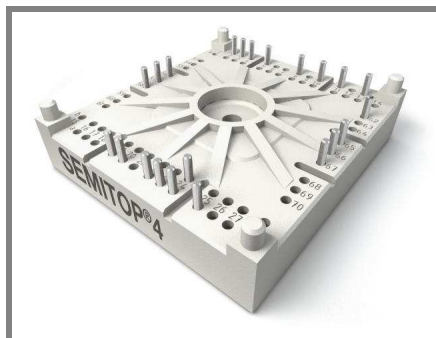


SK100GH12T4T



SEMITOP®4

IGBT module

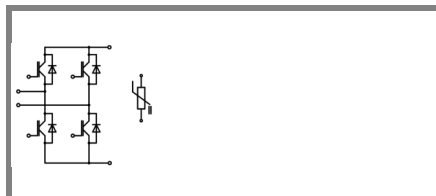
SK100GH12T4T

Features

- One screw mounting module
- Fully compatible with SEMITOP®1,2,3
- Improved thermal performances by aluminium oxide substrate
- New IGBT4 Technology
- CAL 4 technology FWD
- Integrated NTC Temperature sensor

Typical Applications*

- Voltage regulator

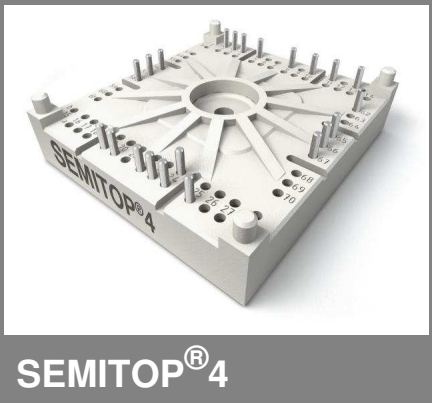


GH-T

| Absolute Maximum Ratings | | T _s = 25 °C, unless otherwise specified | | |
|--------------------------|---|--|--------------|-------|
| Symbol | Conditions | | Values | Units |
| IGBT | | | | |
| V _{CES} | T _j = 25 °C | | 1200 | V |
| I _C | T _j = 175 °C | T _s = 25 °C | 126 | A |
| | | T _s = 70 °C | 100 | A |
| I _{CRM} | I _{CRM} = 3 x I _{Cnom} , t _p ≤ 1ms | | 300 | A |
| V _{GES} | | | ±20 | V |
| t _{psc} | V _{CC} = 800 V; V _{GE} ≤ 15 V; T _j = 150 °C V _{CES} < 1200 V | | 10 | µs |
| Inverse Diode | | | | |
| I _F | T _j = 175 °C | T _s = 25 °C | 102 | A |
| | | T _s = 70 °C | 81 | A |
| I _{FRM} | I _{FRM} = 3 x I _{Fnom} , t _p ≤ 1ms | | 300 | A |
| I _{FSM} | t _p = 10 ms; half sine wave T _j = 150 °C | | 715 | A |
| Module | | | | |
| I _{t(RMS)} | | | | A |
| T _{vj} | | | -40 ... +175 | °C |
| T _{stg} | | | -40 ... +125 | °C |
| V _{isol} | AC, 1 min. | | 2500 | V |

