



BTB08A

Preliminary

TRIAC

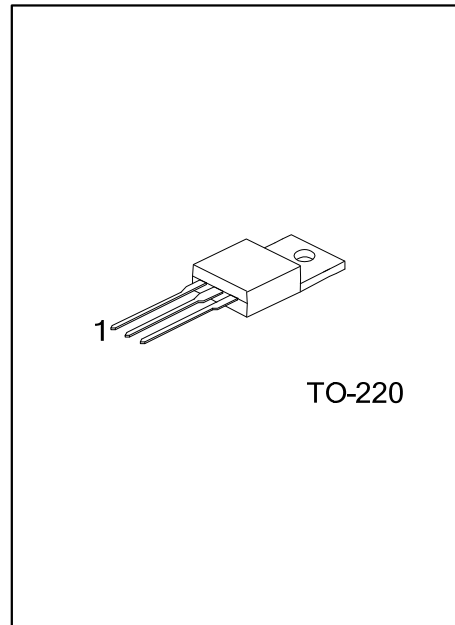
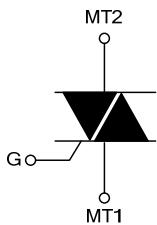
8A TRIACS

■ DESCRIPTION

The UTC **BTB08A** is a 8A triacs which can be operated in 3 quadrants only, it uses UTC's advanced technology to provide customers with high commutation performances and voltage insulated tab, etc.

The UTC **BTB08A** is suitable for inductive load switching operations, also can be used in ON/OFF function applications such as induction motor starting circuits, heating regulation, static relays etc.

■ SYMBOL



■ ORDERING INFORMATION

| Ordering Number | | Package | Pin Assignment | | | Packing |
|--------------------|--------------------|---------|----------------|-----|---|---------|
| Lead Free | Halogen Free | | 1 | 2 | 3 | |
| BTB08AL-x-xx-TA3-T | BTB08AG-x-xx-TA3-T | TO-220 | MT1 | MT2 | G | Tube |

| | |
|---|--|
| <p>BTB08AL-x-xx-TA3-T</p> <ul style="list-style-type: none"> (1)Packing Type (2)Package Type (3)Sensitivity and type (4)Voltage (5)Lead Free | <ul style="list-style-type: none"> (1) T: Tube (2) TA3: TO-220 (3) refer to SENSITIVITY AND TYPE (4) 6: 600V, 8: 800V (5) L: Lead Free, G: Halogen Free |
|---|--|

■ SENSITIVITY AND TYPE

| PART NUMBER | VOLTAGE | | SENSITIVITY | TYPE |
|-------------|---------|------|-------------|-------------|
| | 600V | 800V | | |
| BW | ⊙ | ⊙ | 50mA | SNUBBERLESS |
| CW | ⊙ | ⊙ | 35mA | SNUBBERLESS |
| SW | ⊙ | ⊙ | 10mA | LOGIC LEVEL |
| TW | ⊙ | ⊙ | 5mA | LOGIC LEVEL |

⊙: Available

■ MARKING INFORMATION

| PACKAGE | MARKING |
|---------|--|
| TO-220 | <p>UTC BTB08A □ □ □ □ □ □ □ Lot Code ← → Data Code 1</p> <p>L: Lead Free G: Halogen Free</p> |

■ ABSOLUTE MAXIMUM RATINGS

| PARAMETER | | | SYMBOL | RATINGS | UNIT |
|--|---------------------------|---------------------------|--------------|----------|------------------|
| RMS On-State Current (Full Sine Wave) | $T_C=100^{\circ}\text{C}$ | | $I_{T(RMS)}$ | 8 | A |
| Non Repetitive Surge Peak On-State Current (Full Cycle T_J initial= 25°C) | F=50Hz | t=20ms | I_{TSM} | 80 | A |
| | F=60Hz | t=16.7ms | | 84 | A |
| I^2t Value for Fusing | t _p =10ms | | I^2t | 36 | A ² s |
| Critical Rate of Rise of On-State Current: $I_G=2xI_{GT}$, tr≤100ns | F=120Hz | $T_J=125^{\circ}\text{C}$ | dI/dt | 50 | A/μs |
| Peak Gate Current | t _p =20μs | $T_J=125^{\circ}\text{C}$ | I_{GM} | 4 | A |
| Average Gate Power Dissipation | $T_J=125^{\circ}\text{C}$ | | $P_{G(AV)}$ | 1 | W |
| Operating Junction Temperature | | | T_J | -40~+125 | °C |
| Storage Junction Temperature | | | T_{STG} | -40~+150 | °C |

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ THERMAL RESISTANCES

| PARAMETER | SYMBOL | RATINGS | UNIT |
|-----------------------|---------------|---------|------|
| Junction to Ambient | θ_{JA} | 60 | °C/W |
| Junction to Case (AC) | θ_{JC} | 1.6 | °C/W |

