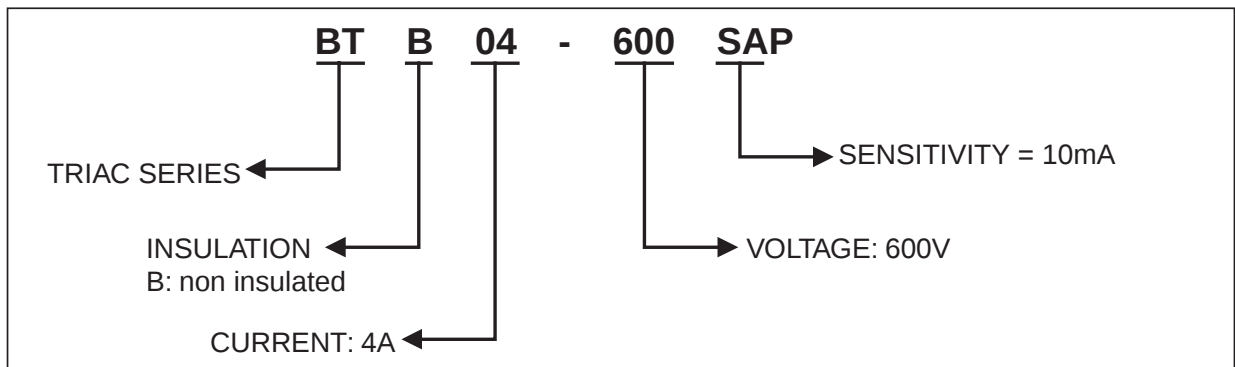
**△ ELECTRICAL CHARACTERISTICS (TA=25°C)**

| Characteristic                    | Symbol    | Test Conditions                               | Min | Typ | Max | Unit |
|-----------------------------------|-----------|-----------------------------------------------|-----|-----|-----|------|
| Repetitive Peak off-state voltage | $V_{DRM}$ |                                               | 700 |     |     | V    |
| Gate trigger current              | $I_{GT}$  | $V_D=12V; R_L=33\Omega$ T2+ G+                |     | 2.5 | 10  | mA   |
|                                   |           | $V_D=12V; R_L=33\Omega$ T2+ G-                |     | 4.0 | 10  | mA   |
|                                   |           | $V_D=12V; R_L=33\Omega$ T2- G+                |     | 5.0 | 10  | mA   |
|                                   |           | $V_D=12V; R_L=33\Omega$ T2- G-                |     | 11  | 25  | mA   |
| Base-Emitter Saturation Voltage   | $I_L$     | $I_G=1.2I_{GT}$                               |     |     | 40  | mA   |
| Gate trigger voltage              | $V_{GT}$  | $V_D=12V; R_L=33\Omega$                       |     |     | 1.5 | V    |
| Holding current                   | $I_H$     | $I_T=100mA$ gate open                         |     |     | 25  | mA   |
| Off-state leakage current         | $I_D$     | $V_D=V_{DRM(MAX)}; T_J=125^\circ C$           |     | 0.1 | 0.5 | mA   |
| On-state voltage                  | $V_T$     | $I_T=5A$                                      |     | 1.4 | 1.7 | V    |
| Gate controlled turn-on time      | $T_{GT}$  | $V_D=V_{DRM(MAX)}; I_G=40$<br>$dI_G/dt=5A/us$ |     | 2   |     | us   |

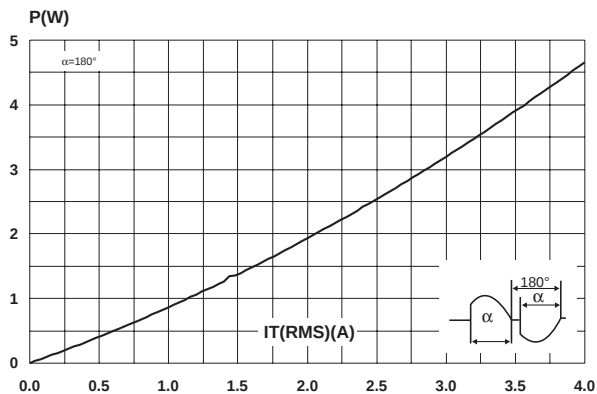
## PRODUCT SELECTOR

| Part Number  | Voltage | Sensitivity | Type     | Package  |
|--------------|---------|-------------|----------|----------|
| BTB04-600SAP | 600V    | 10 mA       | Standard | TO-220AB |