| Characteristics | | | T _C = 25 °C, unless otherwise specified | | | |
|----------------------|---|--|--|------|------|-------|
| Symbol | Conditions | | min. | typ. | max. | Units |
| IGBT | | | | | | |
| V _{GE(th)} | V _{GE} = V _{CE} , I _C = 3,4 mA | | 5 | 5,8 | 6,5 | V |
| I _{CES} | V _{GE} = 0 V, V _{CE} = V _{CES} | T _j = 25 °C | | | 1,68 | mA |
| | | T _j = 125 °C | | 0,4 | | mA |
| I _{GES} | V _{CE} = 0 V, V _{GE} = 20 V | T _j = 125 °C | | | 1200 | nA |
| V _{CE0} | | T _j = 25 °C | | 0,8 | 0,9 | V |
| | | T _j = 150 °C | | 0,7 | 0,8 | V |
| r _{CE} | V _{GE} = 15 V | T _j = 25°C | | 10 | | mΩ |
| | | T _j = 150°C | | 15 | | mΩ |
| V _{CE(sat)} | I _{Cnom} = 100 A, V _{GE} = 15 V | T _j = 25°C _{chiplev.} | | 1,8 | 2 | V |
| | | T _j = 150°C _{chiplev.} | | 2,2 | 2,4 | V |
| C _{ies} | V _{CE} = 25, V _{GE} = 0 V | f = 1 MHz | | 5,54 | | nF |
| C _{oes} | | | | 0,41 | | nF |
| C _{res} | | | | 0,32 | | nF |
| Q _G | V _{GE} =-7V...+15V | | | 750 | | nC |
| R _{Gint} | T _j = 25 °C | | | 2 | | Ω |
| t _{d(on)} | R _{Gon} = 16 Ω di/dt = 1800 A/μs | V _{CC} = 600V I _C = 100A T _j = 150 °C | | 63 | | ns |
| t _r | | | | 65 | | ns |
| E _{on} | | | | 16,6 | | mJ |
| t _{d(off)} | R _{Goff} = 16 Ω di/dt = 1800 A/μs | | | 521 | | ns |
| t _f | | | | 80 | | ns |
| E _{off} | | | | 10 | | mJ |
| R _{th(j-s)} | per IGBT | | | 0,43 | | K/W |