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

FOR SNUBBERLESS AND LOGIC LEVEL (3 QUADRANTS)

| PARAMETER | SYMBOL | TEST CONDITIONS | TW | | | SW | | | CW | | | BW | | | UNIT |
|--|----------------------|---|----------|-----|-----|-----|------|-----|-----|-----|-----|-----|------|-----|------|
| | | | MIN | TYP | MAX | MIN | TYP | MAX | MIN | TYP | MAX | MIN | TYP | MAX | |
| Gate Trigger Current (Note 1) | I_{GT} | $V_D=12\text{V}$ | I-II-III | | 5 | | | 10 | | | 35 | | | 50 | mA |
| Gate Trigger Voltage | V_{GT} | $R_L=30\Omega$ | I-II-III | | 1.3 | | | 1.3 | | | 1.3 | | | 1.3 | V |
| Gate Non-Trigger Voltage | V_{GD} | $V_D=V_{DRM}$, $R_L=3.3\text{k}\Omega$, $T_J=125^{\circ}\text{C}$ | I-II-III | 0.2 | | | 0.2 | | | 0.2 | | | 0.2 | | V |
| Holding Current (Note 2) | I_H | $I_T=100\text{mA}$ | | | 10 | | | 15 | | | 35 | | | 50 | mA |
| Latching Current | I_L | $I_G=1.2I_{GT}$ | I-III | | 10 | | | 25 | | | 50 | | | 70 | mA |
| | | | II | | 15 | | | 30 | | | 60 | | | 80 | mA |
| Critical Rate of Rise of Off-State Voltage(Note 2) | dV/dt | $V_D=67\%V_{DRM}$, Gate Open, $T_J=125^{\circ}\text{C}$ | | 20 | | | 40 | | | 400 | | | 1000 | | V/μs |
| Critical Rate of Rise of Off-State Voltage at Commutation (Note 2) | (dI/dt) _c | (dV/dt) _c =0.1V/μs, $T_J=125^{\circ}\text{C}$ | | 3.5 | | | 5.4 | | | | | | | | A/ms |
| | | (dV/dt) _c =10V/μs, $T_J=125^{\circ}\text{C}$ | | 1.5 | | | 2.98 | | | | | | | | A/ms |
| | | Without Snubber $T_J=125^{\circ}\text{C}$ | | | | | | | | 4.5 | | | 7 | | A/ms |

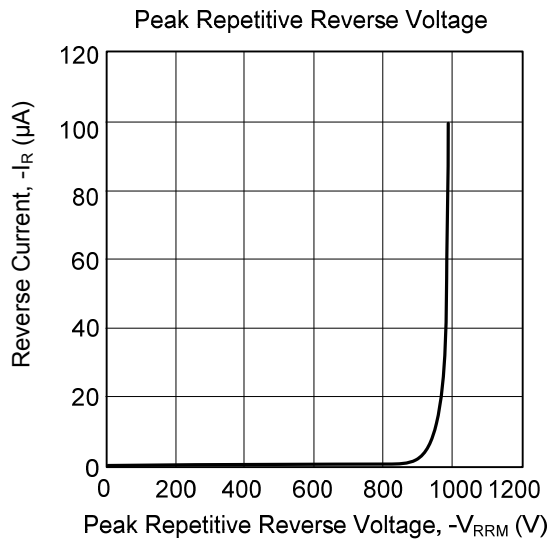
Note: 1. Minimum I_{GT} is guaranteed at 5% of I_{GT} max.
2. For both polarities of MT2 referenced to MT1.

■ STATIC CHARACTERISTICS

| PARAMETER | SYMBOL | TEST CONDITIONS | | MIN | TYP | MAX | UNIT |
|-----------------------------------|-----------|----------------------------|-------------------|-----|-----|------|------------|
| Peak On-State Voltage (Note 1) | V_{TM} | $I_{TM}=11A, t_p=380\mu s$ | $T_J=25^\circ C$ | | | 1.55 | V |
| Threshold Voltage (Note 2) | V_{TO} | | $T_J=125^\circ C$ | | | 0.85 | V |
| Dynamic Resistance (Note 2) | R_D | | $T_J=125^\circ C$ | | | 50 | m Ω |
| Repetitive Peak Off-State Current | I_{DRM} | $V_{DRM}=V_{RRM}$ | $T_J=25^\circ C$ | | | 5 | μA |
| | I_{RRM} | | $T_J=125^\circ C$ | | | 1 | mA |

Note: 1. Minimum I_{GT} is guaranteed at 5% of I_{GT} max.
 2. For both polarities of MT2 referenced to MT1.

■ TYPICAL CHARACTERISTICS



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