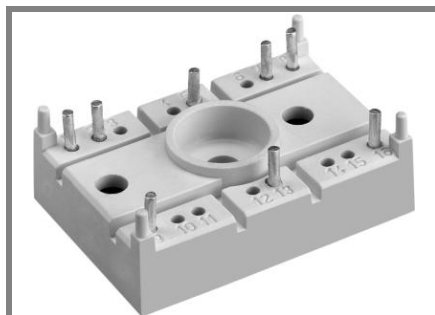


SK 10 GH 123



SEMITOP[®]2

IGBT Module

SK 10 GH 123

Preliminary Data

Features

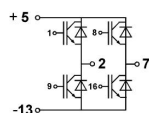
- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- N channel, homogeneous Silicon structure (NPT-Non punchthrough IGBT)
- High short circuit capability
- Low tail current with low temperature dependence
- UL recognized, file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

Typical Applications

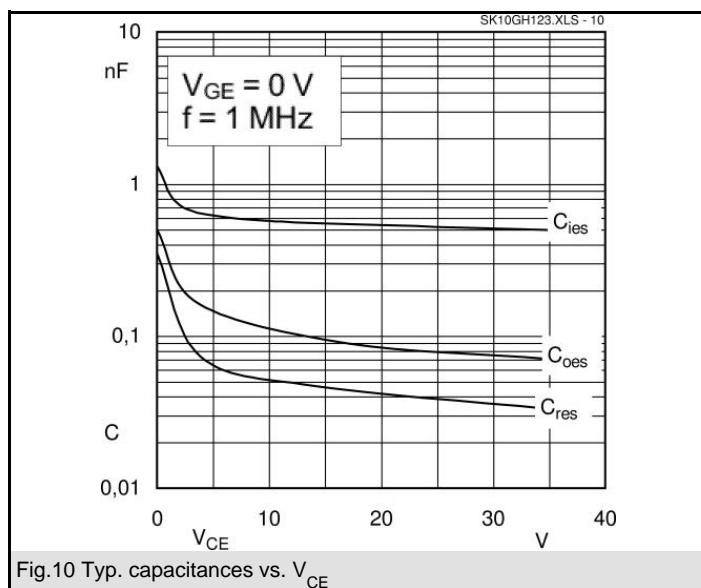
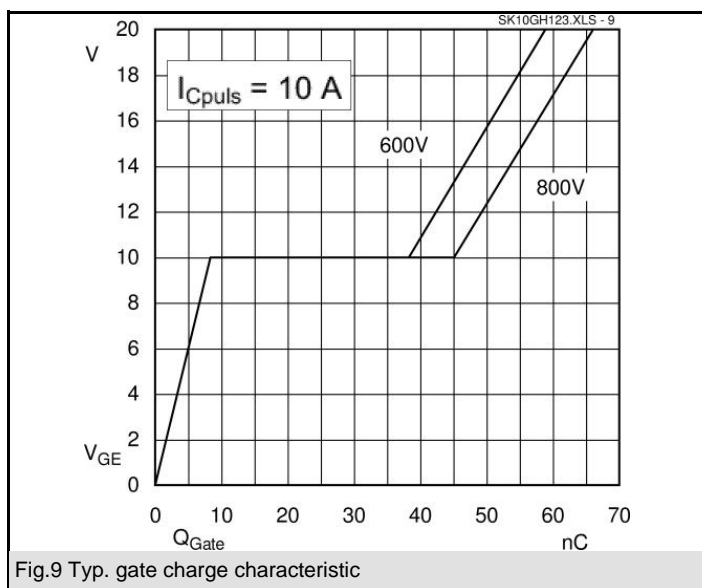
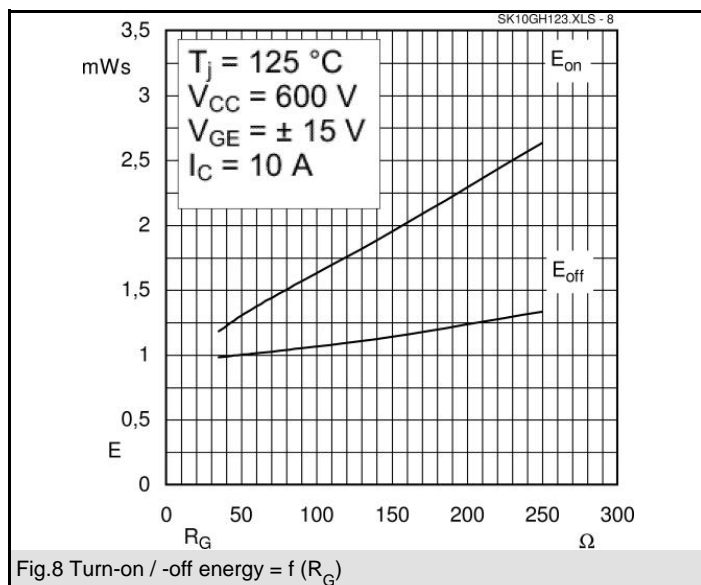
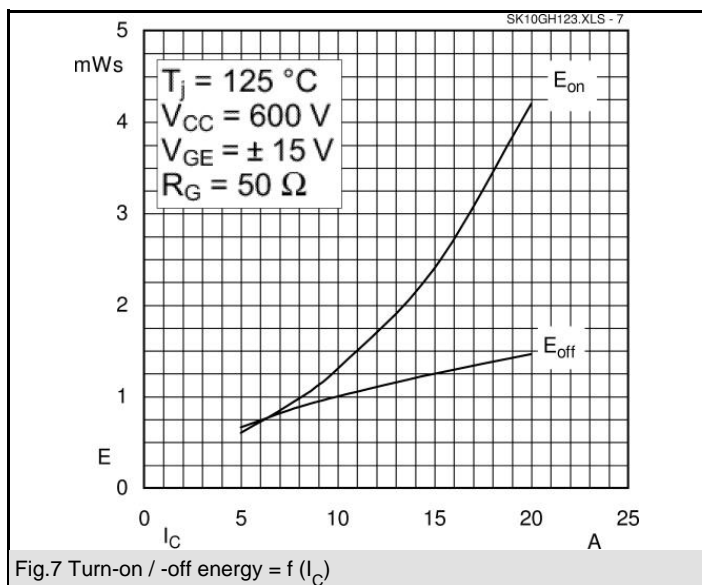
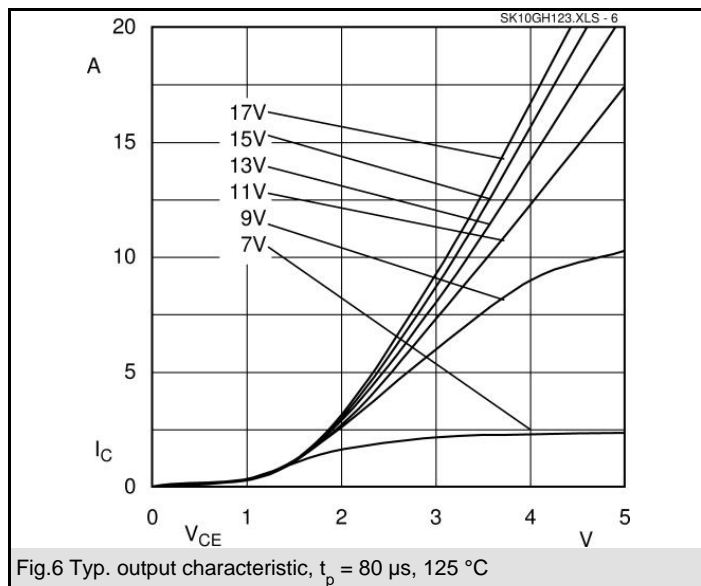
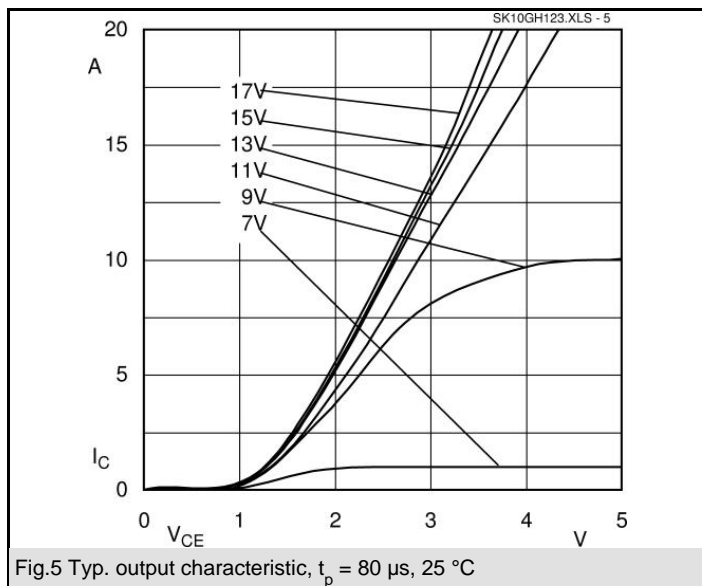
- Switching (not for linear use)
- Inverter
- Switched mode power supplies
- UPS

