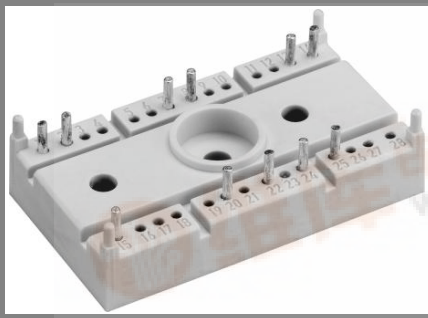


# SK 30 GD 123



SEMITOP® 3

## IGBT Module

### SK 30 GD 123

#### Preliminary Data

#### Features

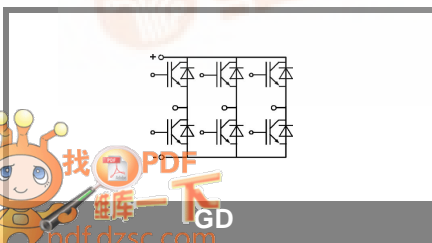
- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- N channel, homogeneous Silicon structure (NPT-Non punchthrough IGBT)
- High short circuit capability
- Low tail current with low temperature dependence
- UL recognized, file no. E 63532

#### Typical Applications

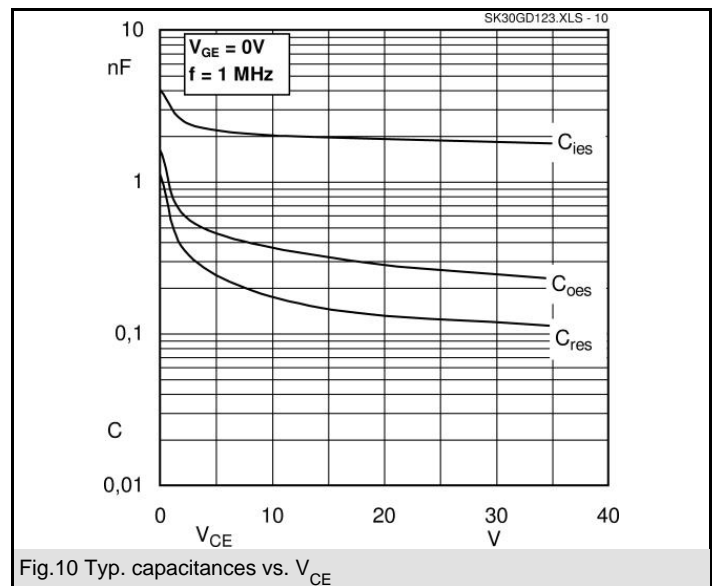
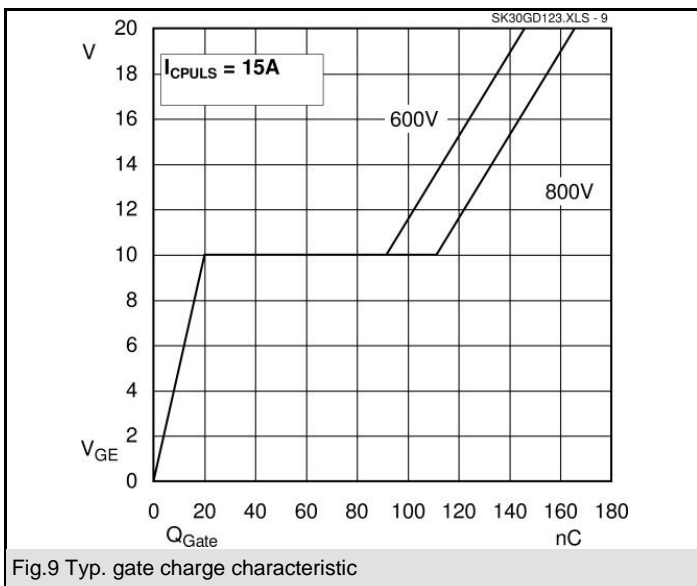
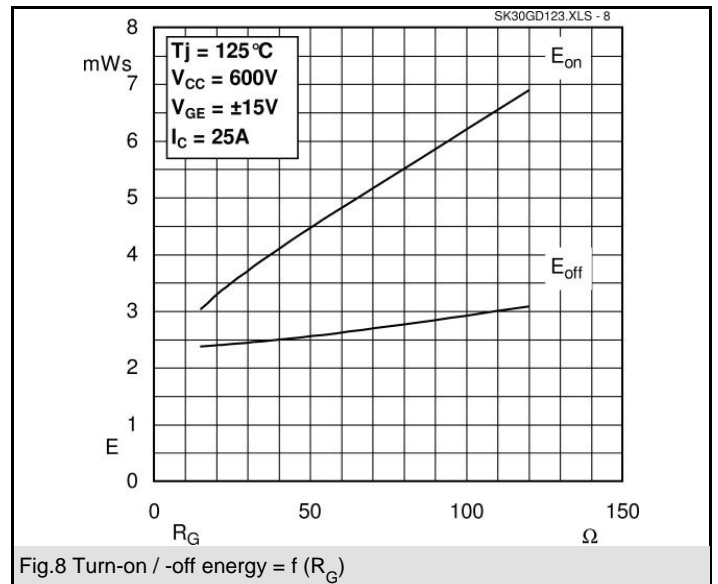
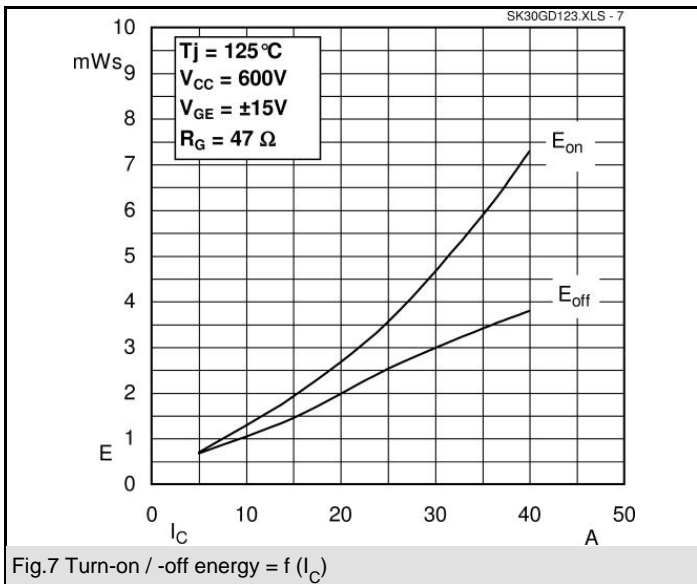
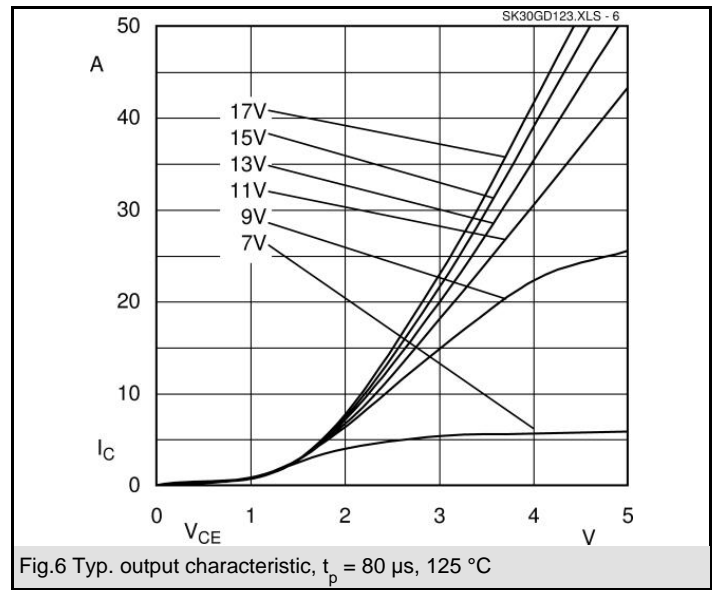
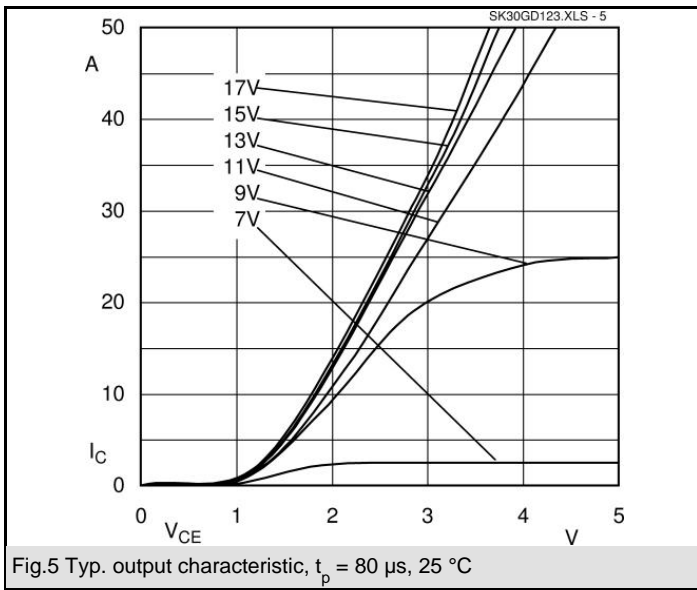
- Switching ( not for linear use )
- Inverter
- Switched mode power supplies
- UPS