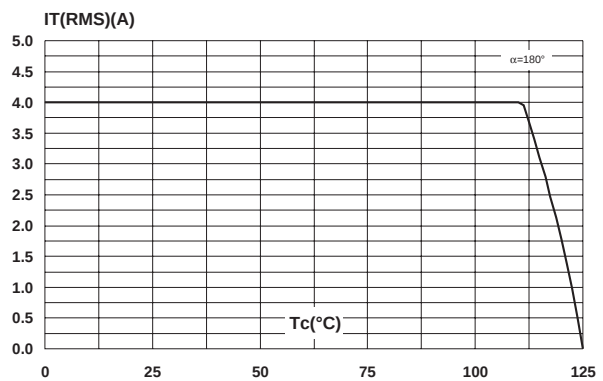
## ORDERING INFORMATION



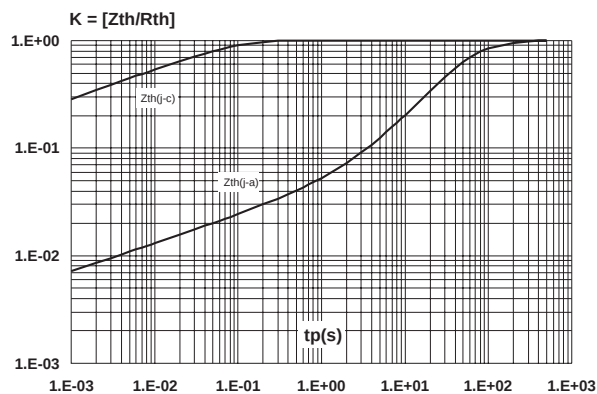
**Fig. 1:** Maximum power dissipation versus RMS on-state current



**Fig. 2:** RMS on-state current versus case temperature.



**Fig. 3:** Relative variation of thermal impedance versus pulse duration.



**Fig. 4:** On-state characteristics (maximum values)

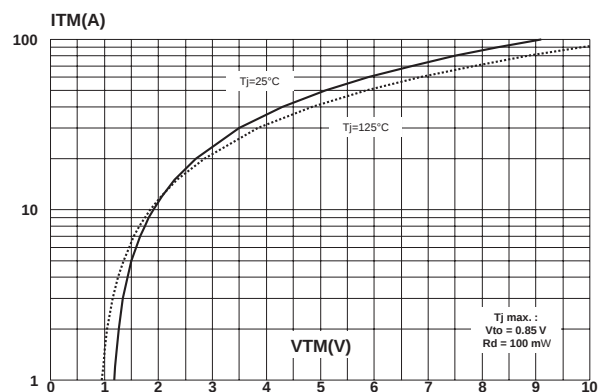


Fig. 5: Surge peak on-state current versus number of cycles.

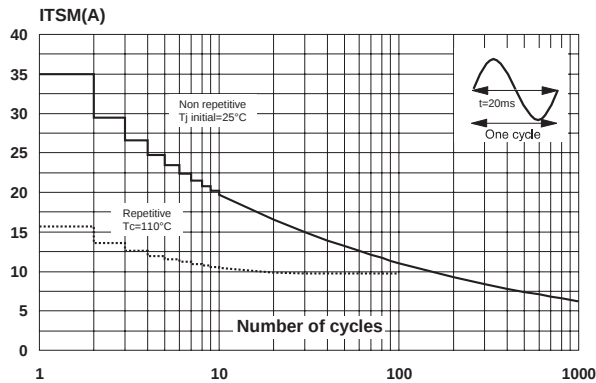


Fig. 6: Non repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$ , and corresponding value of  $I^2t$ .

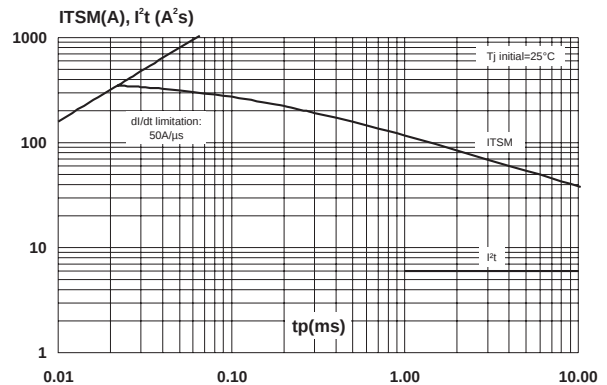


Fig. 7: Relative variation of gate trigger current, holding current and latching current versus junction temperature (typical values).

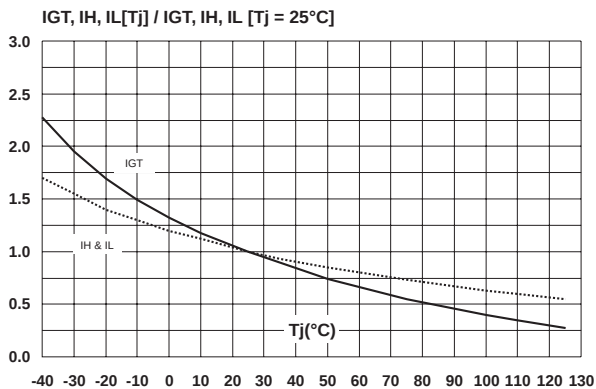


Fig. 8: Relative variation of critical rate of decrease of main current versus reapplied  $dV/dt$  (typical values).

