



ACJT6 Series 6A TRIACs

Rev.5.0

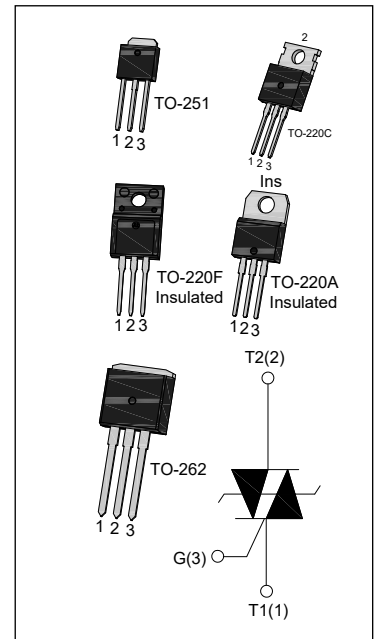
DESCRIPTION:

The ACJT6 series of double mesa technology provide high interference immunity, They can be used as an static ON/OFF function in electrical control system, and used as a driver of low power and high inductance or resistive loads, such as jet pumps of dishwashers, fans of air-conditioner ...

Packages listed above are all RoHS compliant (2011/65/EU).

MAIN FEATURES

| Symbol | Value | Unit |
|-------------------|----------|------|
| $I_{T(RMS)}$ | 6 | A |
| V_{DRM}/V_{RRM} | 800/1000 | 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($T_j=25^{\circ}C$) | | V_{DRM} | 800/1000 | V |
| Repetitive peak reverse voltage($T_j=25^{\circ}C$) | | V_{RRM} | 800/1000 | V |
| RMS on-state current | TO-220A(Ins)/ TO-220F(Ins)/ TO-251 ($T_C=102^{\circ}C$) | $I_{T(RMS)}$ | 6 | A |
| | TO-220C/ TO-262 ($T_C=110^{\circ}C$) | | | |
| Non repetitive surge peak on-state current (full cycle, F=50Hz) | | I_{TSM} | 60 | A |
| I^2t value for fusing ($t_p=10ms$) | | I^2t | 18 | A ² s |
| Rate of rise of on-state current ($I_G = 2 \times I_{GT}$) | | di/dt | 50 | A/ μ s |
| Peak gate current | | I_{GM} | 4 | A |
| Average gate power dissipation | | $P_{G(AV)}$ | 0.5 | W |
| Peak gate power | | P_{GM} | 5 | W |

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

| Symbol | Test Condition | Quadrant | | Value | | | Unit |
|-------------|--|-------------|-----|---------|---------|---------|------------------|
| | | | | ACJT605 | ACJT610 | ACJT625 | |
| I_{GT} | $V_D=12\text{V } R_L=33\Omega$ | I - II -III | MAX | 5 | 10 | 25 | mA |
| V_{GT} | | I - II -III | MAX | 1.5 | | | V |
| V_{GD} | $V_D=V_{DRM} T_j=125^{\circ}\text{C}$ $R_L=3.3\text{K}\Omega$ | I - II -III | MIN | 0.2 | | | V |
| I_L | $I_G=1.2I_{GT}$ | I -III | MAX | 7 | 20 | 40 | mA |
| | | II | | 20 | 35 | 60 | |
| I_H | $I_T=100\text{mA}$ | | MAX | 7 | 20 | 40 | mA |
| dV/dt | $V_D=2/3V_{DRM}$ Gate Open $T_j=125^{\circ}\text{C}$ | | MIN | 200 | 500 | 1000 | V/ μs |
| $(dI/dt)_c$ | $(dV/dt)_c=0.1\text{ V}/\mu\text{s}$ $T_j=125^{\circ}\text{C}$ | | MIN | 2.7 | 3.5 | 5.3 | V/ms |

