

## 12A Standard SCRs

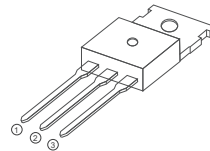
### FEATURES

- > IT(RMS):12A
- > VGT: 1V
- > VDRM VRRM:600Vand800V

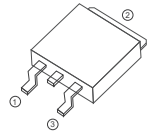
### APPLICATIONS

Washing machine,vacuums, massager,solid state relay,

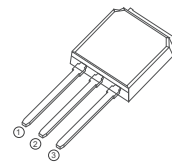
AC Motor speed regulation and so on.



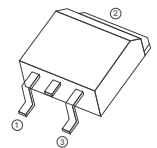
BT151 TO-220C



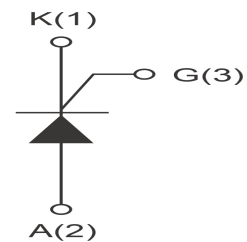
BT151D TO-252



BT151I TO-251



BT151K TO-263



### Absolute Maximum Ratings (T<sub>j</sub>=25°C unless otherwise specified)

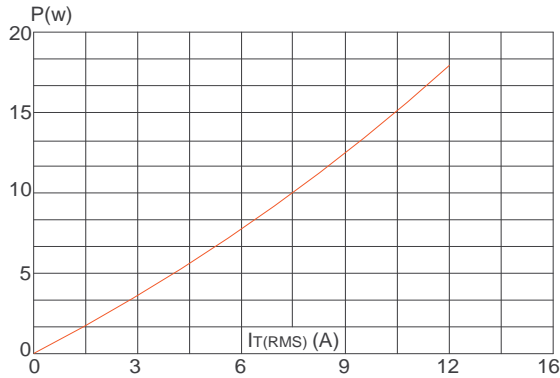
| Symbol           | Parameter                         | Conditions                    | Ratings | Unit             |
|------------------|-----------------------------------|-------------------------------|---------|------------------|
| VDRM<br>VRRM     | Repetitive Peak Off-State Voltage | BT151                         | 600     | V                |
| IT(RMS)          | R.M.S On-State Current            | T <sub>c</sub> =105°C         | 12      | A                |
| IT(AV)           | On-state average current          | T <sub>c</sub> =105°C         | 7.5     | A                |
| ITSM             | Surge On-State Current            | T <sub>p</sub> =10ms/tp=8.3ms | 120/132 | A                |
| I <sup>2</sup> t | I <sup>2</sup> t for fusing       | T <sub>p</sub> =10ms          | 75      | A <sup>2</sup> s |
| PGM              | Peak Gate Power Dissipation       | T <sub>j</sub> =125°C         | 2       | W                |
| PG(AV)           | Average Gate Power Dissipation    | T <sub>j</sub> =125°C         | 0.5     | W                |
| T <sub>j</sub>   | Operating Junction Temperature    |                               | ~40~125 | °C               |
| TSTG             | Storage Temperature               |                               | ~40~150 | °C               |

