



## ACJT1 Series 1A TRIACs

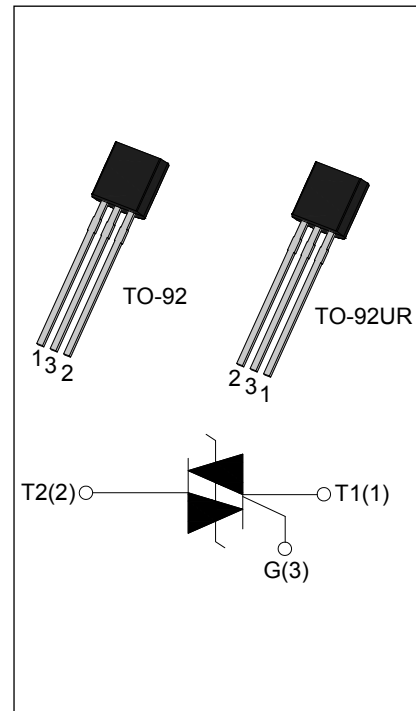
Rev.8.0

### DESCRIPTION:

ACJT1 series triacs with high ability to withstand the shock loading of large current provide high dv/dt rate with strong resistance to electromagnetic interference. They are especially recommended for use on inductive load and serious electromagnetic interference place. Package TO-92 & TO-92UR are RoHS compliant. (2011/65/EU)

### MAIN FEATURES

| Symbol            | Value                 | Unit |
|-------------------|-----------------------|------|
| $I_{T(RMS)}$      | 1                     | A    |
| $V_{DRM}/V_{RRM}$ | 600/800/1000          | V    |
| $I_{GT}$          | $\leq 5$ or $\leq 10$ | mA   |



### ABSOLUTE MAXIMUM RATINGS

| Parameter   |  | Symbol       | Value        | Unit        |
|---|--|--------------|--------------|-------------|
| Storage junction temperature range                                  |  | $T_{stg}$    | -40-150      | $^{\circ}C$ |
| Operating junction temperature range                                |  | $T_j$        | -40-125      | $^{\circ}C$ |
| Repetitive peak off-state voltage( $T_j=25^{\circ}C$ )              |  | $V_{DRM}$    | 600/800/1000 | V           |
| Repetitive peak reverse voltage( $T_j=25^{\circ}C$ )                |  | $V_{RRM}$    | 600/800/1000 | V           |
| RMS on-state current  | TO-92/<br>TO-92UR<br>( $T_C=50^{\circ}C$ ) | $I_{T(RMS)}$ | 1            | A           |
| Non repetitive surge peak on-state current<br>( full cycle, F=50Hz) |  | $I_{TSM}$    | 10           | A           |
| $I^2t$ value for fusing ( $t_p=10ms$ )                              |  | $I^2t$       | 1.12         | $A^2s$      |
| Rate of rise of on-state current ( $I_G=2 \times I_{GT}$ )          |  | $di_T/dt$    | 50           | $A/\mu s$   |
| Peak gate current   |  | $I_{GM}$     | 1            | A           |
| Average gate power dissipation                                      |  | $P_{G(AV)}$  | 0.2          | W           |
| Peak gate power   |  | $P_{GM}$     | 1            | W           |

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

| Symbol   | Test Condition   | Quadrant    |     | Value   |         | Unit             |
|----------|--|-------------|-----|---------|---------|------------------|
|          |  |             |     | ACJT105 | ACJT110 |                  |
| $I_{GT}$ | $V_D=12\text{V } R_L=33\Omega$                                 | I - II -III | MAX | 5       | 10      | mA               |
| $V_{GT}$ |  | I - II -III | MAX | 1.3     |         | V                |
| $V_{GD}$ | $V_D=V_{DRM} T_j=125^\circ\text{C}$<br>$R_L=3.3\text{K}\Omega$ | I - II -III | MIN | 0.2     |         | V                |
| $I_L$    | $I_G=1.2I_{GT}$  | I -III      | MAX | 15      | 25      | mA               |
|          |  | II          |     | 25      | 35      |                  |
| $I_H$    | $I_T=100\text{mA}$   |             | MAX | 10      | 20      | mA               |
| dV/dt    | $V_D=2/3V_{DRM}$ Gate Open $T_j=125^\circ\text{C}$             |             | MIN | 400     | 600     | V/ $\mu\text{s}$ |