STATIC CHARACTERISTICS

| Symbol | Parameter | | Value(MAX) | Unit |
|-----------|---|---------------------------|------------|------------------|
| V_{TM} | $I_{TM}=12\text{A } t_p=380\mu\text{s}$ | $T_j=25^{\circ}\text{C}$ | 1.6 | V |
| V_{T0} | Threshold voltage | $T_j=125^{\circ}\text{C}$ | 0.85 | V |
| R_d | Dynamic resistance | $T_j=125^{\circ}\text{C}$ | 68 | $\text{m}\Omega$ |
| I_{DRM} | $V_D=V_{DRM} V_R=V_{RRM}$ | $T_j=25^{\circ}\text{C}$ | 5 | μA |
| I_{RRM} | | $T_j=125^{\circ}\text{C}$ | 1 | mA |

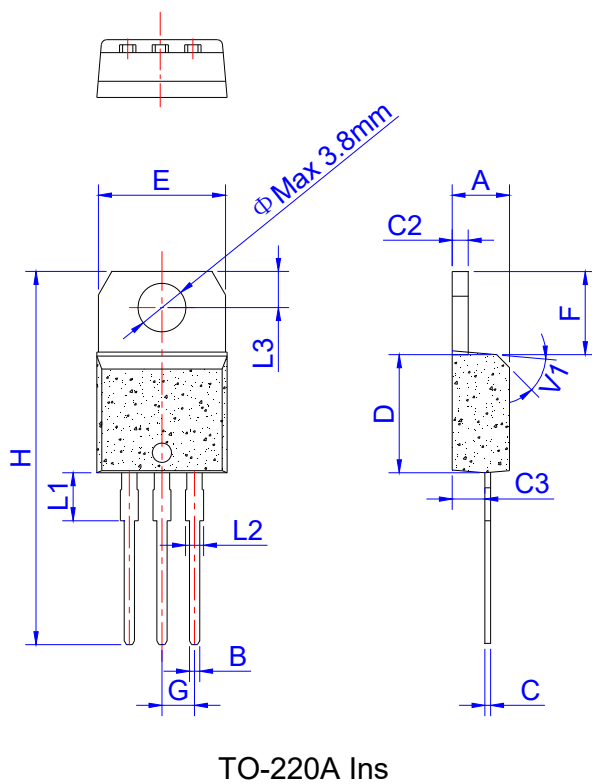
THERMAL RESISTANCES

| Symbol | Parameter | | Value | Unit |
|---------------|----------------------|---------------|-------|-----------------------------|
| $R_{th(j-c)}$ | junction to case(AC) | TO-220F(Ins) | 2.9 | $^{\circ}\text{C}/\text{W}$ |
| | | TO-220A (Ins) | 2.7 | |
| | | TO-220C | 1.8 | |
| | | TO-262 | 1.7 | |
| | | TO-251 | 2.8 | |

ORDERING INFORMATION

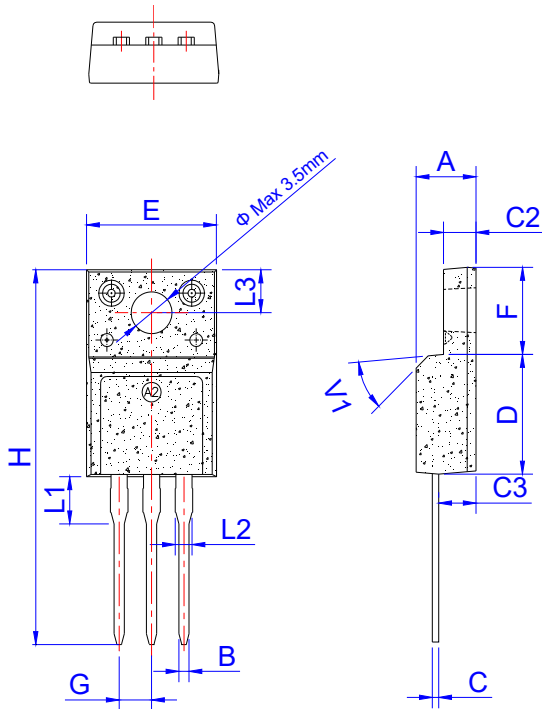
| | |
|--|--|
| <p>AC AC switch</p> <p>J JieJie Microelectronics Co.,Ltd</p> <p>T Triacs</p> <p>6 $I_{T(RMS)}:6A$</p> | <p>10</p> <p>-8 8: $V_{DRM} / V_{RRM} \geq 800V$ 10: $V_{DRM} / V_{RRM} \geq 1000V$</p> <p>D D: TO-262 H: TO-251 A: TO-220A(Ins) F: TO-220F(Ins) C: TO-220C</p> |
|--|--|

