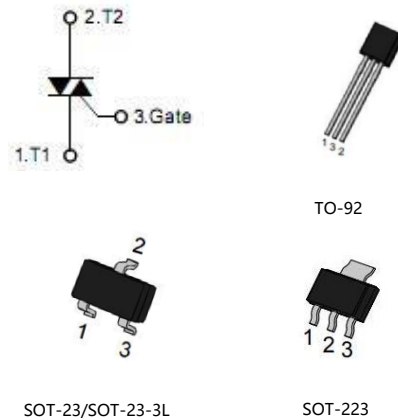


Applications

Mainly used for voltage regulation circuit, such as dimming, thermal control; home appliance such as microwave ovens, washing machines, electric fans, water dispensers, night light control circuit and used for ac phase, chopper, inverter, the inverter and solid state relay circuits.



Features

Adopt advanced glass passivation technology, low pass state pressure drop, high reliability, stability.

Absolute maximum ratings($T_a=25^{\circ}\text{C}$ unless otherwise specified)

| Symbol | Test conditions | | Type | Unit |
|---------------------|---|--|---------------|------------------------|
| V_{DRM} | Peak Repetitive Off-State Voltage | | 600/800 | V |
| V_{RRM} | Peak Repetitive Reverse Blocking Voltage | | 600/800 | V |
| $I_{\text{T(RMS)}}$ | On-State RMS Current(full sine wave) | | 1 | A |
| I_{TSM} | Non-Repetitive Peak on-state Current | F = 50 Hz t=20ms | 16 | |
| | | F = 60 Hz t=16.7ms | 17.6 | |
| I^2t | $I_{\text{G}} = 2 \times I_{\text{GT}}, t_{\text{r}} \leq 100 \text{ ns}$ | $t_{\text{p}} = 10 \text{ ms}$ | 1.28 | A^2s |
| di/dt | Repetitive rate of rise of on-state current after triggering | F = 120 Hz $T_{\text{j}}=125^{\circ}\text{C}$ | 20 | $\text{A}/\mu\text{s}$ |
| I_{GM} | Forward Peak Gate Voltage | $t_{\text{p}} = 20 \mu\text{s}$ $T_{\text{j}}=125^{\circ}\text{C}$ | 2 | A |
| PG(AV) | Average gate power | $T_{\text{j}}=125^{\circ}\text{C}$ | 0.5 | W |
| T_{stg} | Storage Temperature Range | | - 40 to + 150 | $^{\circ}\text{C}$ |
| T_{j} | Operating Junction Temperature | | - 40 to + 125 | |

Electrical characteristics($T_a=25^{\circ}\text{C}$ unless otherwise specified)

| Parameter | Test condition | Quadrant | | T | D | Unit |
|-----------|--|----------------|-----|-------|----|------------------------|
| I_{DRM} | $V_{DRM}=V_{RRM}$ $T_j=25^{\circ}\text{C}$ | | MAX | 10 | | μA |
| | $V_{DRM}=V_{RRM}$ $T_j=125^{\circ}\text{C}$ | | MAX | 1 | | mA |
| I_{GT} | $V_D=12\text{V}$ $R_L=30\ \Omega$ | I、II、III | MAX | 5 | 5 | mA |
| | | IV | | 5 | 10 | |
| V_{GT} | $V_D=V_{DRM}$ $R_L=3.3\text{k}\Omega$ $T_j=125^{\circ}\text{C}$ | I、II III、IV | MIN | 1.5 | | V |
| V_{GD} | | | | 0.2 | | |
| I_H | $I_T=100\text{mA}$ | I、III | MAX | 5 | 7 | mA |
| I_L | $I_G=1.2 I_{GT}$ | | | II、IV | 5 | |
| | | 10 | 20 | | | |
| dV/dt | $V_D=67\%V_{DRM}$ gate open $T_j=125^{\circ}\text{C}$ | | MIN | 10 | 20 | $\text{V}/\mu\text{s}$ |