## STATIC CHARACTERISTICS

| Symbol    | Parameter                                |                         | Value(MAX) | Unit          |
|-----------|--|-------------------------|------------|---------------|
| $V_{TM}$  | $I_{TM}=1.4\text{A } t_p=380\mu\text{s}$ | $T_j=25^\circ\text{C}$  | 1.5        | V             |
| $I_{DRM}$ | $V_D=V_{DRM} V_R=V_{RRM}$                | $T_j=25^\circ\text{C}$  | 5          | $\mu\text{A}$ |
| $I_{RRM}$ |  | $T_j=125^\circ\text{C}$ | 0.5        | mA            |

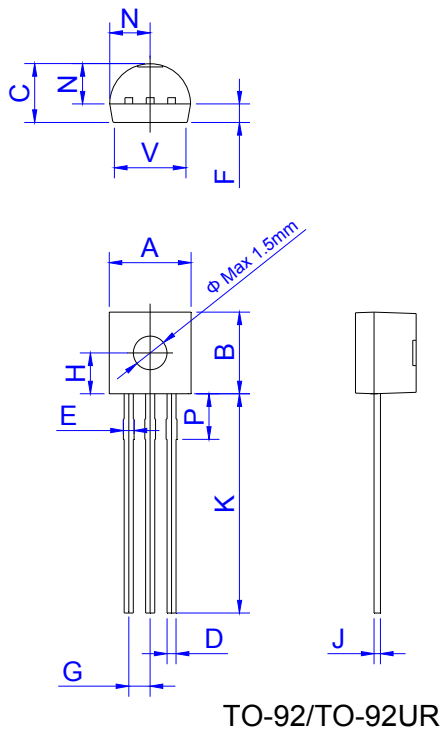
## THERMAL RESISTANCES

| Symbol        | Parameter            |       | Value | Unit               |
|---------------|----------------------|-------|-------|--------------------|
| $R_{th(j-c)}$ | junction to case(AC) | TO-92 | 60    | $^\circ\text{C/W}$ |

## ORDERING INFORMATION

|  |  |                 |                 |  |   |   |
|--|--|-----------------|-----------------|--|---|---|
| <p><b>AC</b></p> <p>AC switch</p> <p>JieJie Microelectronics Co.,Ltd</p> | <p><b>J</b></p> <p>Triacs</p> <p><math>I_{T(RMS)}:1\text{A}</math></p> | <p><b>T</b></p> | <p><b>1</b></p> | <p><b>05</b></p> <p>05: <math>I_{GT1-3}\leq 5\text{mA}</math><br/>10: <math>I_{GT1-3}\leq 10\text{mA}</math></p> | <p><b>-6</b></p> <p>6: <math>V_{DRM} / V_{RRM}\geq 600\text{V}</math><br/>8: <math>V_{DRM} / V_{RRM}\geq 800\text{V}</math><br/>10: <math>V_{DRM} / V_{RRM}\geq 1000\text{V}</math></p> | <p><b>U</b></p> <p>U: TO-92<br/>UR: TO-92UR</p> |
|--|--|-----------------|-----------------|--|---|---|

**PACKAGE MECHANICAL DATA**

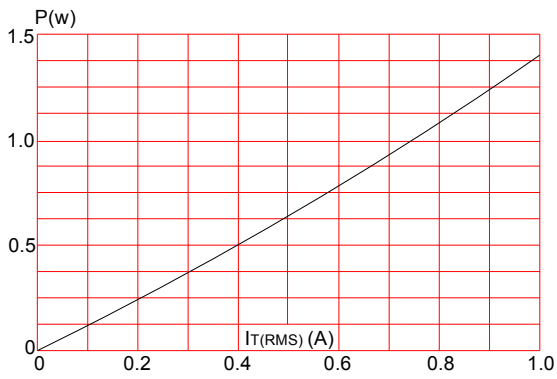


| Ref. | Dimensions  |      |       |        |       |       |
|------|-------------|------|-------|--------|-------|-------|
|      | Millimeters |      |       | Inches |       |       |
|      | Min.        | Typ. | Max.  | Min.   | Typ.  | Max.  |
| A    | 4.45        |      | 5.20  | 0.175  |       | 0.205 |
| B    | 4.32        |      | 5.33  | 0.170  |       | 0.210 |
| C    | 3.18        |      | 4.19  | 0.125  |       | 0.165 |
| D    | 0.407       |      | 0.533 | 0.016  |       | 0.021 |
| E    | 0.50        |      | 0.70  | 0.024  |       | 0.031 |
| F    | -           | 1.1  | -     | -      | 0.043 | -     |
| G    | -           | 1.27 | -     | -      | 0.050 | -     |
| H    | -           | 2.30 | -     | -      | 0.091 | -     |
| J    | 0.36        |      | 0.50  | 0.014  |       | 0.020 |
| K    | 12.70       |      | 15.0  | 0.500  |       | 0.591 |
| N    | 2.04        |      | 2.66  | 0.080  |       | 0.105 |
| P    | 1.86        |      | 2.06  | 0.073  |       | 0.081 |
| V    | -           |      | 4.3   | -      |       | 0.169 |