| Absolute Maximum Ratings              |   | T <sub>s</sub> = 25 °C, unless otherwise specified |       |
|---------------------------------------|---|--|-------|
| Symbol                                | Conditions  | Values   | Units |
| <b>IGBT</b>                           |   |  |       |
| V <sub>CES</sub>                      |   | 1200   | V     |
| V <sub>GES</sub>                      |   | ± 20   | V     |
| I <sub>C</sub>                        | T <sub>s</sub> = 25 (80) °C;                        | 33 (22)  | A     |
| I <sub>CM</sub>                       | t <sub>p</sub> < 1 ms; T <sub>s</sub> = 25 (80) °C; | 66 (44)  | A     |
| T <sub>j</sub>                        |   | - 40 ... + 150                                     | °C    |
| <b>Inverse/Freewheeling CAL diode</b> |   |  |       |
| I <sub>F</sub>                        | T <sub>s</sub> = 25 (80) °C;                        | 24 (17)  | A     |
| I <sub>FM</sub> = - I <sub>CM</sub>   | t <sub>p</sub> < 1 ms; T <sub>s</sub> = 25 (80) °C; | 48 (34)  | A     |
| T <sub>j</sub>                        |   | - 40 ... + 150                                     | °C    |
| T <sub>stg</sub>                      |   | - 40 ... + 125                                     | °C    |
| T <sub>sol</sub>                      | Terminals, 10 s                                     | 260  | °C    |
| V <sub>isol</sub>                     | AC 50 Hz, r.m.s. 1 min. / 1 s                       | 2500 / 3000  | V     |