## Electrical Characteristics (T<sub>j</sub>=25°C unless otherwise specified)

| Symbol               | Parameter                                    | Test Conditions  | Value | Unit |
|----------------------|--|--|-------|------|
| IDRM                 | Repetitive Peak Off-State Current            | T <sub>c</sub> =25°C   | ≤10   | uA   |
|                      |  | T <sub>c</sub> =125°C  | ≤1    | mA   |
| IRRM                 | Repetitive Peak Reverse Current              | T <sub>c</sub> =25°C   | ≤10   | uA   |
|                      |  | T <sub>c</sub> =125°C  | ≤1    | mA   |
| V <sub>TM</sub>      | Forward "on" voltage                         | I <sub>T</sub> =23A, t <sub>p</sub> =380us   | ≤1.7  | V    |
| V <sub>GT</sub>      | Gate trigger voltage                         | V <sub>D</sub> =12V, R <sub>L</sub> =30Ω   | ≤1.0  | V    |
| di/dt                | Critical rate of rise of on-state current    | T <sub>j</sub> =125°C, I <sub>G</sub> =2xI <sub>GT</sub> , t <sub>r</sub> ≤100ns                         | ≥50   | A/us |
| I <sub>GT</sub>      | Gate trigger current                         | V <sub>D</sub> =12V, I <sub>T</sub> =0.1A  | ≤20   | mA   |
| I <sub>L</sub>       | Latching current                             | I <sub>G</sub> =1.2I <sub>GT</sub>   | ≤40   | mA   |
| I <sub>H</sub>       | Holding current                              | I <sub>T</sub> =0.1A   | ≤30   | mA   |
| V <sub>GD</sub>      | Gate non-trigger voltage                     | V <sub>D</sub> =V <sub>DRM</sub> ,<br>T <sub>J</sub> =125°C, R <sub>L</sub> =3.3KΩ, R <sub>GK</sub> =1KΩ | ≥0.25 | V    |
| dv/dt                | Critical-rate of rise of commutation voltage | T <sub>J</sub> =125°C, V <sub>D</sub> =2/3V <sub>DRM</sub> , Gate open circuit                           | ≥200  | V/us |
| R <sub>th(j-c)</sub> | Thermal resistance                           | Junction to case   | 1     | °C/W |
| R <sub>th(j-a)</sub> | Thermal resistance                           | Junction to ambient  | 50    | °C/W |