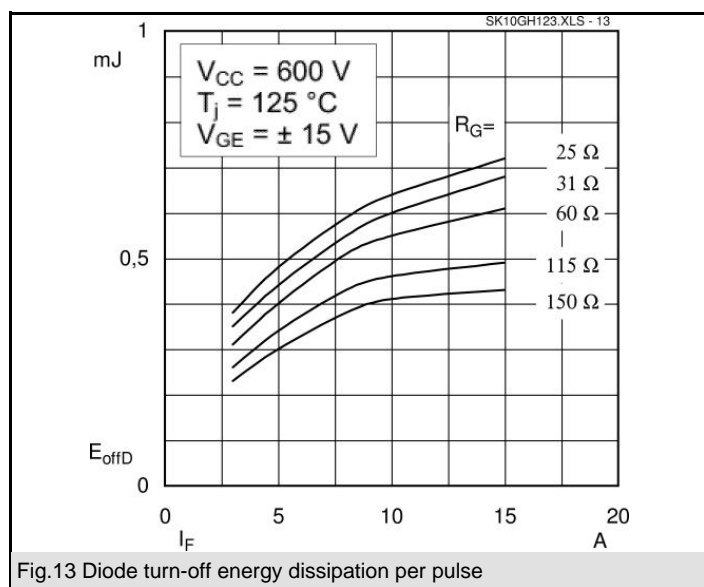
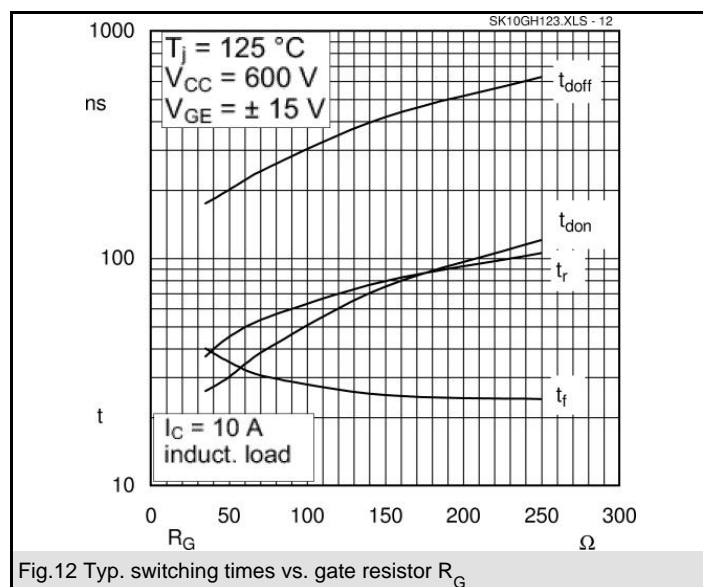
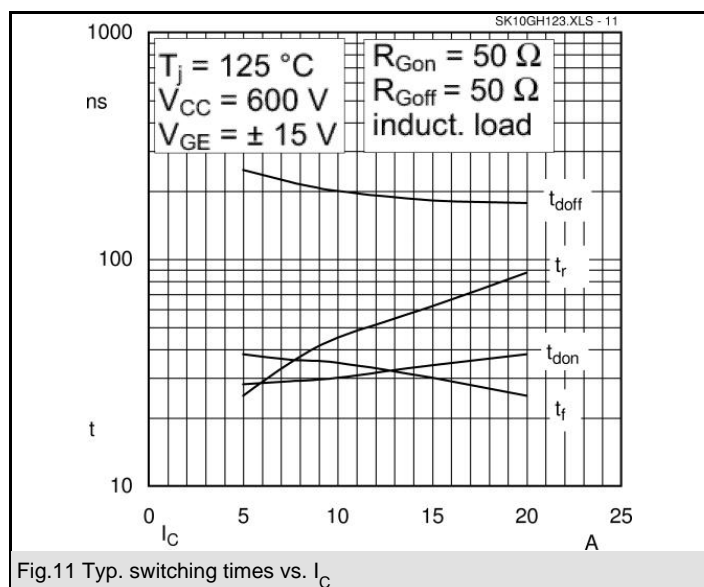
| Absolute Maximum Ratings | | $T_s = 25\text{ °C}$, unless otherwise specified | |
|---|---|---|-------|
| Symbol | Conditions | Values | Units |
| IGBT | | | |
| V_{CES} | | 1200 | V |
| V_{GES} | | ± 20 | V |
| I_C | $T_s = 25\text{ (80) °C}$; | 16 (11) | A |
| I_{CM} | $t_p < 1\text{ ms}$; $T_s = 25\text{ (80) °C}$; | 32 (22) | A |
| T_j | | - 40 ... + 150 | °C |
| Inverse / Freewheeling CAL diode | | | |
| I_F | $T_s = 25\text{ (80) °C}$; | 18 (12) | A |
| $I_{FM} = -I_{CM}$ | $t_p < 1\text{ ms}$; $T_s = 25\text{ (80) °C}$; | 36 (24) | A |
| T_j | | - 40 ... + 150 | °C |
| T_{stg} | | - 40 ... + 125 | °C |
| T_{sol} | Terminals, 10 s | 260 | °C |
| V_{isol} | AC 50 Hz, r.m.s. 1 min. / 1 s | 2500 / 3000 | V |