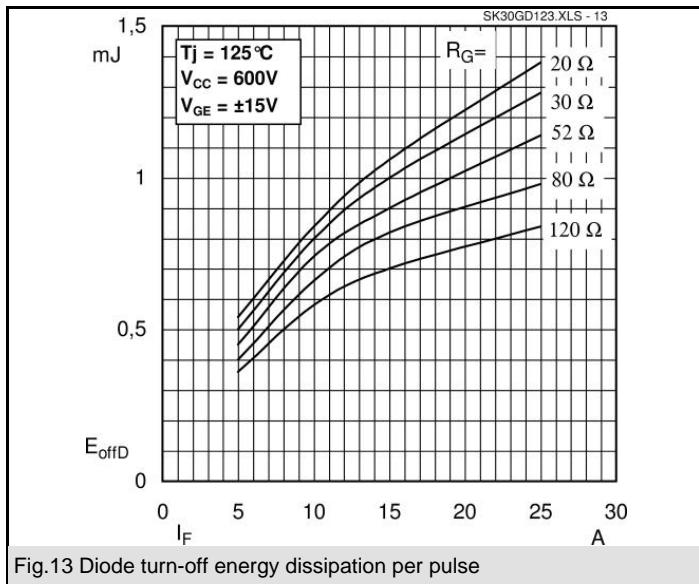
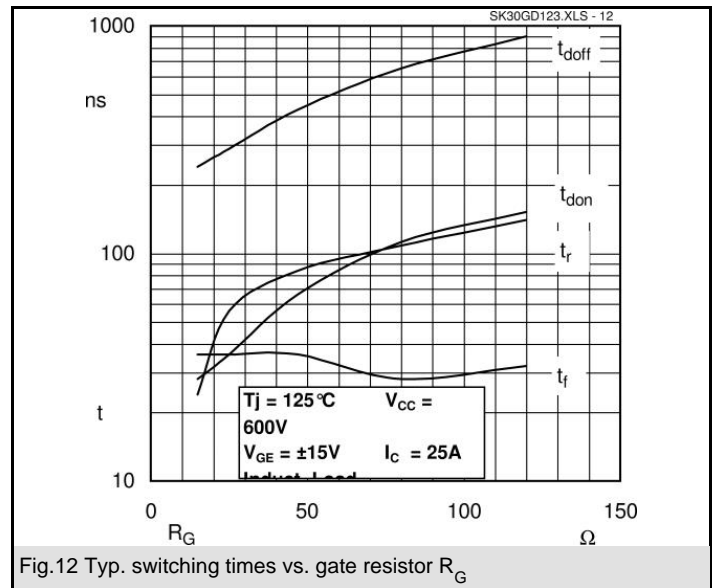
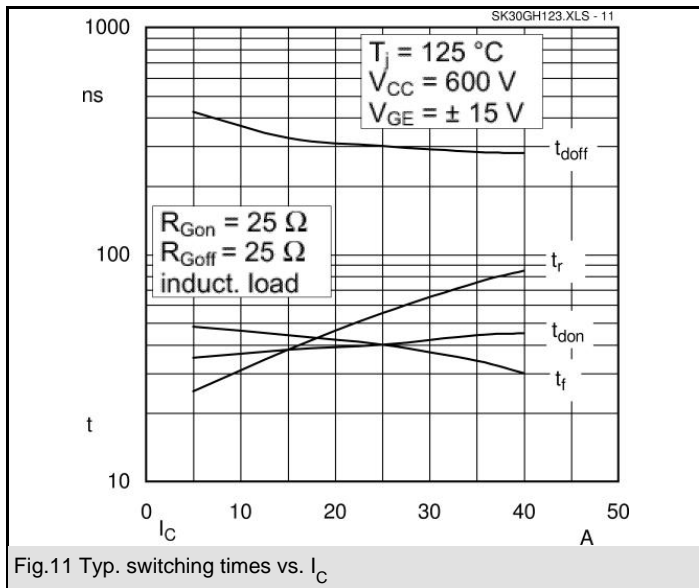
| Characteristics                       |  | T <sub>s</sub> = 25 °C, unless otherwise specified |           |           |       |
|---------------------------------------|--|--|-----------|-----------|-------|
| Symbol                                | Conditions   | min.   | typ.      | max.      | Units |
| <b>IGBT</b>                           |  |  |           |           |       |
| V <sub>CE(sat)</sub>                  | I <sub>C</sub> = 25 A, T <sub>j</sub> = 25 (125) °C                              |  | 2,5 (3,1) | 3 (3,7)   | V     |
| V <sub>GE(th)</sub>                   | V <sub>CE</sub> = V <sub>GE</sub> ; I <sub>C</sub> = 0,001 A                     | 4,5  | 5,5       | 6,5       | V     |
| C <sub>ies</sub>                      | V <sub>CE</sub> = 25 V; V <sub>GE</sub> = 0 V; 1 MHz                             |  | 1,65      |           | nF    |
| R <sub>th(j-s)</sub>                  | per IGBT   |  |           | 1         | K/W   |
|                                       | per module   |  |           |           | K/W   |
| t <sub>d(on)</sub>                    | under following conditions:<br>V <sub>CC</sub> = 600 V, V <sub>GE</sub> = ± 15 V |  | 65        |           | ns    |
| t <sub>r</sub>                        | I <sub>C</sub> = 25 A, T <sub>j</sub> = 125 °C                                   |  | 100       |           | ns    |
| t <sub>d(off)</sub>                   | R <sub>Gon</sub> = R <sub>Goff</sub> = 47 Ω                                      |  | 430       |           | ns    |
| t <sub>f</sub>                        |  |  | 35        |           | ns    |
| E <sub>on</sub> + E <sub>off</sub>    | Inductive load   |  | 7         |           | mJ    |
| <b>Inverse/Freewheeling CAL diode</b> |  |  |           |           |       |
| V <sub>F</sub> = V <sub>EC</sub>      | I <sub>F</sub> = 15 A; T <sub>j</sub> = 25 (125) °C                              |  | 2 (1,8)   | 2,5 (2,3) | V     |
| V <sub>(TO)</sub>                     | T <sub>j</sub> = (125) °C  |  | (1)       | (1,2)     | V     |
| r <sub>T</sub>                        | T <sub>j</sub> = (125) °C  |  | (53)      | (73)      | mΩ    |
| R <sub>th(j-s)</sub>                  |  |  |           | 1,7       | K/W   |
|                                       | under following conditions:  |  |           |           |       |
| I <sub>RRM</sub>                      | I <sub>F</sub> = 15 A; V <sub>R</sub> = 600 V                                    |  | 16        |           | A     |
| Q <sub>rr</sub>                       | di <sub>F</sub> /dt = -200 A/μs  |  | 2,7       |           | μC    |
| E <sub>off</sub>                      | V <sub>GE</sub> = 0 V; T <sub>j</sub> = 125 °C                                   |  | 0,6       |           | mJ    |
| <b>Mechanical data</b>                |  |  |           |           |       |
| M1                                    | mounting torque  |  |           | 2,5       | Nm    |
| w                                     |  |  | 30        |           | g     |
| Case                                  | SEMITOP® 3   |  | T 12      |           |       |