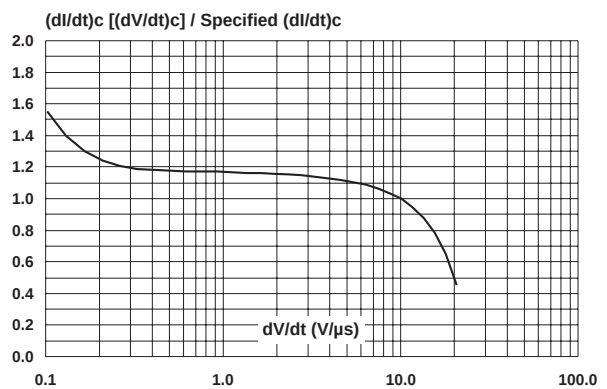


Fig. 9: Relative variation of critical rate of decrease of main current versus junction temperature.

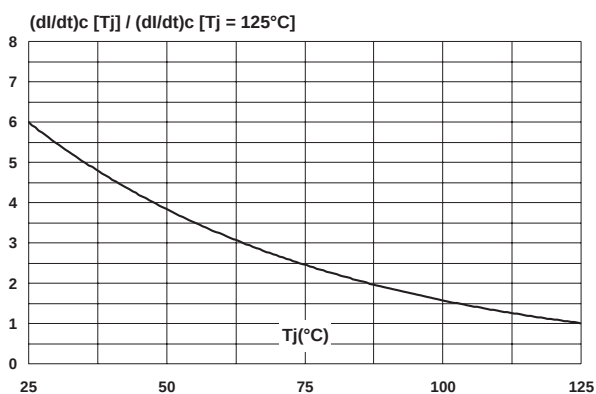
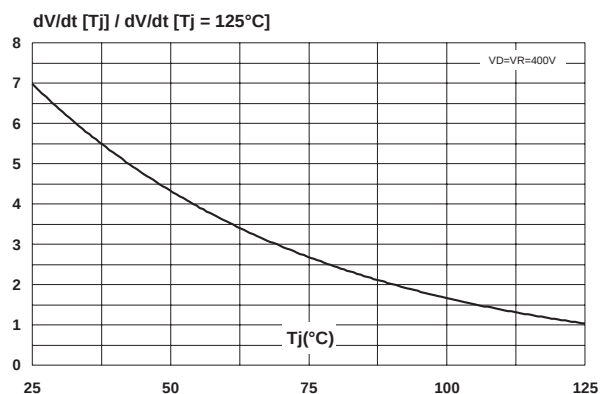


Fig. 10: Relative variation of static  $dV/dt$  immunity versus junction temperature.



## PACKAGE MECHANICAL DATA

TO-220AB (Plastic)

| REF.  | DIMENSIONS  |       |            |       |
|-------|-------------|-------|------------|-------|
|       | Millimeters |       | Inches     |       |
|       | Min.        | Max.  | Min.       | Max.  |
| A     | 4.40        | 4.60  | 0.173      | 0.181 |
| C     | 1.23        | 1.32  | 0.048      | 0.051 |
| D     | 2.40        | 2.72  | 0.094      | 0.107 |
| E     | 0.49        | 0.70  | 0.019      | 0.027 |
| F     | 0.61        | 0.88  | 0.024      | 0.034 |
| F1    | 1.14        | 1.70  | 0.044      | 0.066 |
| F2    | 1.14        | 1.70  | 0.044      | 0.066 |
| G     | 4.95        | 5.15  | 0.194      | 0.202 |
| G1    | 2.40        | 2.70  | 0.094      | 0.106 |
| H2    | 10          | 10.40 | 0.393      | 0.409 |
| L2    | 16.4 typ.   |       | 0.645 typ. |       |
| L4    | 13          | 14    | 0.511      | 0.551 |
| L5    | 2.65        | 2.95  | 0.104      | 0.116 |
| L6    | 15.25       | 15.75 | 0.600      | 0.620 |
| L7    | 6.20        | 6.60  | 0.244      | 0.259 |
| L9    | 3.50        | 3.93  | 0.137      | 0.154 |
| M     | 2.6 typ.    |       | 0.102 typ. |       |
| Diam. | 3.75        | 3.85  | 0.147      | 0.151 |

### OTHER INFORMATION

| Ordering type | Marking      | Package  | Weight | Base qty | Packing mode |
|---------------|--------------|----------|--------|----------|--------------|
| BTB04-600SAP  | BTB04-600SAP | TO-220AB | 2.3 g  | 50       | Tube         |