| Characteristics | | $T_s = 25\text{ °C}$, unless otherwise specified | | | |
|---|---|---|-----------|-----------|---------------|
| Symbol | Conditions | min. | typ. | max. | Units |
| IGBT | | | | | |
| $V_{CE(sat)}$ | $I_C = 10\text{ A}$, $T_j = 25\text{ (125) °C}$ | | 2,7 (3,3) | 3,2 (3,9) | V |
| $V_{GE(th)}$ | $V_{CE} = V_{GE}$; $I_C = 0,0004\text{ A}$ | 4,5 | 5,5 | 6,5 | V |
| C_{res} | $V_{CE} = 25\text{ V}$; $V_{GE} = 0\text{ V}$; 1 MHz | | 0,53 | | nF |
| $R_{th(j-s)}$ | per IGBT per module | | | 1,8 | K/W K/W |
| $t_{d(on)}$ | under following conditions: $V_{CC} = 600\text{ V}$, $V_{GE} = \pm 15\text{ V}$ | | 30 | | ns |
| t_r | $I_C = 10\text{ A}$, $T_j = 125\text{ °C}$ | | 45 | | ns |
| $t_{d(off)}$ | $R_{Gon} = R_{Goff} = 50\text{ }\Omega$ | | 200 | | ns |
| t_f | | | 35 | | ns |
| $E_{on} + E_{off}$ | Inductive load | | 2,3 | | mJ |
| Inverse / Freewheeling CAL diode | | | | | |
| $V_F = V_{EC}$ | $I_F = 10\text{ A}$; $T_j = 25\text{ (125) °C}$ | | 2 (1,8) | 2,5 (2,3) | V |
| $V_{(TO)}$ | $T_j = (125)\text{ °C}$ | | (1) | (1,2) | V |
| r_T | $T_j = (125)\text{ °C}$ | | (80) | (110) | m Ω |
| $R_{th(j-s)}$ | | | | 2,1 | K/W |
| I_{RRM} | under following conditions: $I_F = 10\text{ A}$; $V_R = 600\text{ V}$ | | 12 | | A |
| Q_{rr} | $di_F/dt = -300\text{ A}/\mu\text{s}$ | | 1,8 | | μC |
| E_{off} | $V_{GE} = 0\text{ V}$; $T_j = 125\text{ °C}$ | | 0,4 | | mJ |
| Mechanical data | | | | | |
| M1 | mounting torque | | | 2 | Nm |
| w | | | 21 | | g |
| Case | SEMITOP [®] 2 | | T 5 | | |