SK100GH12T4T



IGBT module

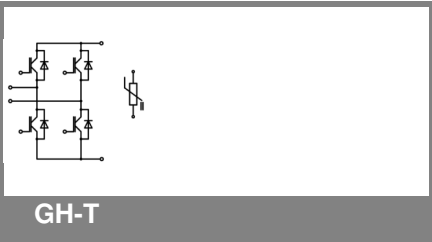
SK100GH12T4T

Features

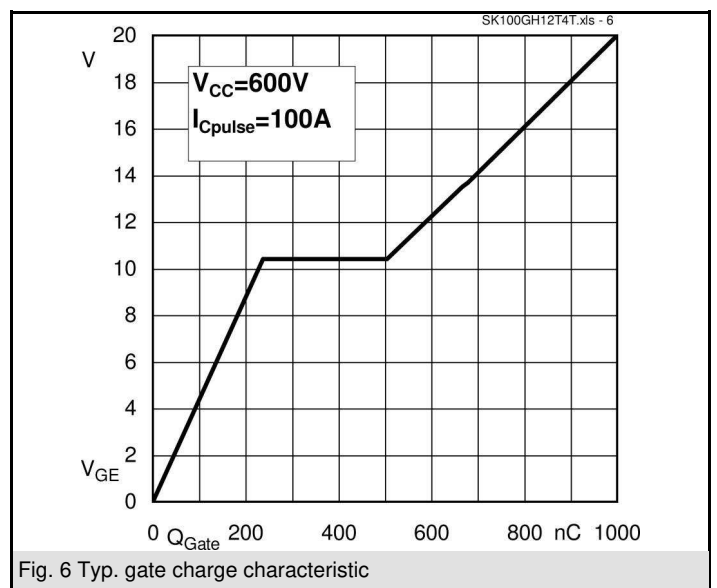
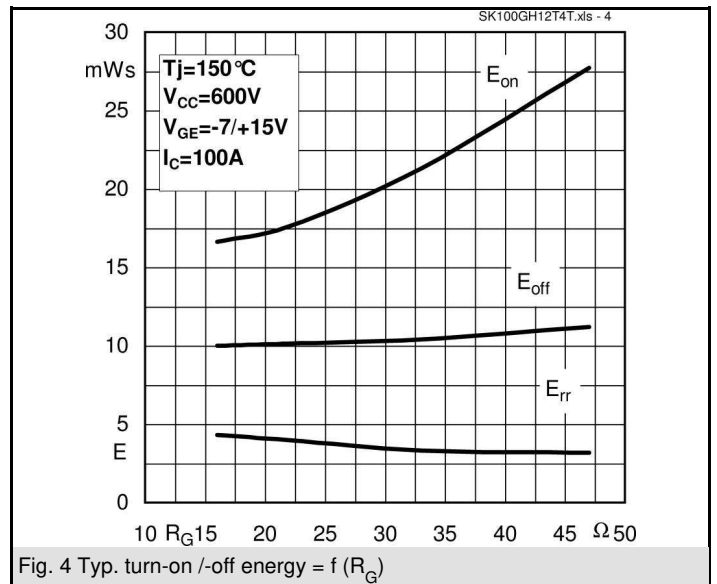
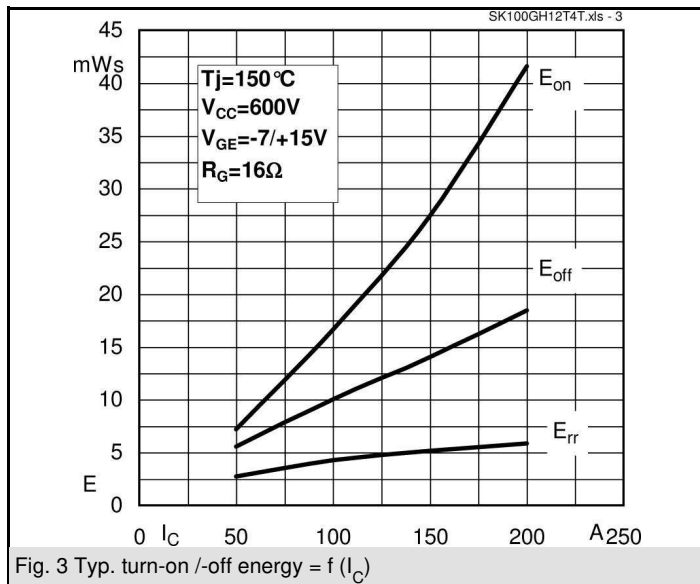
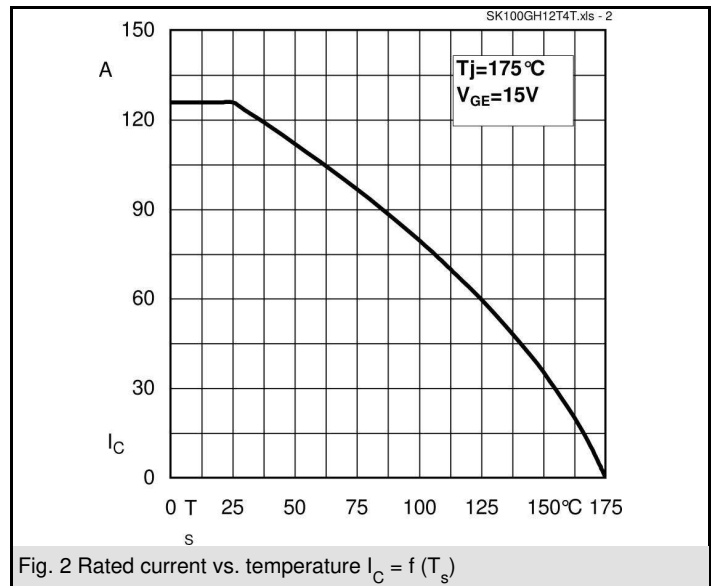
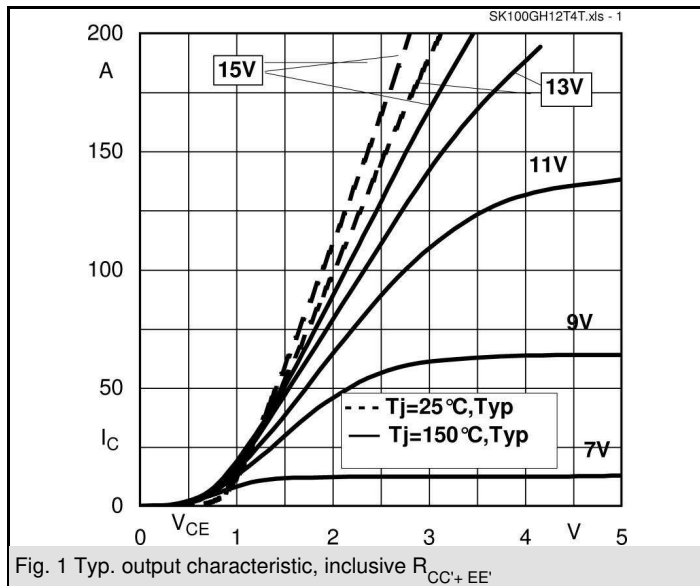
- One screw mounting module
- Fully compatible with SEMITOP®1,2,3
- Improved thermal performances by aluminium oxide substrate
- New IGBT4 Technology
- CAL 4 technology FWD
- Integrated NTC Temperature sensor

