

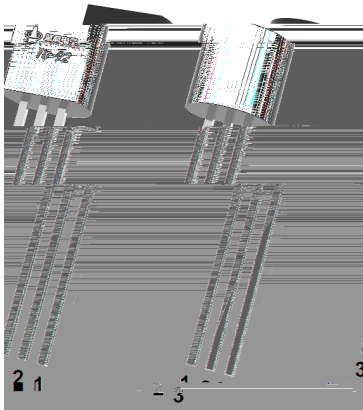
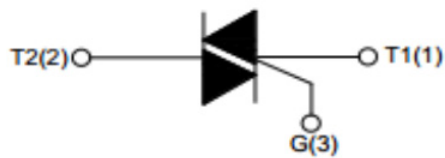
Rev.A Apr.-2024

TO-92

Triac in a TO-92 Plastic Package.

Low power gate trigger circuits.

Suitable for general purpose AC switching .Such as static relays,heating regulation,induction motor starting circuits,motor speed controllers,etc.



PIN1 Main Terminal 2      PIN 2 Gate      PIN 3 Main Terminal 1

See Marking Instructions.

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| Parameter                                                                                                     | Symbol                          | Rating  | Unit             |
|---------------------------------------------------------------------------------------------------------------|---------------------------------|---------|------------------|
| Repetitive peak off-state/reverse voltages( $T_j=25^\circ\text{C}$ )                                          | $V_{\text{DRM}}/V_{\text{RRM}}$ | 600     | V                |
| RMS on-state current( $T_C=110^\circ\text{C}$ )                                                               | $I_{\text{T(RMS)}}$             | 1       | A                |
| Non repetitive surge peak on-state current(full cycle, $T_j=25^\circ\text{C}$ )                               | $I_{\text{TSM}(t=20\text{ms})}$ | 16      | A                |
| Critical rate of rise of on-state current ( $I_G=2I_{\text{GT}}$ , $f=100\text{Hz}$ $T_j=125^\circ\text{C}$ ) | $dI/dt$ I-II-III                | 50      | A/ $\mu\text{s}$ |
|                                                                                                               | $dI/dt$ IV                      | 30      |                  |
| Peak gate current( $t_p=20\mu\text{s}$ $T_j=125^\circ\text{C}$ )                                              | $I_{\text{GM}}$                 | 2.0     | A                |
| Average gate power dissipation( $T_j=125^\circ\text{C}$ )                                                     | $P_{\text{G(AV)}}$              | 0.5     | W                |
| Operating junction temperature range                                                                          | $T_j$                           | -40 125 |                  |
| Storage junction temperature range                                                                            | $T_{\text{stg}}$                | -40 150 |                  |
| Junction to ambient(AC)                                                                                       | $R_{\text{th(j-a)}}$            | 150     | /W               |
| Junction to case for(AC)                                                                                      | $R_{\text{th(j-c)}}$            | 60      |                  |

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| Symbol           | Test Conditions                                                      | Quadrant                | Value |      | Unit             |
|------------------|----------------------------------------------------------------------|-------------------------|-------|------|------------------|
| $I_{\text{GT}}$  | $V_D=12\text{V}$ $R_L=33\Omega$                                      | I-II-III                | Max.  | 5    | mA               |
|                  |                                                                      | IV                      |       | 10   |                  |
| $V_{\text{GT}}$  | $V_D=12\text{V}$ $R_L=33\Omega$                                      | I-II-III-IV             | Max.  | 1.3  | V                |
| $V_{\text{GD}}$  | $V_D=V_{\text{DRM}}$ $R_L=3.3\text{K}\Omega$ $T_j=125^\circ\text{C}$ | I-II-III-IV             | Min.  | 0.2  | V                |
| $I_{\text{L}}$   | $I_G=1.2I_{\text{GT}}$                                               | I-III-IV                | Max.  | 5    | mA               |
|                  |                                                                      | II                      |       | 20   |                  |
| $I_{\text{H}}$   | $I_{\text{T}}=50\text{mA}$                                           |                         | Max.  | 7    | mA               |
| $dV/dt$          | $V_D=67\% V_{\text{DRM}}$ Gate Open                                  | $T_j=125^\circ\text{C}$ | Min.  | 120  | V/ $\mu\text{s}$ |
| $V_{\text{TM}}$  | $I_{\text{TM}}=1.4\text{A}$ $t_p=380\mu\text{s}$                     | $T_j=25^\circ\text{C}$  | Max.  | 1.45 | V                |
| $I_{\text{DRM}}$ | $V_D=V_{\text{DRM}}$ $V_R=V_{\text{RRM}}$                            | $T_j=25^\circ\text{C}$  |       | 5    | $\mu\text{A}$    |
| $I_{\text{RRM}}$ |                                                                      | $T_j=125^\circ\text{C}$ |       | 0.2  | mA               |

