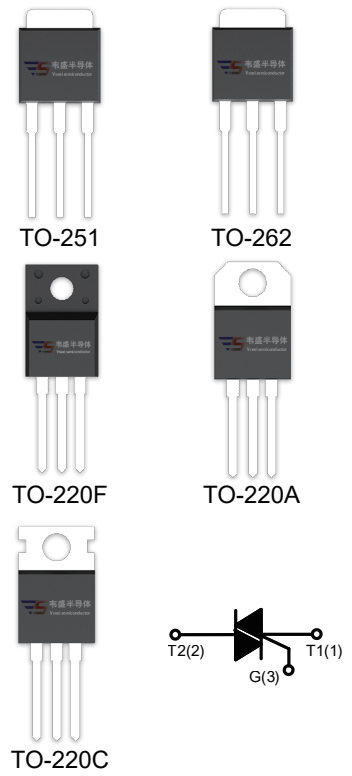


DESCRIPTION:

With high ability to withstand the shock loading of large current, BTB08-600TW 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.


MAIN FEATURES

| Symbol | Value | Unit |
|-------------------|--------------|------|
| $I_{T(RMS)}$ | 8 | A |
| V_{DRM}/V_{RRM} | 600/800/1200 | 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 ($T_j=25^\circ\text{C}$) | | V_{DRM} | 600/800/1200 | V |
| Repetitive peak reverse voltage ($T_j=25^\circ\text{C}$) | | V_{RRM} | 600/800/1200 | V |
| Non repetitive surge peak Off-state voltage | | V_{DSM} | $V_{DRM} + 100$ | V |
| Non repetitive peak reverse voltage | | V_{RSM} | $V_{RRM} + 100$ | V |
| RMS on-state current | TO-251/TO-220C TO-220A(Non-Ins) ($T_c=100^\circ\text{C}$) | $I_{T(RMS)}$ | 8 | A |
| | TO-220A(Ins)/ TO-220F(Ins) ($T_c=95^\circ\text{C}$) | | | |
| | TO-262 ($T_c=90^\circ\text{C}$) | | | |
| Non repetitive surge peak on-state current (full cycle, $F=50\text{Hz}$) | | I_{TSM} | 80 | A |

| | | | |
|--|--------------------|----|------------------|
| I ² t value for fusing (tp=10ms) | I ² t | 32 | A ² s |
| Critical rate of rise of on-state current (I _G =2×I _{GT}) | di/dt | 50 | A/μs |
| Peak gate current | I _{GM} | 4 | A |
| Average gate power dissipation | P _{G(AV)} | 1 | W |
| Peak gate power | P _{GM} | 5 | W |

ELECTRICAL CHARACTERISTICS (T_j=25°C unless otherwise specified)

3 Quadrants

| Symbol | Test Condition | Quadrant | | Value | | | | Unit |
|-----------------|---|--------------|-----|-------|-----|-----|------|------|
| | | | | TW | SW | CW | BW | |
| I _{GT} | V _D =12V R _L =33Ω | I - II - III | MAX | 5 | 10 | 35 | 50 | mA |
| V _{GT} | | I - II - III | MAX | 1.5 | | | | V |
| V _{GD} | V _D =V _{DRM} T _j =125°C R _L =3.3KΩ | I - II - III | MIN | 0.2 | | | | V |
| I _L | I _G =1.2I _{GT} | I - III | MAX | 20 | 25 | 50 | 70 | mA |
| | | II | | 25 | 35 | 70 | 90 | |
| I _H | I _{TM} =100mA | | MAX | 15 | 20 | 40 | 60 | mA |
| dV/dt | V _D =2/3V _{DRM} Gate Open T _j =125°C | | MIN | 50 | 200 | 500 | 1000 | V/μs |