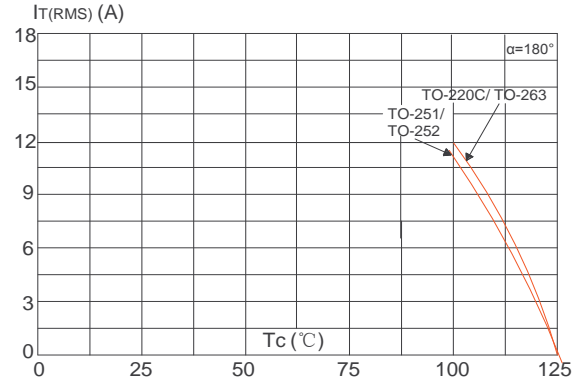
**FIG1**

Maximum power dissipation versus RMS on-state current



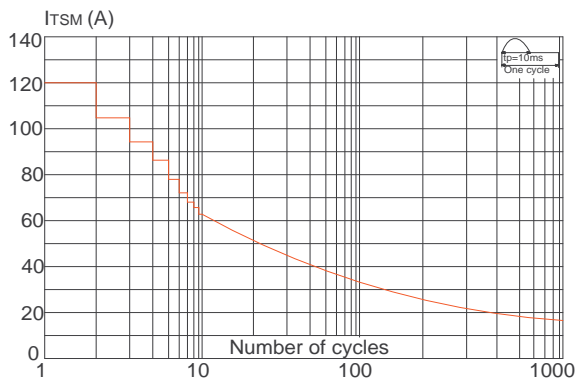
**FIG2**

RMS on-state current versus case temperature



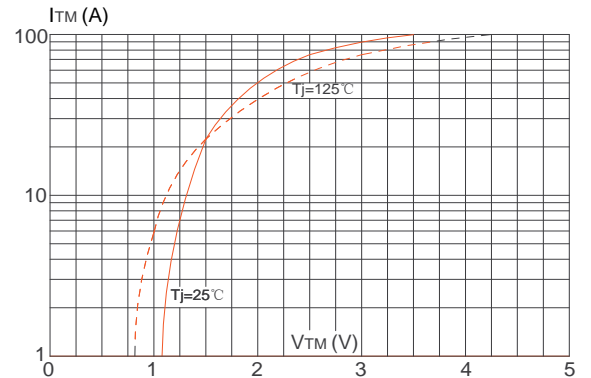
**FIG3**

Surge peak on-state current versus number of cycles



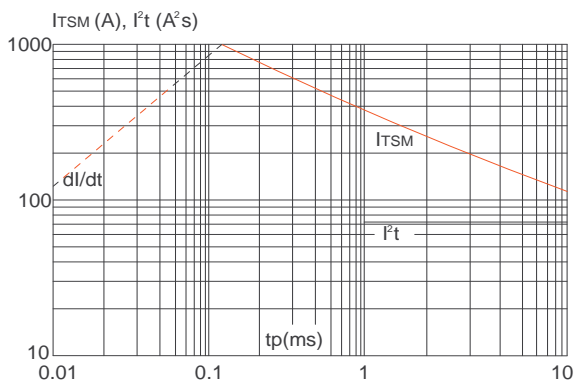
**FIG4**

On-state characteristics (maximum values)



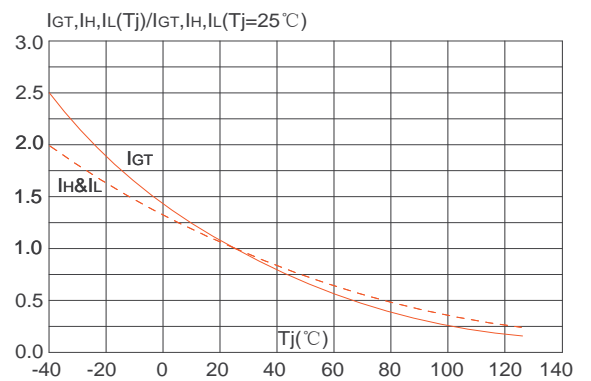
**FIG5**

Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 20\mu s$ , and corresponding value of  $I^2t$  ( $di/dt < 100A/\mu s$ )

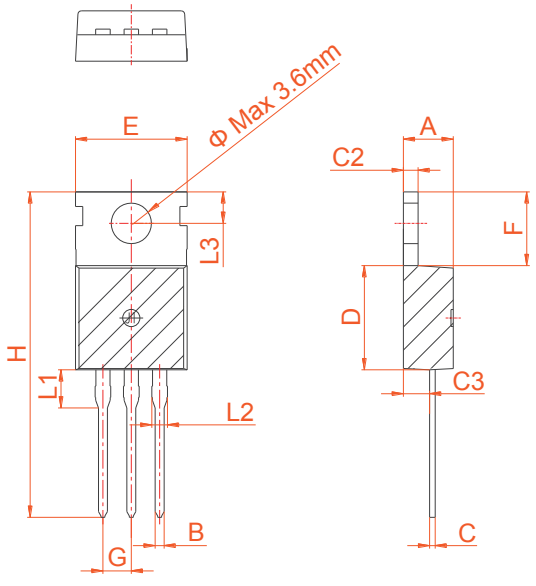


**FIG6**

Relative variations of gate trigger current, holding current and latching current versus junction temperature