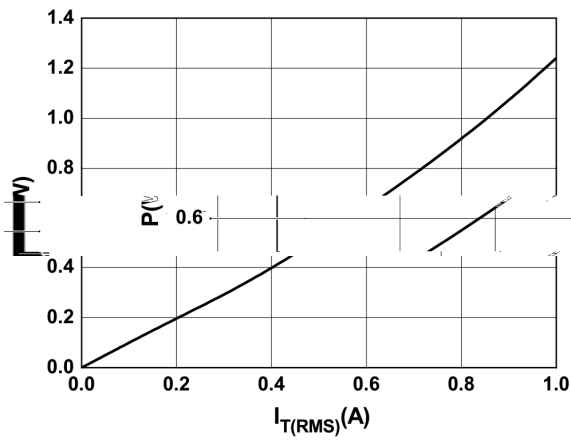


FIG.1 Maximum power dissipation versus RMS on-state current

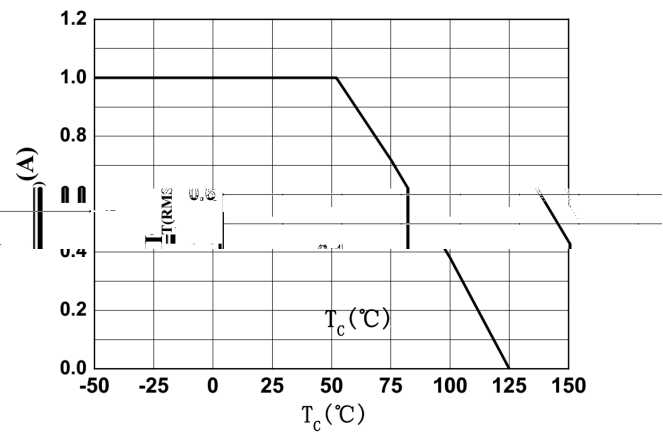


FIG.2: RMS on-state current versus case temperature

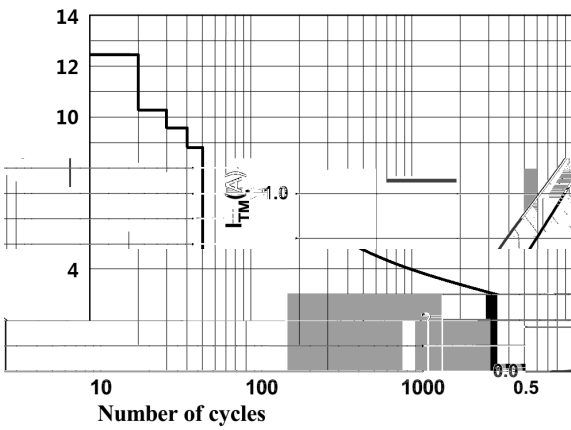