4 Quadrants

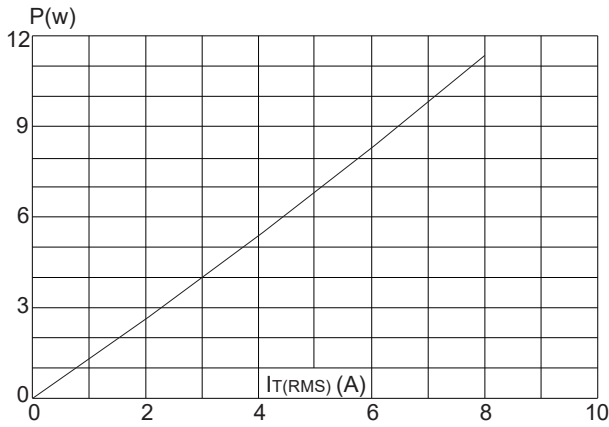
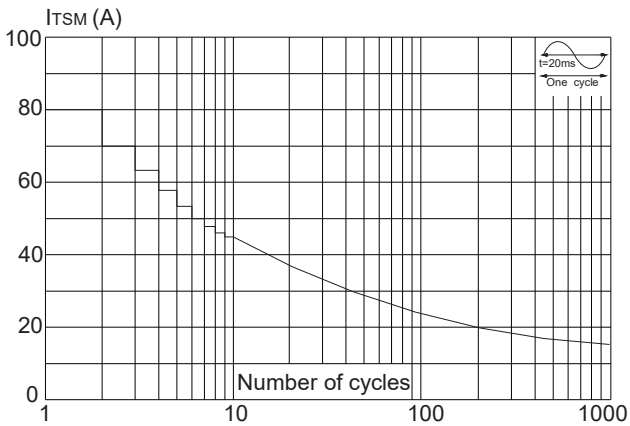
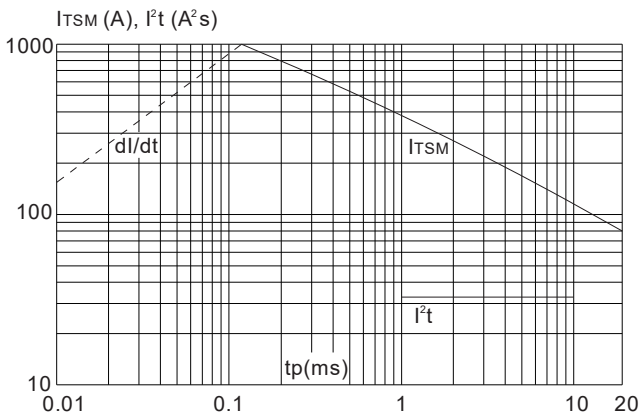
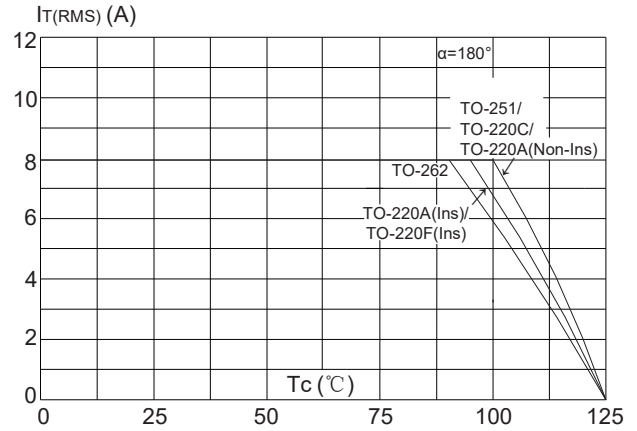
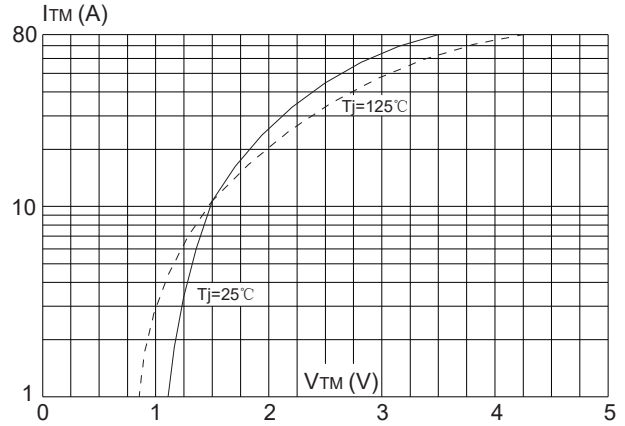
| Symbol | Test Condition | Quadrant | | Value | | Unit |
|-----------------|---|--------------|-----|-------|-----|------|
| | | | | C | B | |
| I _{GT} | V _D =12V R _L =33Ω | I - II - III | MAX | 25 | 50 | mA |
| | | IV | | 50 | 70 | |
| V _{GT} | | ALL | MAX | 1.5 | | V |
| V _{GD} | V _D =V _{DRM} T _j =125°C R _L =3.3KΩ | ALL | MIN | 0.2 | | V |
| I _L | I _G =1.2I _{GT} | I - III - IV | MAX | 50 | 70 | mA |
| | | II | | 70 | 90 | |
| I _H | I _{TM} =200mA | | MAX | 40 | 60 | mA |
| dV/dt | V _D =2/3V _{DRM} Gate Open T _j =125°C | | MIN | 200 | 500 | V/μs |

STATIC CHARACTERISTICS

| Symbol | Parameter | | Value(MAX) | Unit |
|-----------|---------------------------------|---------------------|------------|---------|
| V_{TM} | $I_{TM} = 11A$ $t_p = 380\mu s$ | $T_j = 25^\circ C$ | 1.5 | V |
| I_{DRM} | $V_D = V_{DRM}$ $V_R = V_{RRM}$ | $T_j = 25^\circ C$ | 5 | μA |
| I_{RRM} | | $T_j = 125^\circ C$ | 1 | mA |

THERMAL RESISTANCES

| Symbol | Parameter | | Value | Unit |
|---------------|----------------------|------------------------------|-------|--------------|
| $R_{th(j-c)}$ | junction to case(AC) | TO-251 | 2.1 | $^\circ C/W$ |
| | | TO-220A(Ins) | 2.7 | |
| | | TO-220C/ TO-220A(Non-Ins) | 1.8 | |
| | | TO-220F(Ins) | 2.9 | |
| | | TO-262 | 3.0 | |

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 ($di/dt < 50\text{A}/\mu\text{s}$)

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

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

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