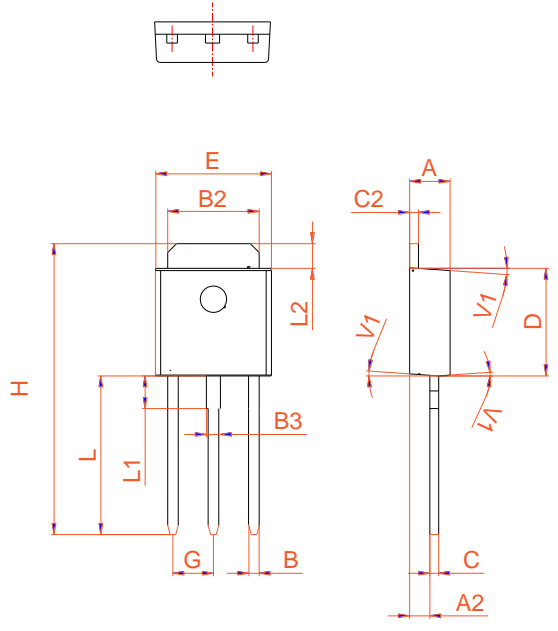


## PACKAGE MECHANICAL DATA

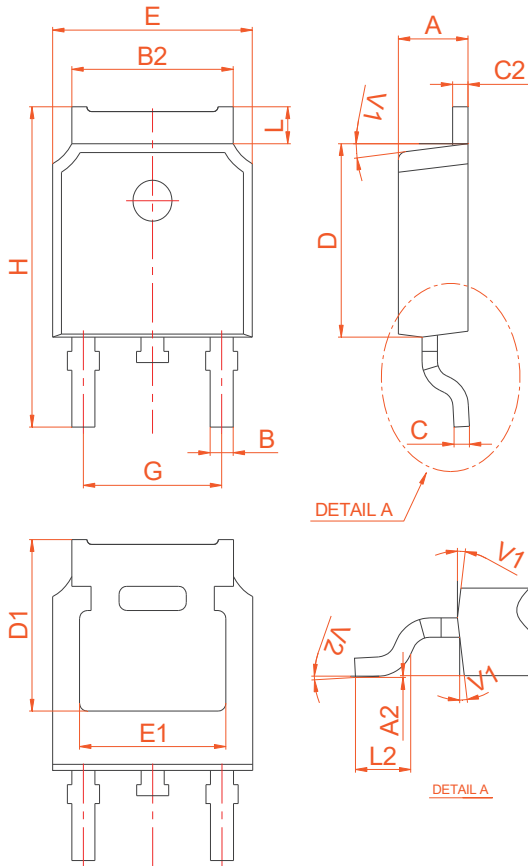


| Ref. | Dimensions  |      |      |        |       |       |
|------|-------------|------|------|--------|-------|-------|
|      | Millimeters |      |      | Inches |       |       |
|      | Min.        | Typ. | Max. | Min.   | Typ.  | Max.  |
| A    | 4.40        |      | 4.60 | 0.173  |       | 0.181 |
| B    | 0.70        |      | 0.90 | 0.028  |       | 0.035 |
| C    | 0.45        |      | 0.60 | 0.018  |       | 0.024 |
| C2   | 1.23        |      | 1.32 | 0.048  |       | 0.052 |
| 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    |             | 2.54 |      |        | 0.1   |       |
| H    | 28.0        |      | 29.8 | 1.102  |       | 1.173 |
| L1   |             | 3.39 |      |        | 0.133 |       |
| L2   | 1.14        |      | 1.70 | 0.045  |       | 0.067 |
| L3   | 2.65        |      | 2.95 | 0.104  |       | 0.116 |
| Φ    |             | 3.6  |      |        | 0.142 |       |

