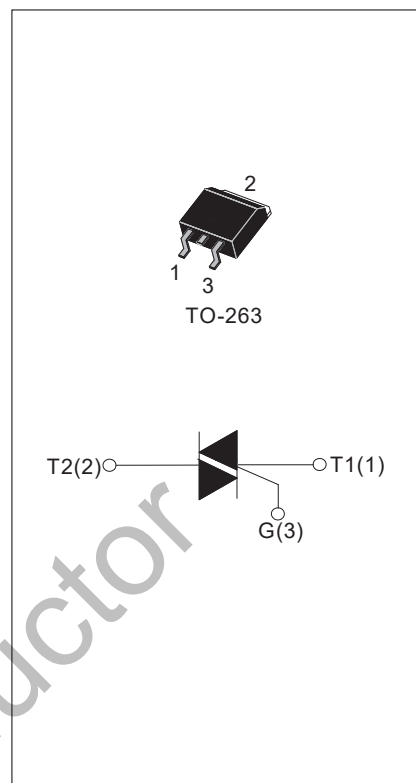


**DESCRIPTION:**

With high ability to withstand the shock loading of large current, BTB08E 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 and 800 and 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 - 150       | °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-263<br>( $T_C=90^{\circ}\text{C}$ ) | $I_{T(RMS)}$ | 8               | A    |

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

|                                                                            |                    |    |                        |
|----------------------------------------------------------------------------|--------------------|----|------------------------|
| Non repetitive surge peak on-state current (full cycle, $F=50\text{Hz}$ )  | $I_{\text{TSM}}$   | 80 | A                      |
| $I^2t$ value for fusing ( $t_p=10\text{ms}$ )                              | $I^2t$             | 32 | $\text{A}^2\text{s}$   |
| Critical rate of rise of on-state current ( $I_G=2 \times I_{\text{GT}}$ ) | $di/dt$            | 50 | $\text{A}/\mu\text{s}$ |
| Peak gate current                                                          | $I_{\text{GM}}$    | 4  | A                      |
| Average gate power dissipation                                             | $P_{\text{G(AV)}}$ | 1  | W                      |
| Peak gate power                                                            | $P_{\text{GM}}$    | 5  | W                      |

**3 Quadrants**

| Symbol          | Test Condition                                                            | Quadrant     |     | Value |     |     |      | Unit                   |
|-----------------|---------------------------------------------------------------------------|--------------|-----|-------|-----|-----|------|------------------------|
|                 |                                                                           |              |     | 05    | 10  | 35  | 50   |                        |
| $I_{\text{GT}}$ | $V_D=12\text{V}$ $R_L=33\Omega$                                           | I - II - III | MAX | 5     | 10  | 35  | 50   | mA                     |
| $V_{\text{GT}}$ |                                                                           | I - II - III | MAX | 1.5   |     |     |      | V                      |
| $V_{\text{GD}}$ | $V_D=V_{\text{DRM}}$ $T_j=125^{\circ}\text{C}$<br>$R_L=3.3\text{K}\Omega$ | I - II - III | MIN | 0.2   |     |     |      | V                      |
| $I_L$           | $I_G=1.2I_{\text{GT}}$                                                    | I - III      | MAX | 20    | 25  | 50  | 70   | mA                     |
|                 |                                                                           | II           |     | 25    | 35  | 70  | 90   |                        |
| $I_H$           | $I_{\text{TM}}=100\text{mA}$                                              |              | MAX | 15    | 20  | 40  | 60   | mA                     |
| $dV/dt$         | $V_D=2/3V_{\text{DRM}}$ Gate Open $T_j=125^{\circ}\text{C}$               |              | MIN | 50    | 200 | 500 | 1000 | $\text{V}/\mu\text{s}$ |

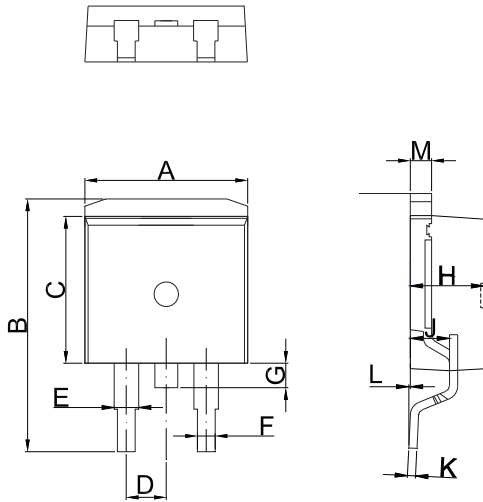
**STATIC CHARACTERISTICS**

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

**THERMAL RESISTANCES**

| Symbol               | Parameter            |        | Value | Unit                        |
|----------------------|----------------------|--------|-------|-----------------------------|
| $R_{\text{th(j-c)}}$ | junction to case(AC) | TO-263 | 3.0   | $^{\circ}\text{C}/\text{W}$ |