FIG.3: Surge peak on-state current versus number of cycles

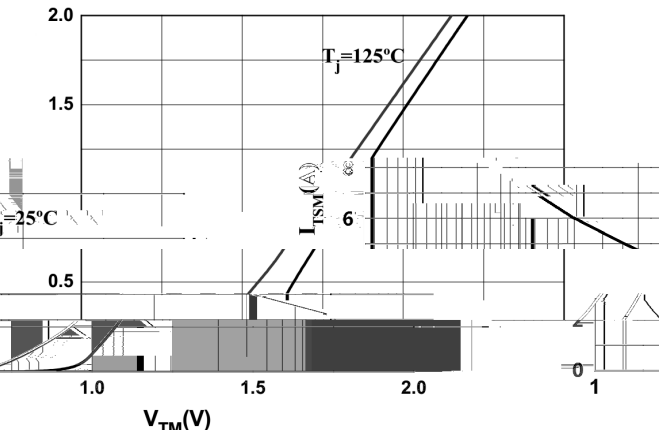
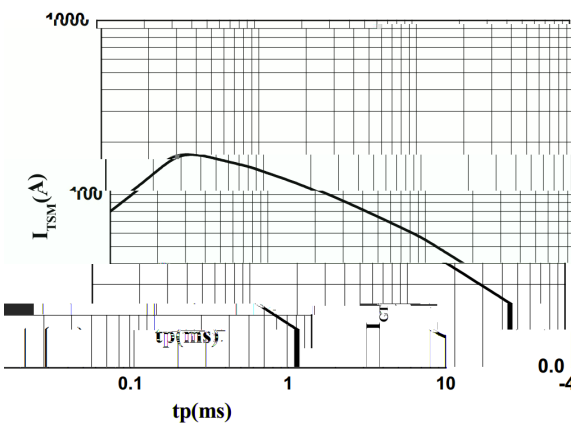
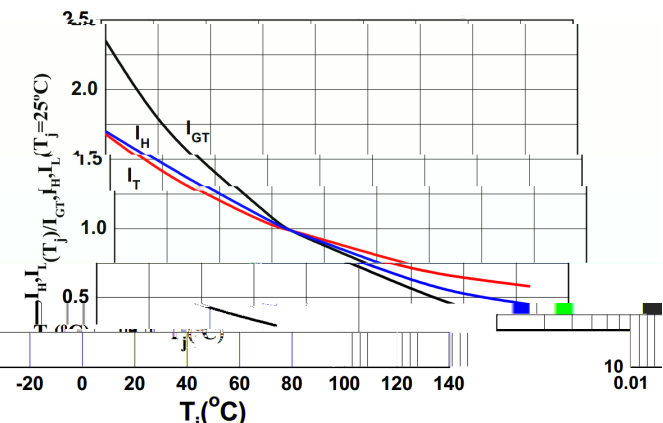
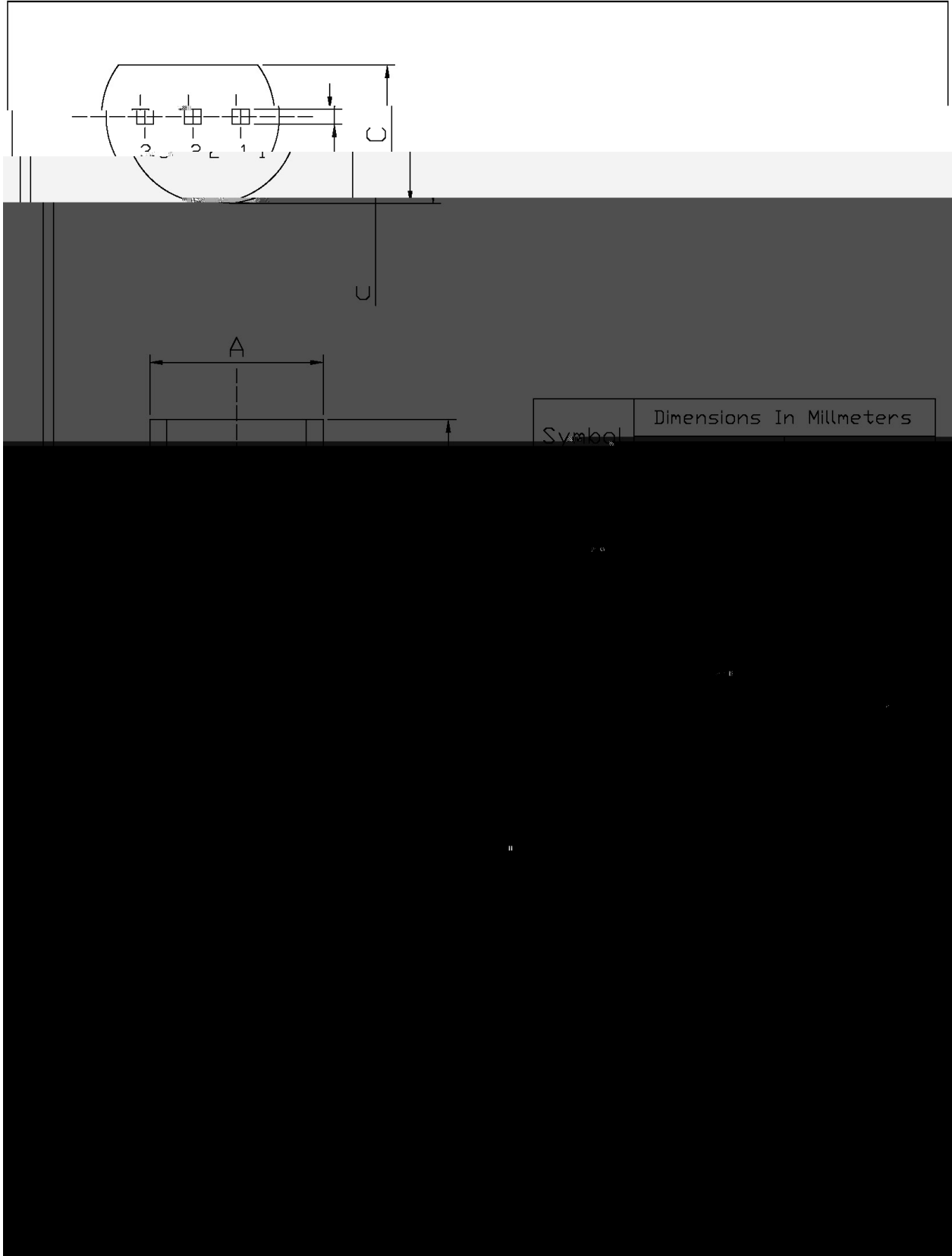