# SK 30 GD 123



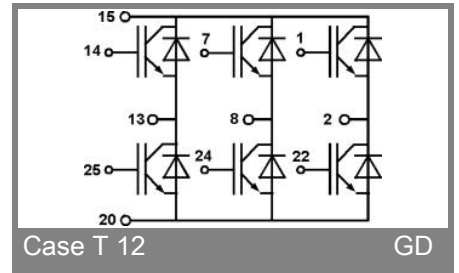
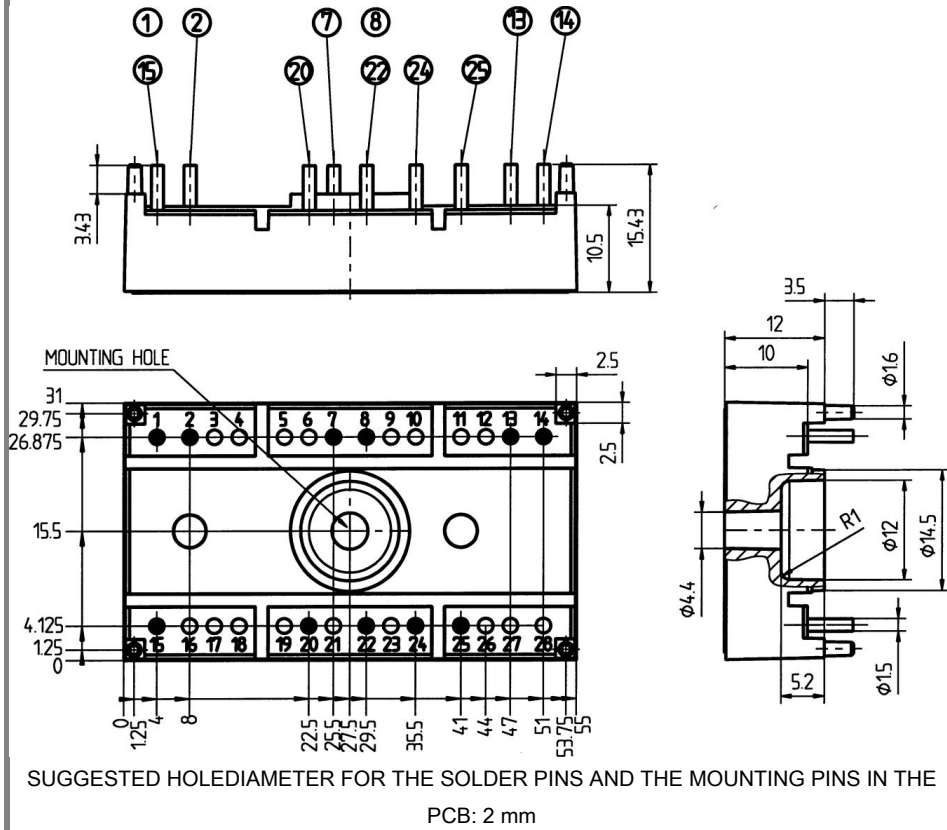
# SK 30 GD 123



# SK 30 GD 123

UL Recognized  
File no. E 63532

Dimensions in mm



Case T 12

This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

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