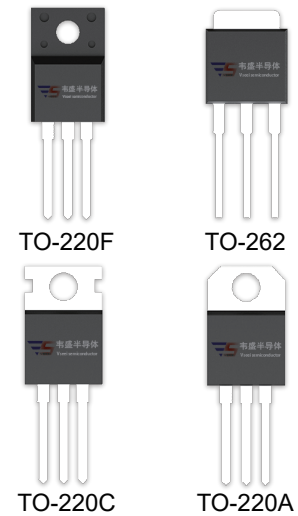


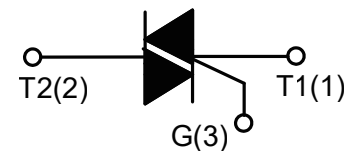
DESCRIPTION:

With high ability to withstand the shock loading of large current, BTA16-800CW series triacs provide high dv/dt rate with strong resistance to electromagnetic interference. With high commutation performances, 3 quadrants products especially recommended for use on inductive load.



MAIN FEATURES

| Symbol | Value | Unit |
|-------------------|--------------|------|
| $I_{T(RMS)}$ | 16 | 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-220A(Ins)/ TO-220F(Ins) ($T_c=75^\circ\text{C}$) | $I_{T(RMS)}$ | 16 | A |
| | TO-220A(Non-Ins)/ TO-220C ($T_c=95^\circ\text{C}$) | | | |
| | TO-262 ($T_c=70^\circ\text{C}$) | | | |
| Non repetitive surge peak on-state current (full cycle, $F=50\text{Hz}$) | | I_{TSM} | 160 | A |

| | | | |
|--|--------------------|-----|------------------|
| I ² t value for fusing (tp=10ms) | I ² t | 128 | 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 |
|-----------------|---|-------------|-----|-------|-----|-----|-----|------|
| | | | | BW | CW | SW | TW | |
| I _{GT} | V _D =12V R _L =33Ω | I - II -III | MAX | 50 | 35 | 10 | 5 | mA |
| V _{GT} | | I - II -III | MAX | 1.3 | | | | 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 | 70 | 50 | 30 | 15 | mA |
| | | II | | 80 | 60 | 40 | 20 | |
| I _H | I _T =100mA | | MAX | 60 | 40 | 25 | 15 | mA |
| dV/dt | V _D =2/3V _{DRM} Gate Open T _j =125°C | | MIN | 1000 | 500 | 200 | 100 | V/μs |

4 Quadrants

| Symbol | Test Condition | Quadrant | | Value | | Unit |
|-----------------|---|-------------|-----|-------|-----|------|
| | | | | B | C | |
| I _{GT} | V _D =12V R _L =33Ω | I - II -III | MAX | 50 | 25 | mA |
| | | IV | | 70 | 50 | |
| 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 | 70 | 50 | mA |
| | | II | | 100 | 80 | |
| I _H | I _T =100mA | | MAX | 60 | 40 | mA |
| dV/dt | V _D =2/3V _{DRM} Gate Open T _j =125°C | | MIN | 500 | 200 | V/μs |

STATIC CHARACTERISTICS

| Symbol | Parameter | | Value(MAX) | | | Unit |
|-----------|-------------------------------|-------------------|------------|-------|--------|---------|
| | | | -600V | -800V | -1200V | |
| V_{TM} | $I_{TM}=22.5A$ $t_p=380\mu s$ | $T_j=25^\circ C$ | 1.5 | | | V |
| I_{DRM} | $V_D=V_{DRM}$ $V_R=V_{RRM}$ | $T_j=25^\circ C$ | 5 | 5 | 10 | μA |
| I_{RRM} | | $T_j=125^\circ C$ | 1 | 1 | 2 | mA |

THERMAL RESISTANCES

| Symbol | Parameter | | Value | Unit |
|---------------|----------------------|------------------------------|-------|--------------|
| $R_{th(j-c)}$ | junction to case(AC) | TO-220A(Ins) | 2.1 | $^\circ C/W$ |
| | | TO-220A(Non-Ins)/ TO-220C | 1.2 | |
| | | TO-220F(Ins) | 2.3 | |
| | | TO-262 | 2.5 | |