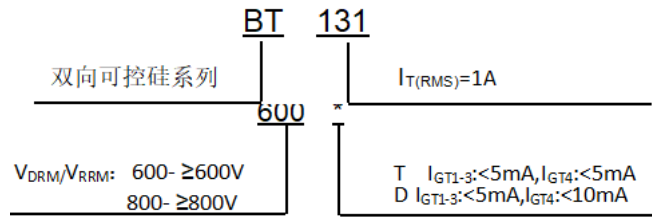
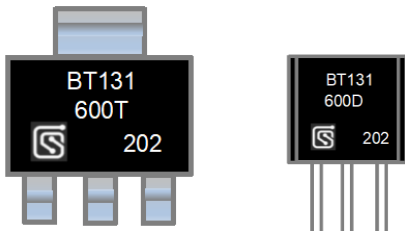
Packing

| Package | Quantity | Method |
|------------------|-------------------------------------|-------------|
| SOT-23/SOT-23-3L | 3000/reel, 30000/box, 120000/carton | reel/carton |
| SOT-223 | 2500/reel, 25000/carton | |
| TO-92C/TO-92J | 1000/bag, 10000/box, 50000/carton | box/carton |
| TO-92B | 2000/box, 20000/carton | |
| Shipping | Express | |

Maintaining Requirement

| | |
|-------------|--------------------------|
| Temperature | 10-30 $^{\circ}\text{C}$ |
| Humidity | <60% |
| Time Limit | 12 month |
| Status | storage |

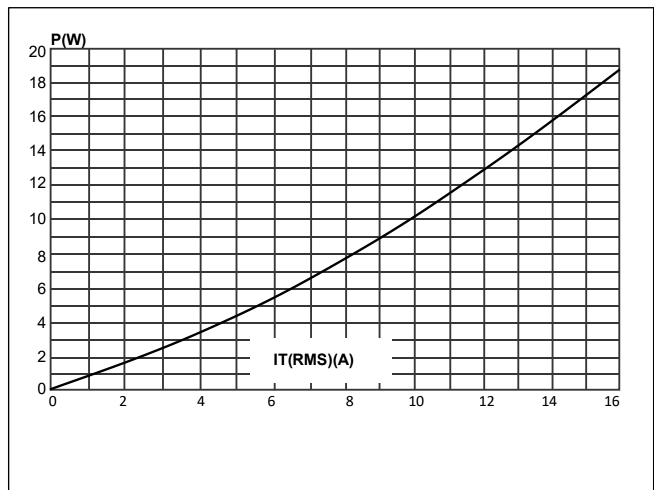
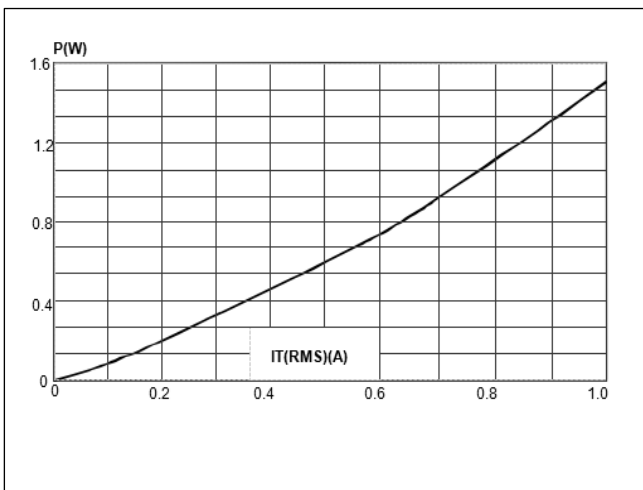
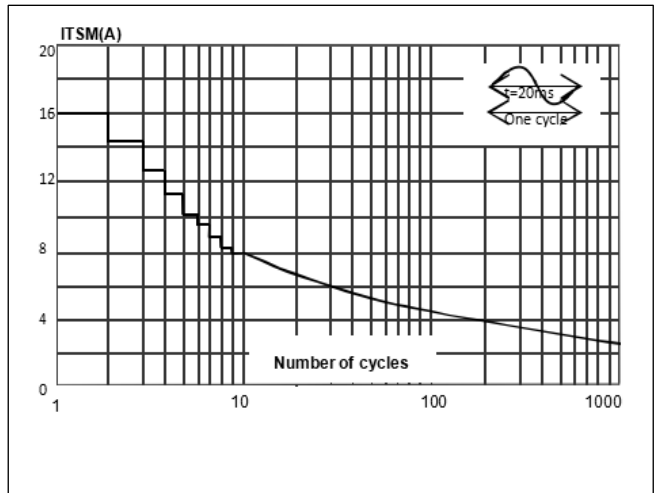
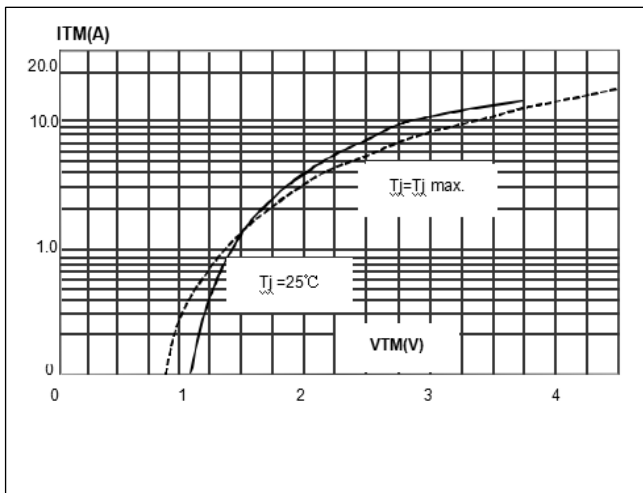
Naming & Marking