PACKAGE MECHANICAL DATA



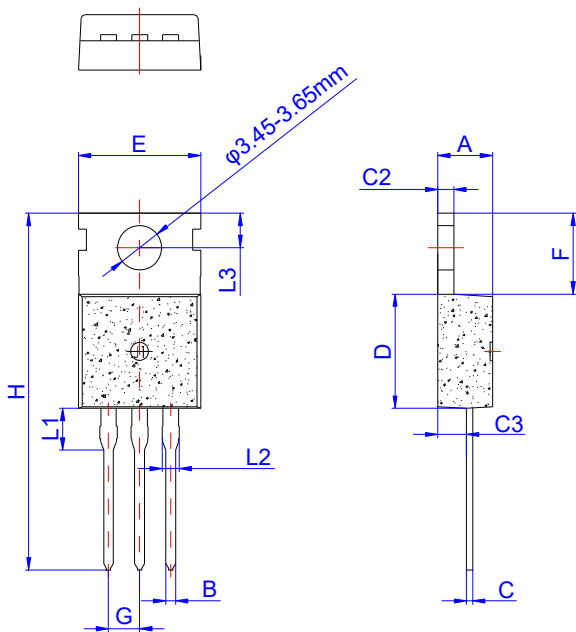
| Ref. | Dimensions | | | | | |
|------|-------------|------|------|--------|-------|-------|
| | Millimeters | | | Inches | | |
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | 4.40 | | 4.60 | 0.173 | | 0.181 |
| B | 0.61 | | 0.88 | 0.024 | | 0.035 |
| C | 0.46 | | 0.70 | 0.018 | | 0.028 |
| C2 | 1.21 | | 1.32 | 0.048 | | 0.052 |
| C3 | 2.40 | | 2.72 | 0.094 | | 0.107 |
| D | 8.60 | | 9.70 | 0.339 | | 0.382 |
| E | 9.80 | | 10.4 | 0.386 | | 0.409 |
| F | 6.55 | | 6.95 | 0.258 | | 0.274 |
| G | | 2.54 | | | 0.1 | |
| H | 28.0 | | 29.8 | 1.102 | | 1.173 |
| L1 | | 3.75 | | | 0.148 | |
| L2 | 1.14 | | 1.70 | 0.045 | | 0.067 |
| L3 | 2.65 | | 2.95 | 0.104 | | 0.116 |
| V1 | | 45° | | | 45° | |

