

DESCRIPTION:

With high ability to withstand the shock loading of large current, BTA06-600BW series triacs provide high dv/dt rate with strong resistance to electromagnetic interface. With high commutation performances, 3 quadrants products especially recommended for use on inductive load.



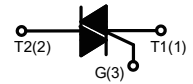
TO-251



TO-220A



TO-220F



MAIN FEATURES

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

ABSOLUTE MAXIMUM RATINGS

| Parameter | | Symbol | Value | Unit |
|---|---|--------------|-----------|------------|
| Storage junction temperature range | | T_{stg} | -40 - 150 | °C |
| Operating junction temperature range | | T_j | -40 - 125 | °C |
| Repetitive peak off-state voltage ($T_j=25^{\circ}C$) | | V_{DRM} | 600/800 | V |
| Repetitive peak reverse voltage ($T_j=25^{\circ}C$) | | V_{RRM} | 600/800 | V |
| RMS on-state current | TO-220A(Ins)/ TO-220F(Ins)/ TO-251 ($T_C=100^{\circ}C$) | $I_{T(RMS)}$ | 6 | A |
| | TO-220A(Non-Ins) ($T_C=105^{\circ}C$) | | | |
| Non repetitive surge peak on-state current (full cycle, $F=50Hz$) | | I_{TSM} | 60 | A |
| I^2t value for fusing ($t_p=10ms$) | | I^2t | 18 | A^2s |
| Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$) | I - II - III | di/dt | 50 | A/ μs |
| | IV | | 10 | |

| | | | |
|--------------------------------|-------------|---|---|
| Peak gate current | I_{GM} | 2 | A |
| Average gate power dissipation | $P_{G(AV)}$ | 1 | W |
| Peak gate power | P_{GM} | 5 | W |

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

| Symbol | Test Condition | Quadrant | | Value | | Unit |
|----------|--|--------------|-----|-------|-----|------------------|
| | | | | C | B | |
| I_{GT} | $V_D=12\text{V } R_L=30\Omega$ | I - II - III | MAX | 25 | 50 | mA |
| | | IV | | 50 | 70 | |
| V_{GT} | | ALL | MAX | 1.5 | | V |
| V_{GD} | $V_D=V_{DRM} T_j=125^{\circ}\text{C}$ $R_L=3.3\text{K}\Omega$ | ALL | MIN | 0.2 | | V |
| I_L | $I_G=1.2I_{GT}$ | I - III - IV | MAX | 50 | 70 | mA |
| | | II | | 60 | 80 | |
| I_H | $I_{TM}=0.2\text{A}$ | | MAX | 40 | 60 | mA |
| dV/dt | $V_D=2/3V_{DRM}$ Gate Open $T_j=125^{\circ}\text{C}$ | | MIN | 200 | 500 | V/ μs |

STATIC CHARACTERISTICS

| Symbol | Parameter | | Value(MAX) | Unit |
|-----------|--|---------------------------|------------|---------------|
| V_{TM} | $I_{TM}=8.5\text{A } t_p=380\mu\text{s}$ | $T_j=25^{\circ}\text{C}$ | 1.5 | V |
| I_{DRM} | $V_D=V_{DRM} V_R=V_{RRM}$ | $T_j=25^{\circ}\text{C}$ | 5 | μA |
| I_{RRM} | | $T_j=125^{\circ}\text{C}$ | 1 | mA |

THERMAL RESISTANCES

| Symbol | Parameter | | Value | Unit |
|---------------|----------------------|----------------------|-------|----------------------|
| $R_{th(j-c)}$ | junction to case(AC) | TO-220A(Ins) | 2.9 | $^{\circ}\text{C/W}$ |
| | | TO-220F(Ins) | | |
| | | TO-220A(Non-Ins) 2.3 | | |
| | | TO-251 | 2.7 | |

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

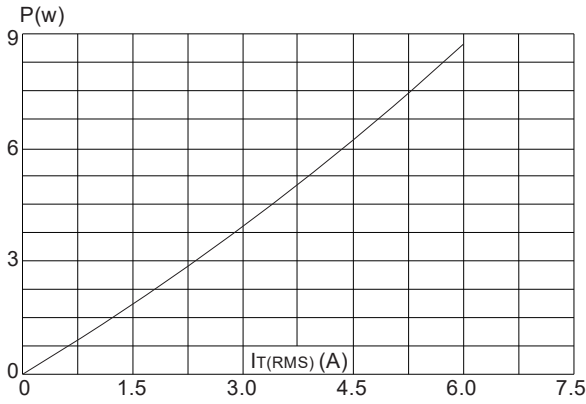


FIG.3: Surge peak on-state current versus number of cycles

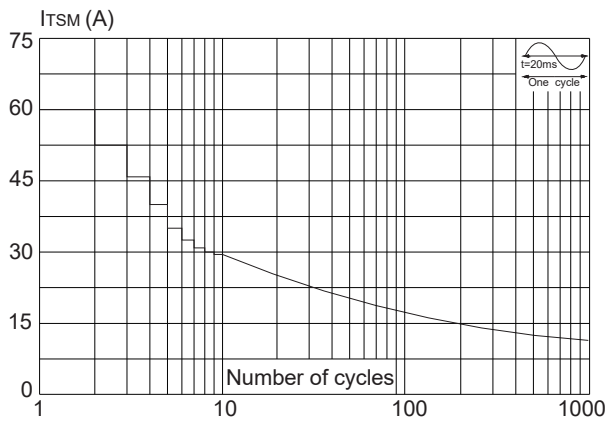


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of I^2t (I - II - III: $di/dt < 50\text{A}/\mu\text{s}$; IV: $di/dt < 10\text{A}/\mu\text{s}$)