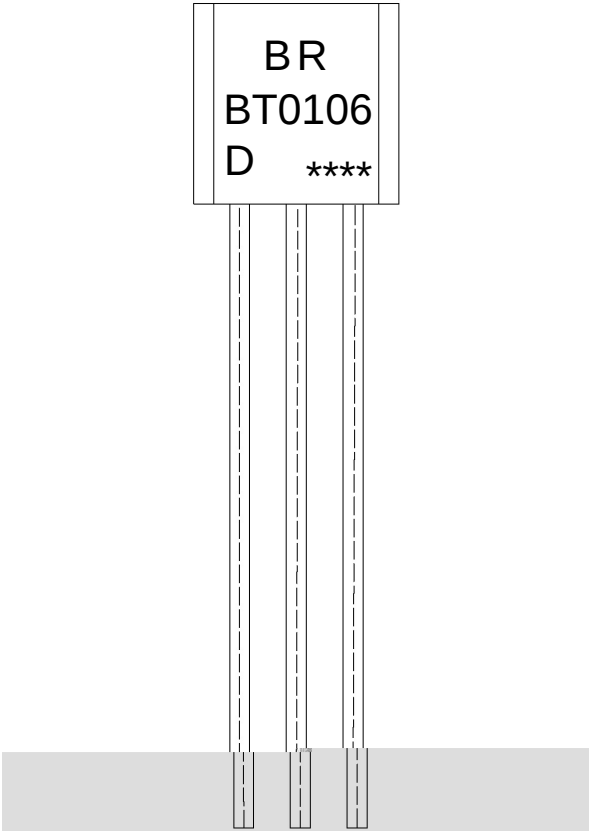
FIG.4: On-state characteristics


 FIG.5: Switching characteristics  
 for one pulse width of 100 μs and  
 duty cycle of 1% (I\_T=III: di/dt<50A/μs;  
 IV: di/dt<30A/μs)

 FIG.6: Normalized on-state current  
 versus junction temperature

T0-92

Unit: mm





BR

BT0106

D: I<sub>GT</sub>

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Note:

BR: Company Code

BT0106: Product Type Code

D: I<sub>GT</sub> Level Code

\*\*\*\*: Lot No. Code, code change with Lot No

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|  |
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|  |
|  |
|  |

- 1

25 150

60 90sec;

2

255±5

5±0.5sec;
- 3
- 2 10 /sec.

Note:  
1.Preheating:25~150 , Time:60~90sec.  
2.Peak Temp.:255±5 , Duration:5±0.5sec.  
3. Cooling Speed: 2~10 /sec.

270±5

10±1 sec.

Temp.:270±5

Time:10±1 sec

/ BULK

| Package Type | Units          |                     |                      |                            |                      | Dimension (unit mm3) |             |             |
|--------------|----------------|---------------------|----------------------|----------------------------|----------------------|----------------------|-------------|-------------|
|              | Units/Bag<br>/ | Bags/Inner Box<br>/ | Units/Inner Box<br>/ | Inner Boxes/Outer Box<br>/ | Units/Outer Box<br>/ | Bag                  | Inner Box   | Outer Box   |
| TO-92        | 1,000          | 10                  | 10,000               | 5                          | 50,000               | 135×190              | 237×172×102 | 560×245×195 |

/ AMMO

| Package Type | Units           |                     |                     |                            |                      | Dimension (unit mm3) |           |           |
|--------------|-----------------|---------------------|---------------------|----------------------------|----------------------|----------------------|-----------|-----------|
|              | Units/tape<br>/ | Tape/Inner Box<br>/ | Rows/Inner Box<br>/ | Inner Boxes/Outer Box<br>/ | Units/Outer Box<br>/ | Bag                  | Inner Box | Outer Box |