| 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°    |       |



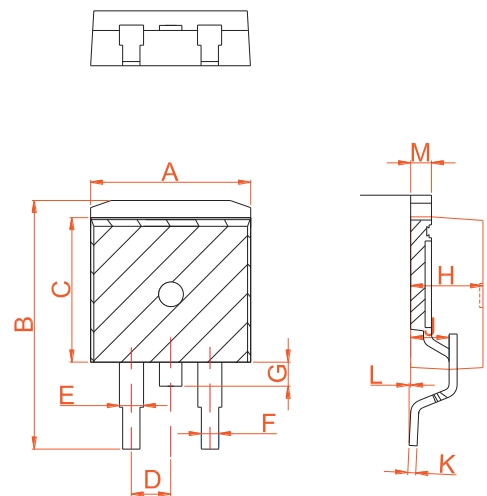
## PACKAGE MECHANICAL DATA



TO-252

| Ref. | Dimensions  |      |      |        |       |       |
|------|-------------|------|------|--------|-------|-------|
|      | Millimeters |      |      | Inches |       |       |
|      | Min.        | Typ. | Max. | Min.   | Typ.  | Max.  |
| A    | 2.20        |      | 2.40 | 0.086  |       | 0.095 |
| A2   | 0.03        |      | 0.23 | 0.001  |       | 0.009 |
| B    | 0.55        |      | 0.65 | 0.022  |       | 0.026 |
| B2   | 5.10        |      | 5.40 | 0.200  |       | 0.213 |
| C    | 0.45        |      | 0.55 | 0.018  |       | 0.022 |
| C2   | 2.70        |      | 2.90 | 0.106  |       | 0.114 |
| D    | 6.00        |      | 6.20 | 0.236  |       | 0.244 |
| E    | 6.40        |      | 6.70 | 0.252  |       | 0.264 |
| G    | 4.40        |      | 4.70 | 0.173  |       | 0.185 |
| H    | 9.35        |      | 10.6 | 0.368  |       | 0.417 |
| L1   | 1.30        |      | 1.70 | 0.051  |       | 0.067 |
| L2   | 1.37        |      | 1.50 | 0.054  |       | 0.059 |
| L3   |             | 0.8  |      |        | 0.031 |       |
| L4   |             | 0.8  |      |        | 0.031 |       |
| V1   |             | 4°   |      |        | 4°    |       |
| V2   | 0°          |      | 8°   | 0°     |       | 8°    |

| Ref. | Dimensions  |      |       |        |       |       |
|------|-------------|------|-------|--------|-------|-------|
|      | Millimeters |      |       | Inches |       |       |
|      | Min.        | Typ. | Max.  | Min.   | Typ.  | Max.  |
| A    | 9.90        |      | 10.20 | 0.390  |       | 0.402 |
| B    | 14.70       |      | 15.80 | 0.579  |       | 0.622 |
| C    | 9.4         |      | 9.6   | 0.37   |       | 0.378 |
| D    |             | 2.54 |       |        | 0.100 |       |
| E    | 1.20        |      | 1.40  | 0.047  |       | 0.055 |
| F    | 0.75        |      | 0.85  | 0.029  |       | 0.033 |
| G    |             |      | 1.75  |        |       | 0.069 |
| H    | 4.40        |      | 4.70  | 0.173  |       | 0.185 |
| J    | 2.30        |      | 2.70  | 0.091  |       | 0.106 |
| K    | 0.38        |      | 0.55  | 0.015  |       | 0.022 |
| L    | 0           | 0.10 | 0.25  | 0      | 0.004 | 0.010 |
| M    | 1.25        |      | 1.35  | 0.049  |       | 0.053 |



TO-263

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Triacs](#) category:*

*Click to view products by [SLKORMICRO](#) manufacturer:*

Other Similar products are found below :

[BT137-600-0Q](#) [OT415Q](#) [2N6075A](#) [NTE5688](#) [BTA2008W-800D,135](#) [D31410](#) [ACS102-5T1](#) [ACS102-5TA](#) [MAC97A4G](#) [Z0107MAG](#)  
[Z0107MARL1G](#) [Z0109MARLRPG](#) [MAC97A8-TA](#) [BT131W-800](#) [BT138S-800E](#) [BT137S-800E](#) [BT136S-600D](#) [BTA08-600TWRG](#)  
[X0405MF-252](#) [MAC97A8-23-3L](#) [MCR100-8-23-3L](#) [BTA24-800B](#) [BT151-600R](#) [BT131](#) [BTA41-1200B](#) [MCR16](#) [MCR100-8](#) [MCR16](#)  
[BT131-800D](#) [BT134-800E](#) [BT138-800E](#) [MCR100-8](#) [BTA12-800BWRG\(UMW\)](#) [BTA24-600BWRG\(UMW\)](#) [BTA24-800BWRG\(UMW\)](#)  
[BTA12-600BWRG\(UMW\)](#) [BTA16-600CRG\(UMW\)](#) [BTA12-600CRG\(UMW\)](#) [BS61089B-8](#) [BT134W-600E](#) [BT134-600E](#) [JR0405S3](#)  
[BCR12PM](#) [MAC97A6](#) [BTA24-800CRG\(UMW\)](#) [BTA16-600BRG\(UMW\)](#) [BTA16-800BWRG\(UMW\)](#) [Z0109-NN](#) [BTA41](#) [MCR100-8U](#)