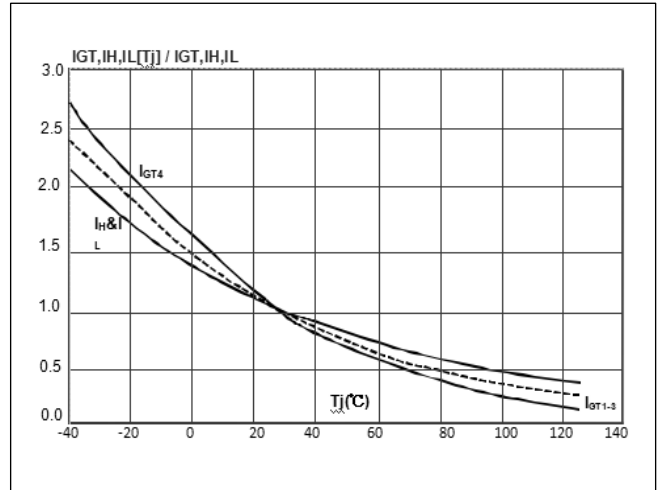
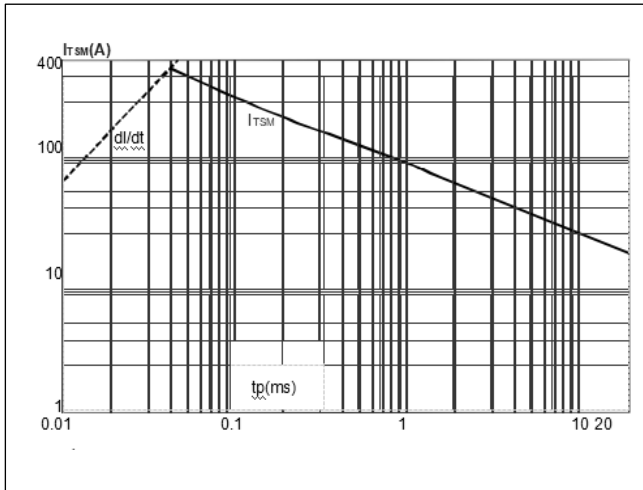


202:

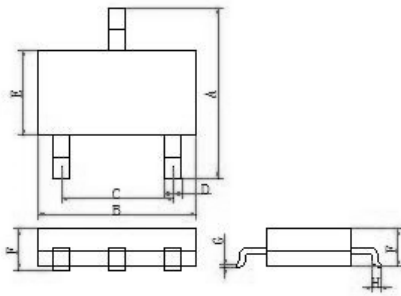
- first 2 is last digit of year 2022
- 02 means second week of 2022

Characteristics



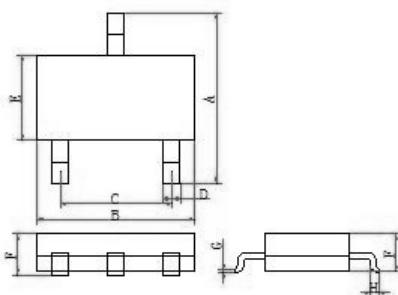


Dimension



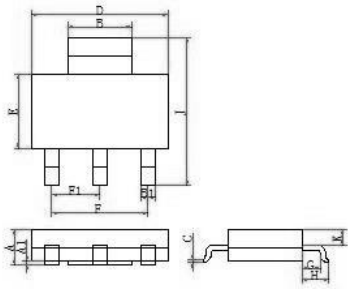
| REF. | DIMENSIONS | REF. | DIMENSIONS |
|------|----------------|------|-----------------|
| | Millimeters | | Millimeters |
| | Type | | Type |
| A | 2.4 ± 0.2 | E | 1.3 ± 0.2 |
| B | 2.9 ± 0.2 | F | 1 ± 0.08 |
| C | 1.9 ± 0.15 | G | 0.1 ± 0.08 |
| D | 0.4 ± 0.1 | H | 0.25 ± 0.08 |

SOT-23

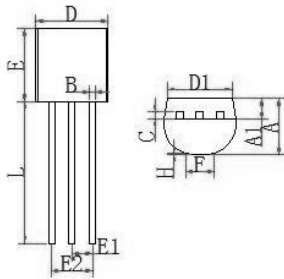


| REF. | DIMENSIONS | REF. | DIMENSIONS |
|------|----------------|------|-----------------|
| | Millimeters | | Millimeters |
| | Type | | Type |
| A | 2.8 ± 0.2 | E | 1.58 ± 0.2 |
| B | 2.9 ± 0.2 | F | 1.3 ± 0.08 |
| C | 1.9 ± 0.15 | G | 0.15 ± 0.05 |
| D | 0.4 ± 0.1 | H | 0.45 ± 0.08 |

SOT-23-3L


SOT-223

| REF. | DIMENSIONS | | REF. | DIMENSIONS | |
|------|-------------|--|------|-------------|--|
| | Millimeters | | | Millimeters | |
| | Type | | | Type | |
| A | 1.65±0.2 | | F | 4.6±0.1 | |
| A1 | 0.06±0.04 | | F1 | 2.3 | |
| B | 3.0±0.1 | | G | 1.0±0.2 | |
| B1 | 0.75±0.1 | | H | 1.75±0.1 | |
| C | 0.28±0.08 | | J | 6.9±0.2 | |
| D | 6.4±0.2 | | K | 0.8±0.1 | |
| E | 3.5±0.2 | | | | |


TO-92

| REF. | DIMENSIONS | | REF. | DIMENSIONS | |
|------|-------------|--|------|-------------|--|
| | Millimeters | | | Millimeters | |
| | Type | | | Type | |
| A | 3.55±0.2 | | E | 4.6±0.1 | |
| A1 | 2.3±0.2 | | E1 | 1.27±0.05 | |
| B | 0.45±0.05 | | E2 | 1.27±0.05 | |
| C | 0.38±0.05 | | F | 0.3±0.05 | |
| D | 4.6±0.2 | | H | 1.5±0.1 | |
| D1 | 4.2±0.2 | | L | 14.3±0.2 | |

Revision history of Specification

| Version | Change Items | Effective Date |
|---------|-----------------|----------------|
| 1.0 | Initial Release | 13-Aug-2021 |
| | | |