PACKAGE MECHANICAL DATA



TO-220F Ins

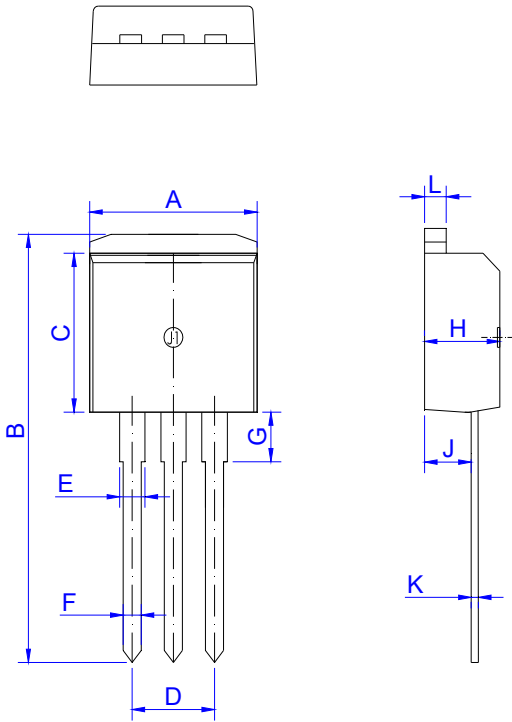
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|------|-------------|------|------|--------|-------|-------|
| | Millimeters | | | Inches | | |
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | 4.50 | | 4.90 | 0.177 | | 0.193 |
| B | 0.74 | 0.80 | 0.83 | 0.029 | 0.031 | 0.033 |
| C | 0.47 | | 0.65 | 0.019 | | 0.026 |
| C2 | 2.45 | | 2.75 | 0.096 | | 0.108 |
| C3 | 2.60 | | 3.00 | 0.102 | | 0.118 |
| D | 8.80 | | 9.30 | 0.346 | | 0.366 |
| E | 9.80 | | 10.4 | 0.386 | | 0.410 |
| F | 6.40 | | 6.80 | 0.252 | | 0.268 |
| G | | 2.54 | | | 0.1 | |
| H | 28.0 | | 29.8 | 1.102 | | 1.173 |
| L1 | | 3.63 | | | 0.143 | |
| L2 | 1.14 | | 1.70 | 0.045 | | 0.067 |
| L3 | | 3.30 | | | 0.130 | |
| V1 | | 45° | | | 45° | |



TO-220C

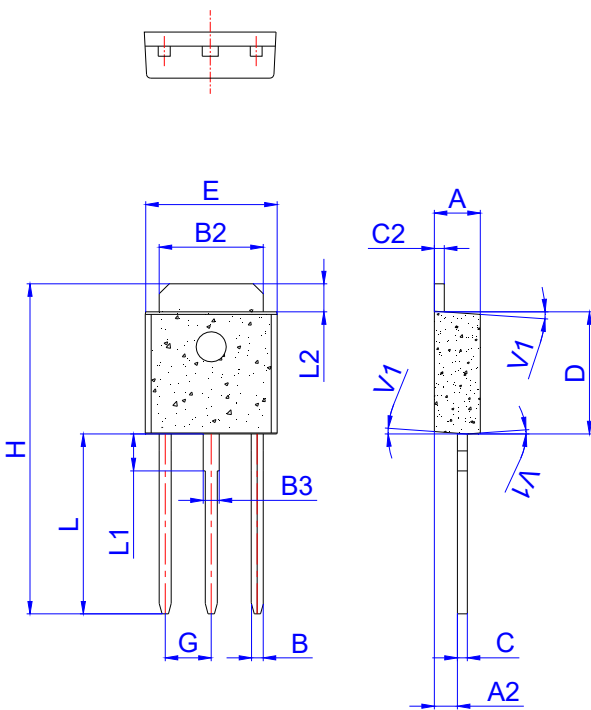
| Ref. | Dimensions | | | | | |
|------|-------------|------|------|--------|------|-------|
| | Millimeters | | | Inches | | |
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | 4.40 | | 4.60 | 0.173 | | 0.181 |
| B | 0.70 | | 0.90 | 0.028 | | 0.035 |
| C | 0.45 | | 0.60 | 0.018 | | 0.024 |
| C2 | 1.25 | | 1.35 | 0.049 | | 0.053 |
| C3 | 2.20 | | 2.60 | 0.087 | | 0.102 |
| D | 8.90 | | 9.90 | 0.350 | | 0.390 |
| E | 9.90 | | 10.3 | 0.390 | | 0.406 |
| F | 6.30 | | 6.90 | 0.248 | | 0.272 |
| G | 2.40 | | 2.70 | 0.094 | | 0.106 |
| H | 28.0 | | 29.8 | 1.102 | | 1.173 |
| L1 | 2.70 | | 3.30 | 0.106 | | 0.130 |
| L2 | 1.14 | | 1.70 | 0.045 | | 0.067 |
| L3 | 2.65 | | 2.95 | 0.104 | | 0.116 |

