

| SYMBOL                               | CHARACTERISTIC   | TEST CONDITIONS   | T <sub>j</sub> (°C) | VALUE |      |       | UNIT                             |
|--------------------------------------|--|---|---------------------|-------|------|-------|----------------------------------|
|                                      |  |   |                     | Min   | Type | Max   |                                  |
| I <sub>T(AV)</sub>                   | Mean on-state current  | 180° half sine wave 50Hz<br>Double side cooled, T <sub>HS</sub> =55°C   | 115                 |       |      | 786   | A                                |
| I <sub>T(AV)</sub>                   | Mean on-state current  | 180° half sine wave 50Hz<br>Double side cooled, T <sub>HS</sub> =80°C   | 115                 |       |      | 528   | A                                |
| V <sub>DRM</sub><br>V <sub>RRM</sub> | Repetitive peak off-state voltage<br>Repetitive peak reverse voltage | V <sub>DRM</sub> &V <sub>RRM</sub> tp=10ms<br>V <sub>DSM</sub> &V <sub>RSM</sub> = V <sub>DRM</sub> &V <sub>RRM</sub> +100V<br>respectively | 115                 | 800   |      | 1800  | V                                |
| I <sub>DRM</sub><br>I <sub>RRM</sub> | Repetitive peak current  | at V <sub>DRM</sub><br>at V <sub>RRM</sub>  | 115                 |       |      | 50    | mA                               |
| I <sub>TSM</sub>                     | Surge on-state current   | 10ms half sine wave   | 115                 |       |      | 7.5   | KA                               |
| I <sup>2</sup> T                     | I <sup>2</sup> T for fusing coordination                             | V <sub>R</sub> =0.6V <sub>RRM</sub>   |                     |       |      | 281   | A <sup>2</sup> s*10 <sup>3</sup> |
| V <sub>TO</sub>                      | Threshold voltage  |   | 115                 |       |      | 1.42  | V                                |
| r <sub>T</sub>                       | On-state slop resistance   |   |                     |       |      | 0.50  | mΩ                               |
| V <sub>TM</sub>                      | Peak on-state voltage  | I <sub>TM</sub> =1800A, F=18KN  | 115                 |       |      | 2.32  | V                                |
| dv/dt                                | Critical rate of rise of off-state voltage                           | V <sub>DM</sub> =0.67V <sub>DRM</sub>   | 115                 |       |      | 500   | V/μs                             |
| di/dt                                | Critical rate of rise of on-state current                            | From 67%V <sub>DRM</sub><br>to 1000A, Gate source 1.5A<br>t <sub>r</sub> ≤0.5μs Repetitive  | 115                 |       |      | 300   | A/μs                             |
| I <sub>rm</sub>                      | Reverse recovery current   | I <sub>TM</sub> =600A, tp=1000μs,<br>di/dt=-40A/μs,<br>V <sub>R</sub> =50V  | 115                 |       | 70   |       | A                                |
| t <sub>rr</sub>                      | Reverse recovery time  |   |                     |       | 4.4  |       | μs                               |
| Q <sub>rr</sub>                      | Recovery charge  |   |                     |       | 155  | 180   | μC                               |
| t <sub>q</sub>                       | Circuit commutated turn-off time                                     | I <sub>TM</sub> =600A, tp=1000μs, V <sub>R</sub> =50V<br>dv/dt=30V/μs, di/dt=-40A/μs  | 115                 | 15    |      | 35    |                                  |
| I <sub>GT</sub>                      | Gate trigger current   | V <sub>A</sub> =12V, I <sub>A</sub> =1A   | 25                  | 40    |      | 300   | mA                               |
| V <sub>GT</sub>                      | Gate trigger voltage   |   |                     | 0.9   |      | 3.0   | V                                |
| I <sub>H</sub>                       | Holding current  |   |                     | 20    |      | 400   | mA                               |
| V <sub>GD</sub>                      | Non-trigger gate voltage   | At 67%V <sub>DRM</sub>  | 115                 |       |      | 0.3   | V                                |
| R <sub>th(j-h)</sub>                 | Thermal resistance<br>Junction to heatsink                           | At 180° sine double side cooled<br>Clamping force 18KN  |                     |       |      | 0.032 | °C /W                            |
| F <sub>m</sub>                       | Mounting force   |   |                     | 15    |      | 20    | KN                               |
| T <sub>stg</sub>                     | Stored temperature   |   |                     | -40   |      | 140   | °C                               |
| W <sub>t</sub>                       | Weight   |   |                     |       | 360  |       | g                                |
| Outline                              | KT39cT40   |   |                     |       |      |       |                                  |

### Outline