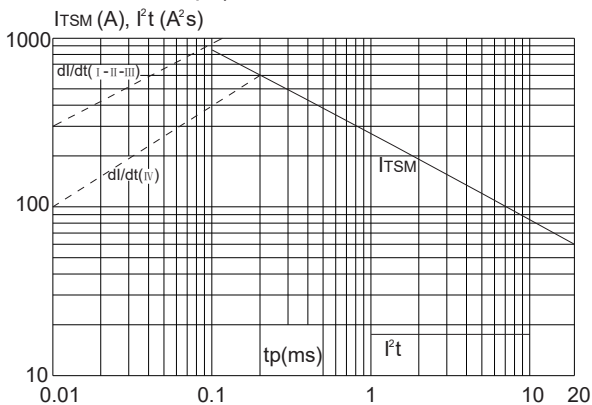


FIG.2: RMS on-state current versus case temperature

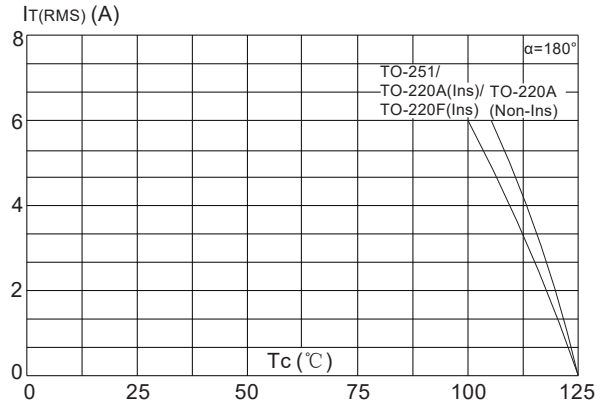


FIG.4: On-state characteristics (maximum values)

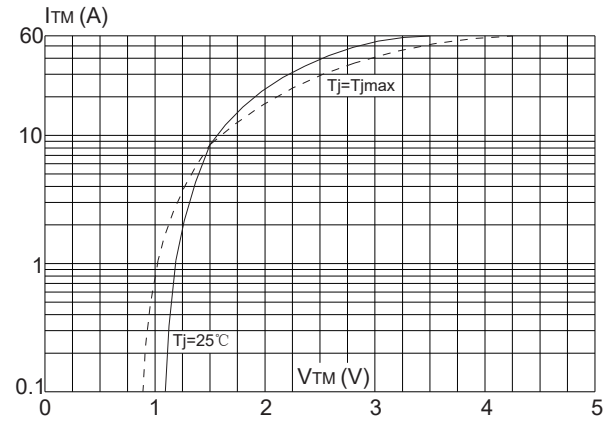


FIG.6: Relative variations of gate trigger current versus junction temperature

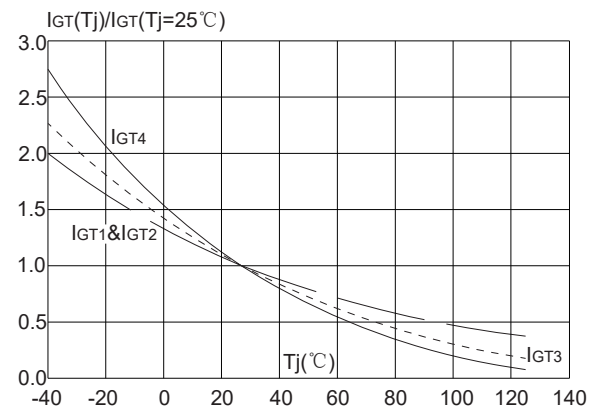


FIG.7: Relative variations of holding current versus junction temperature

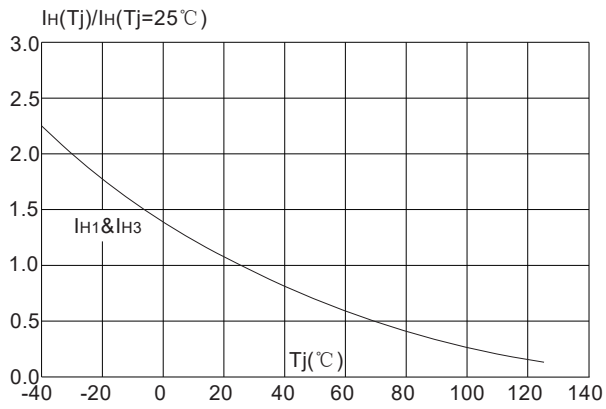


FIG.8: Relative variations of latching current versus junction temperature