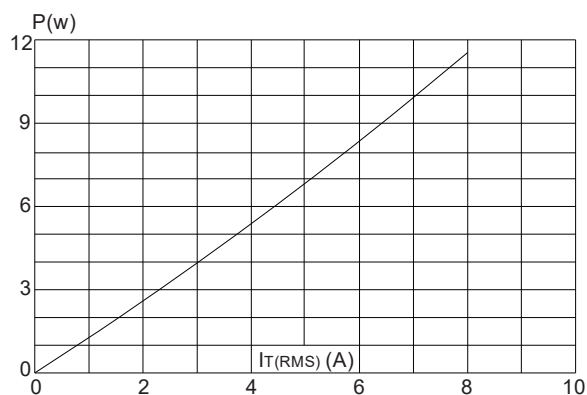
### PACKAGE MECHANICAL DATA



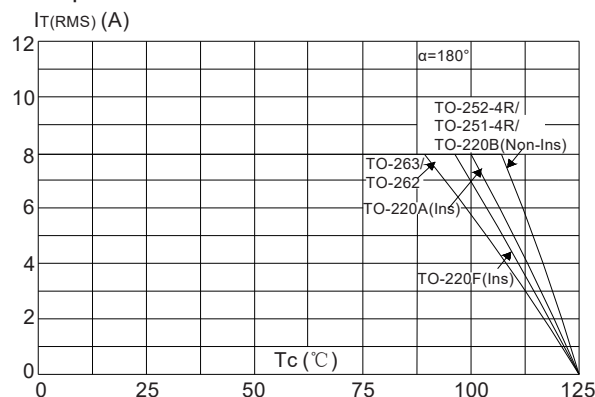
TO-263

| Ref. | Dimensions  |      |       |        |       |       |
|------|-------------|------|-------|--------|-------|-------|
|      | Millimeters |      |       | Inches |       |       |
|      | Min.        | Typ. | Max.  | Min.   | Typ.  | Max.  |
| A    | 9.90        |      | 10.20 | 0.390  |       | 0.402 |
| B    | 14.70       |      | 15.80 | 0.579  |       | 0.622 |
| C    | 9.4         |      | 9.6   | 0.37   |       | 0.378 |
| D    |             | 2.54 |       |        | 0.100 |       |
| E    | 1.20        |      | 1.40  | 0.047  |       | 0.055 |
| F    | 0.75        |      | 0.85  | 0.029  |       | 0.033 |
| G    |             |      | 1.75  |        |       | 0.069 |
| H    | 4.40        |      | 4.70  | 0.173  |       | 0.185 |
| J    | 2.30        |      | 2.70  | 0.091  |       | 0.106 |
| K    | 0.38        |      | 0.55  | 0.015  |       | 0.022 |
| L    | 0           | 0.10 | 0.25  | 0      | 0.004 | 0.010 |
| M    | 1.25        |      | 1.35  | 0.049  |       | 0.053 |

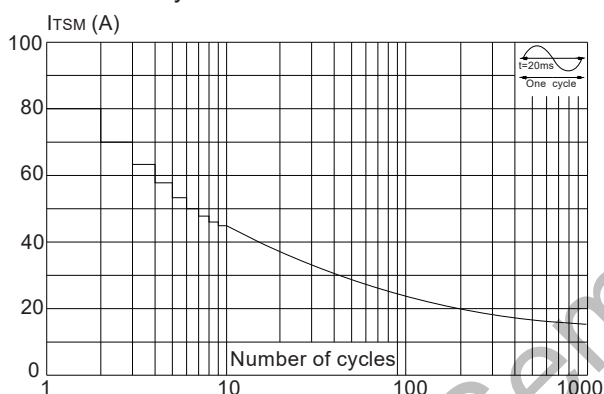
**FIG.1:** Maximum power dissipation versus RMS on-state current



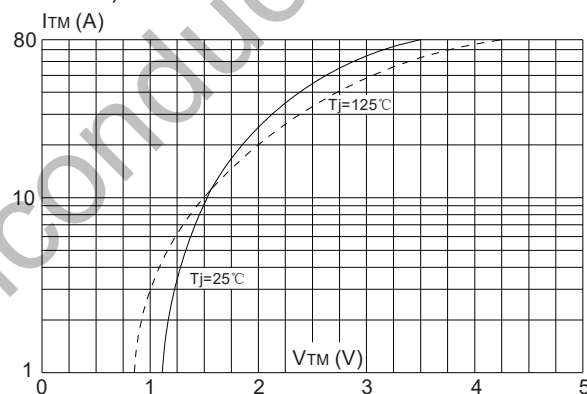
**FIG.2:** RMS on-state current versus case temperature



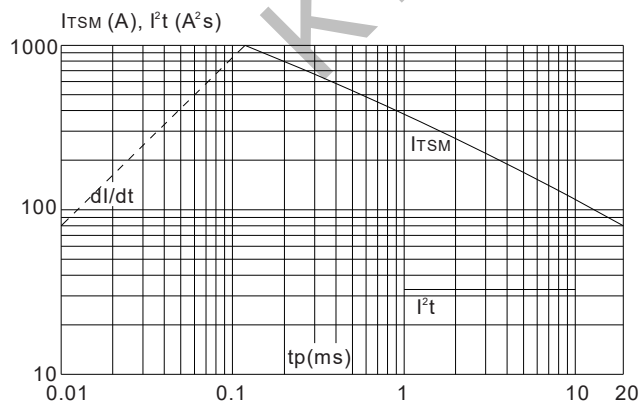
**FIG.3:** Surge peak on-state current versus number of cycles



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



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