PACKAGE MECHANICAL DATA



TO-262

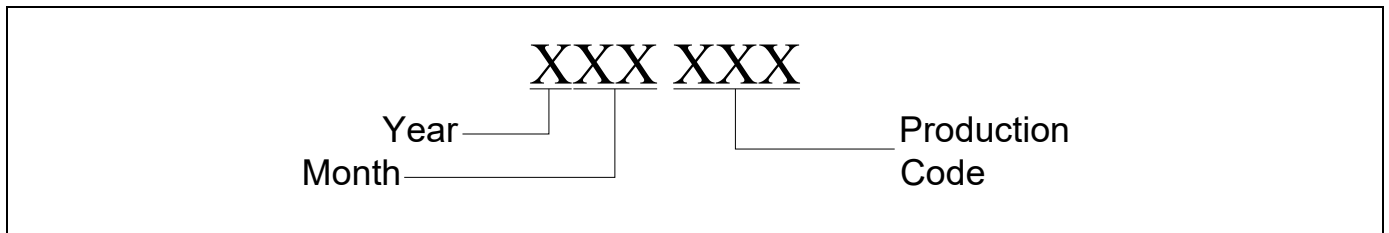
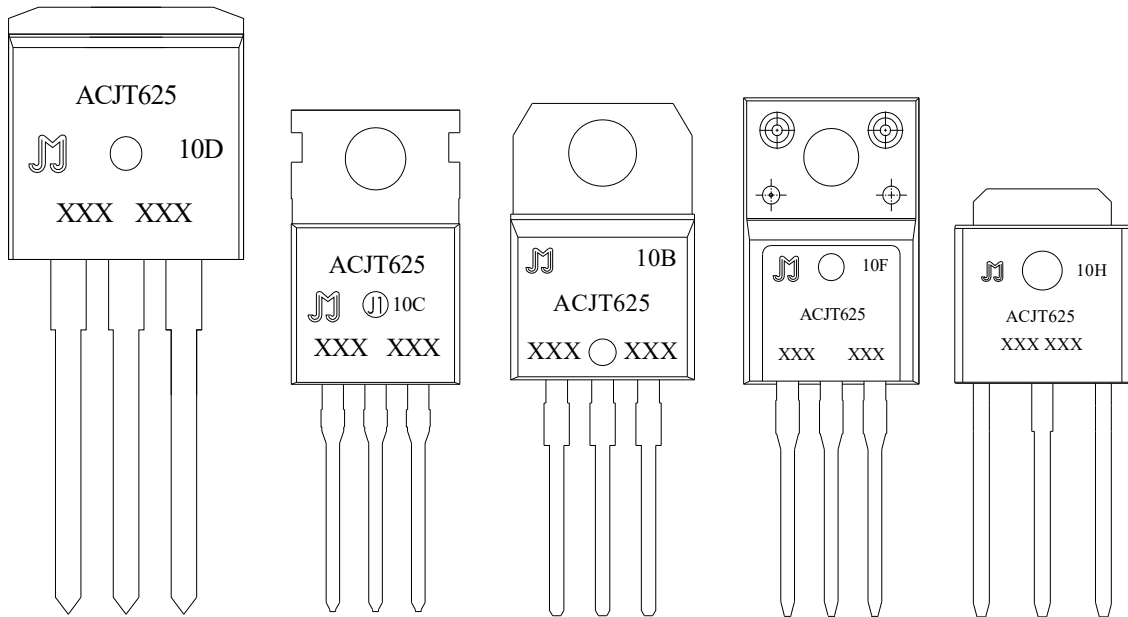
| Ref. | Dimensions | | | | | |
|------|-------------|------|-------|--------|------|-------|
| | Millimeters | | | Inches | | |
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | 9.95 | | 10.20 | 0.392 | | 0.402 |
| B | 23.25 | | 23.45 | 0.915 | | 0.923 |
| C | 8.90 | | 9.10 | 0.35 | | 0.358 |
| D | 2.50 | | 2.60 | 0.098 | | 0.102 |
| E | 1.20 | | 1.35 | 0.047 | | 0.053 |
| F | 0.80 | | 0.85 | 0.031 | | 0.033 |
| G | 3.30 | | 3.60 | 0.130 | | 0.142 |
| H | 4.45 | | 4.55 | 0.175 | | 0.179 |
| J | 2.50 | | 2.70 | 0.098 | | 0.106 |
| K | 0.38 | | 0.42 | 0.015 | | 0.017 |
| L | 1.25 | | 1.29 | 0.049 | | 0.051 |