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

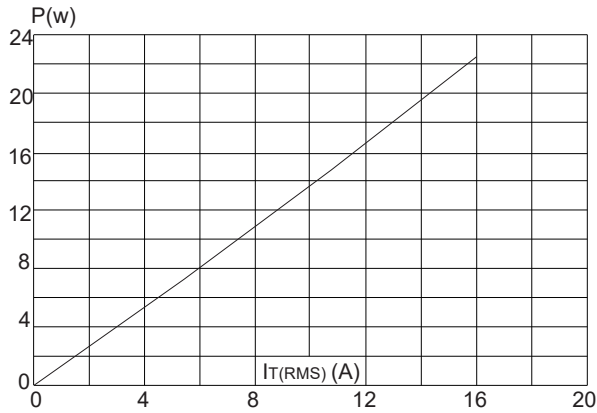


FIG.3: Surge peak on-state current versus number of cycles

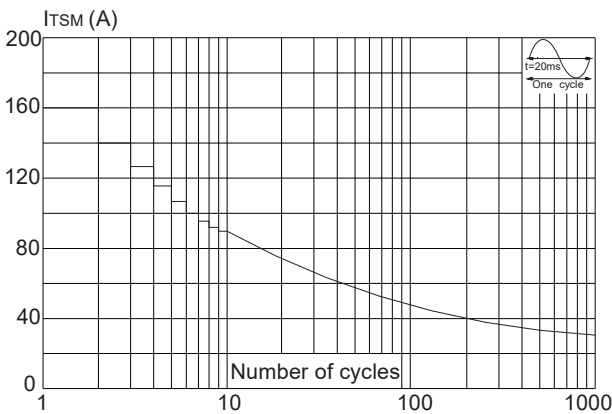


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20ms$, and corresponding value of I^2t ($di/dt < 50A/\mu s$)

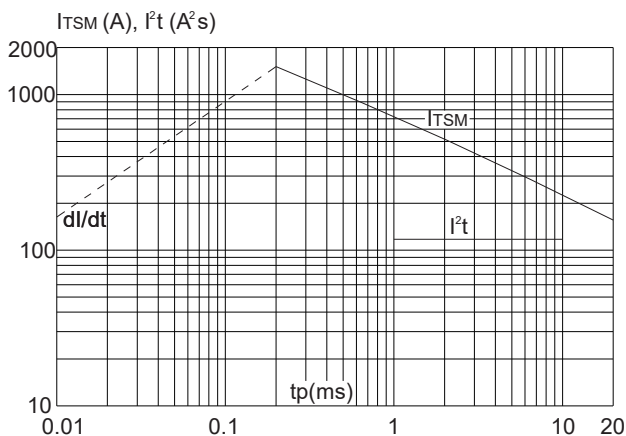


FIG.2: RMS on-state current versus case temperature

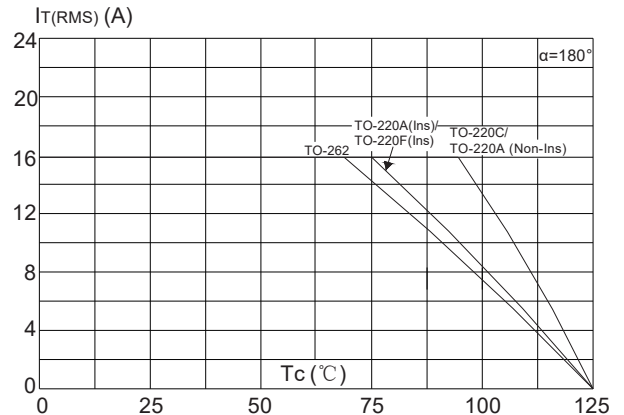


FIG.4: On-state characteristics (maximum values)

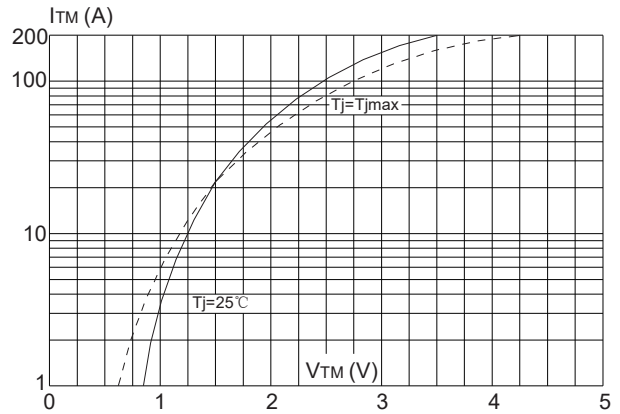


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