GH

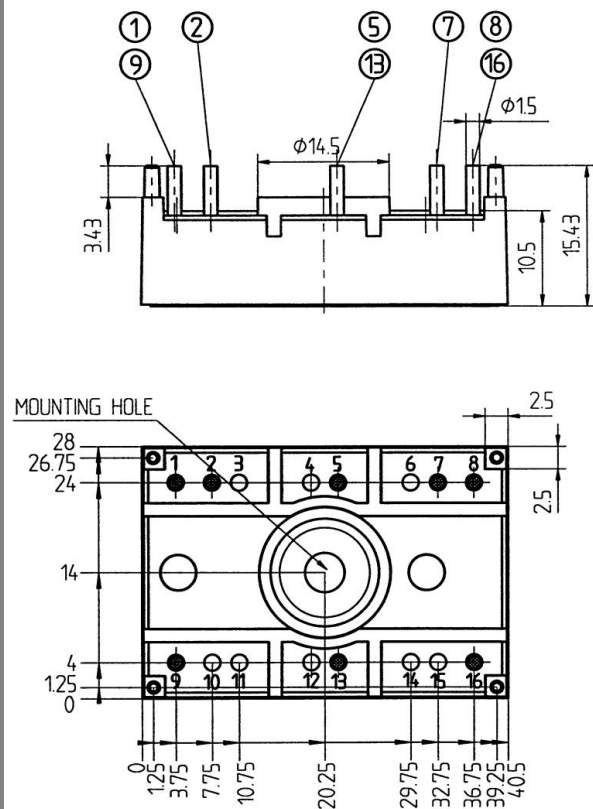




SK 10 GH 123

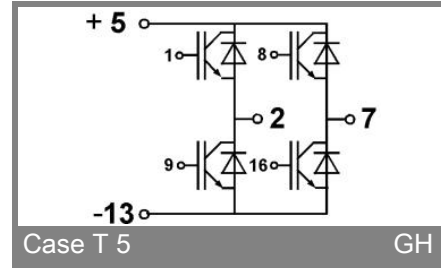
UL Recognized
File no. E 63532

Dimensions in mm



SUGGESTED HOLEDIAMETER FOR THE SOLDER PINS AND THE MOUNTING PINS IN THE
PCB: 2 mm

Case T5



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

This technical information specifies semiconductor devices but promises no characteristics. No warranty or guarantee expressed or implied is made regarding delivery, performance or suitability.