TO-251

| Ref. | Dimensions | | | | | |
|------|-------------|------|------|--------|-------|-------|
| | Millimeters | | | Inches | | |
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | 2.20 | | 2.40 | 0.086 | | 0.095 |
| A2 | 0.90 | | 1.20 | 0.035 | | 0.047 |
| B | 0.55 | | 0.65 | 0.022 | | 0.026 |
| B2 | 5.10 | | 5.40 | 0.200 | | 0.213 |
| B3 | 0.76 | | 0.85 | 0.030 | | 0.033 |
| C | 0.45 | | 0.62 | 0.018 | | 0.024 |
| C2 | 0.48 | | 0.62 | 0.019 | | 0.024 |
| D | 6.00 | | 6.20 | 0.236 | | 0.244 |
| E | 6.40 | | 6.70 | 0.252 | | 0.264 |
| G | | 2.30 | | | 0.091 | |
| H | 16.0 | | 17.0 | 0.630 | | 0.669 |
| L | 8.90 | | 9.40 | 0.350 | | 0.370 |
| L1 | 1.80 | | 1.90 | 0.071 | | 0.075 |
| L2 | 1.37 | | 1.50 | 0.054 | | 0.059 |
| V1 | | 4° | | | 4° | |

MARKING



PACKAGE INFORMATION

| PACKAGE | OUTLINE | TUBE (PCS) | INNER BOX (PCS) | PER CARTON |
|---------|---------|------------|-----------------|------------|
| TO-220A | TUBE | 50 | 1,000 | 5,000 |
| TO-220C | TUBE | 50 | 1,000 | 5,000 |
| TO-220F | TUBE | 50 | 1,000 | 5,000 |
| TO-262 | TUBE | 50 | 1,000 | 5,000 |
| TO-251 | TUBE | 80 | 4,000 | 20,000 |

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

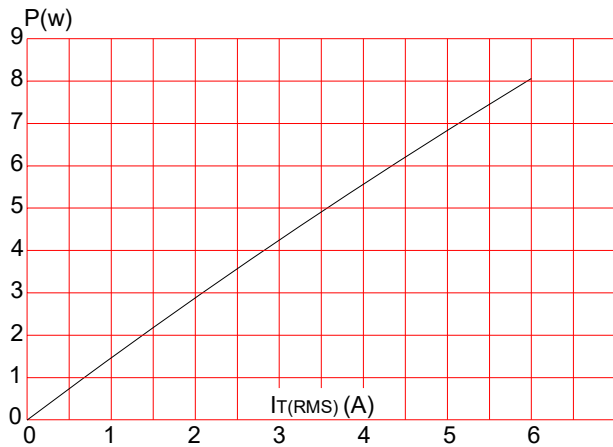


FIG.3: Surge peak on-state current versus number of cycles

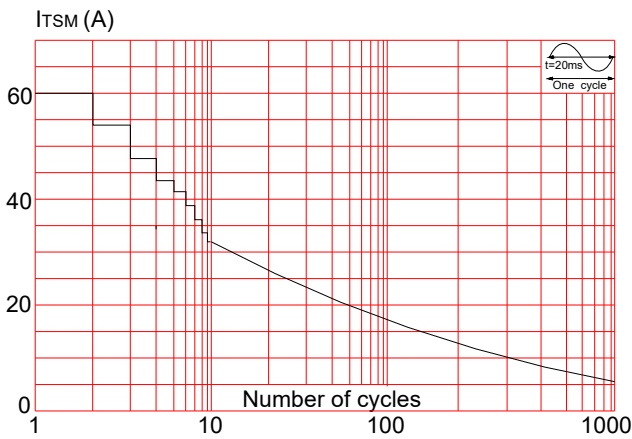


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$ and corresponding value of I^2t ($di/dt < 50\text{A}/\mu\text{s}$)