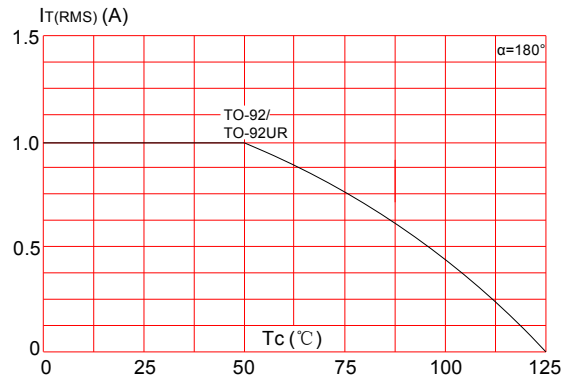
**PACKAGE INFORMATION**

| PACKAGE           | WEIGHT (PER PCS) | OUTLINE       | BAG (PCS) | INNER BOX (PCS) | PER CARTON |
|-------------------|------------------|---------------|-----------|-----------------|------------|
| TO-92/<br>TO-92UR | 0.1894g          | Shielding Bag | 1,000     | 10,000          | 30,000     |

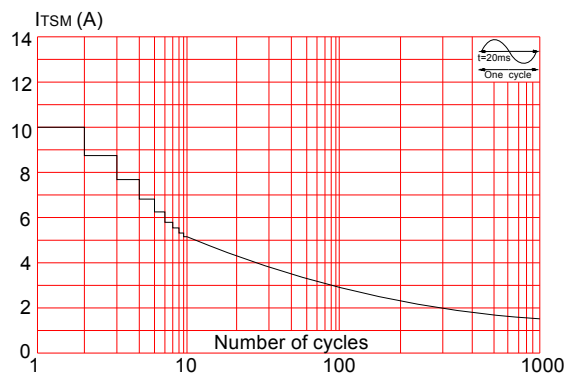
**FIG.1** Maximum power dissipation versus RMS on-state current



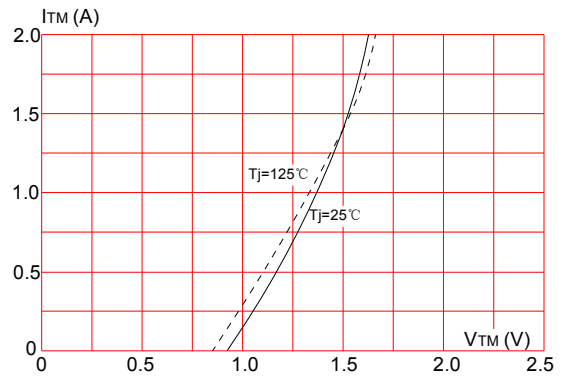
**FIG.2:** RMS on-state current versus case temperature



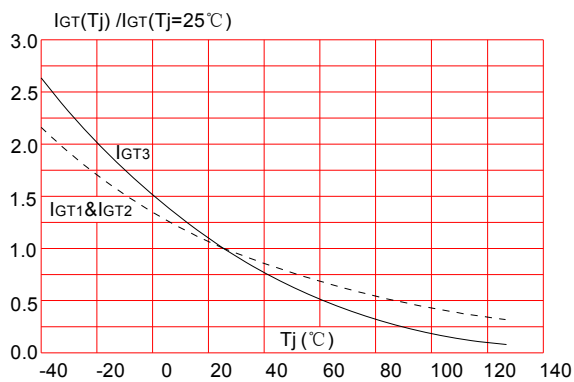
**FIG.3:** Surge peak on-state current versus number of cycles



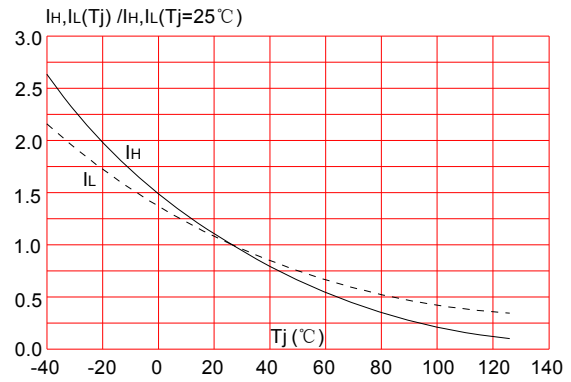
**FIG.4:** On-state characteristics (maximum values)



**FIG.5:** Relative variations of gate trigger current versus junction temperature



**FIG.6:** Relative variations of holding current, latching current versus junction temperature




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