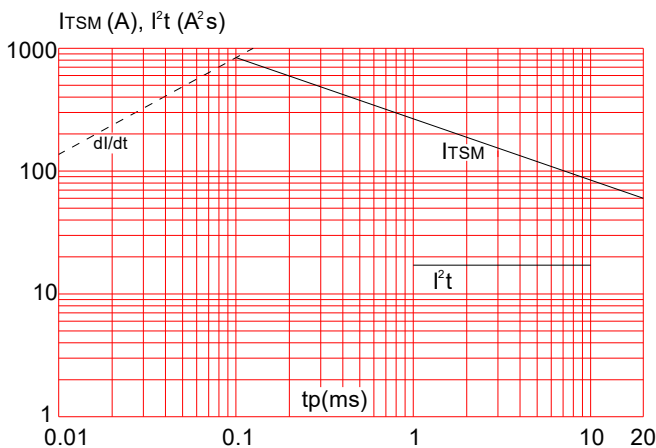


FIG.2: RMS on-state current versus case temperature

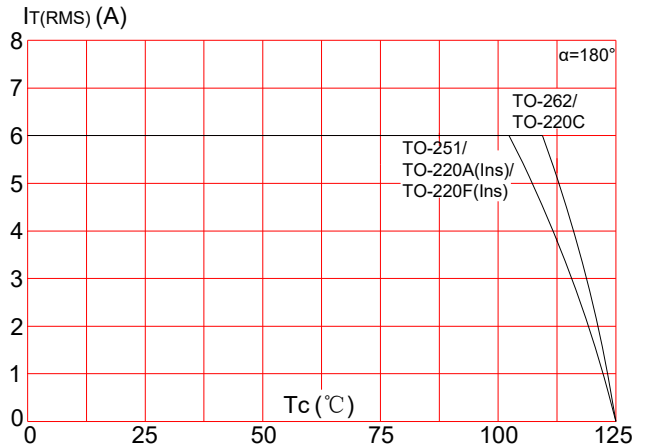


FIG.4: On-state characteristics (maximum values)

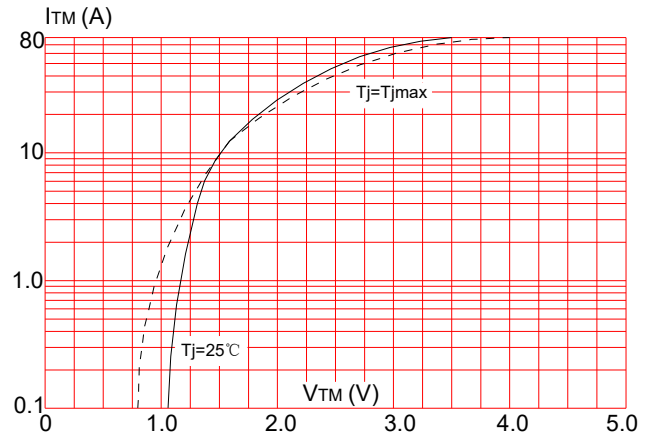
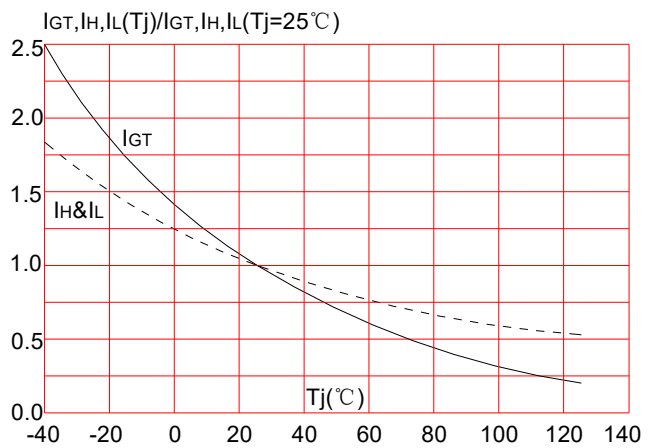


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



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