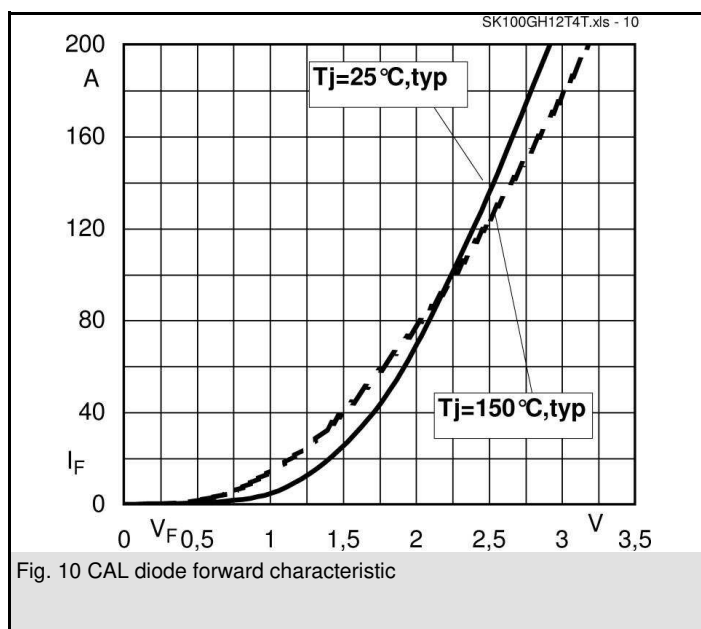
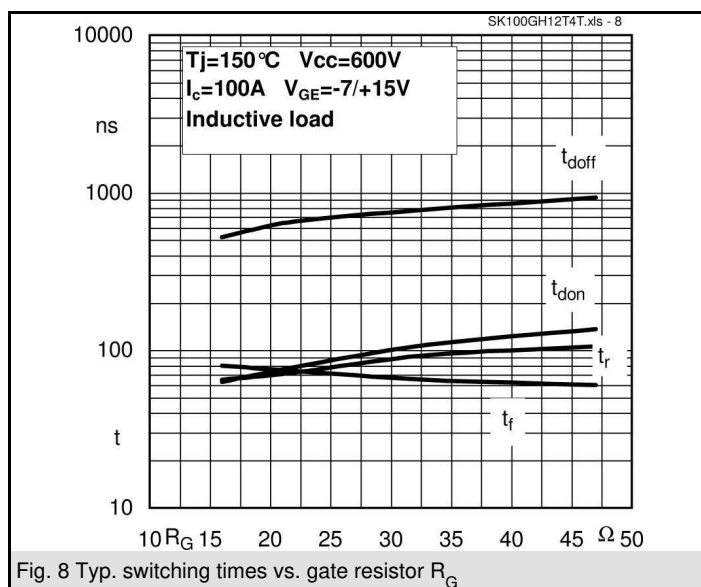
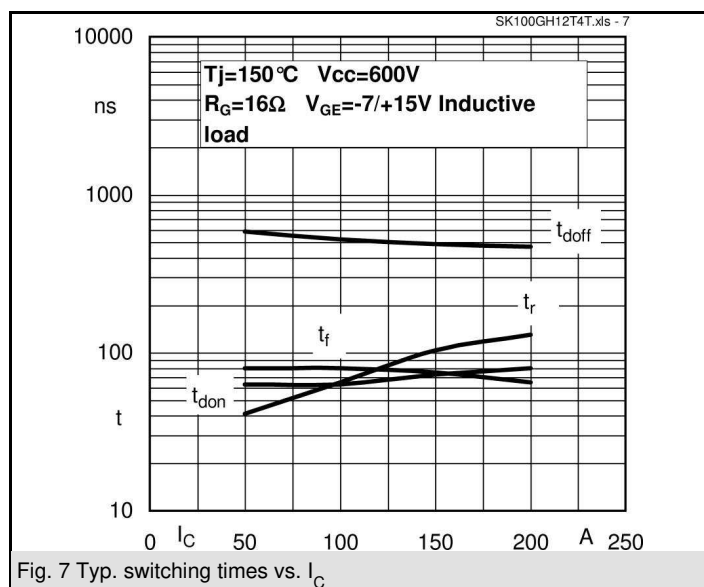
Typical Applications*

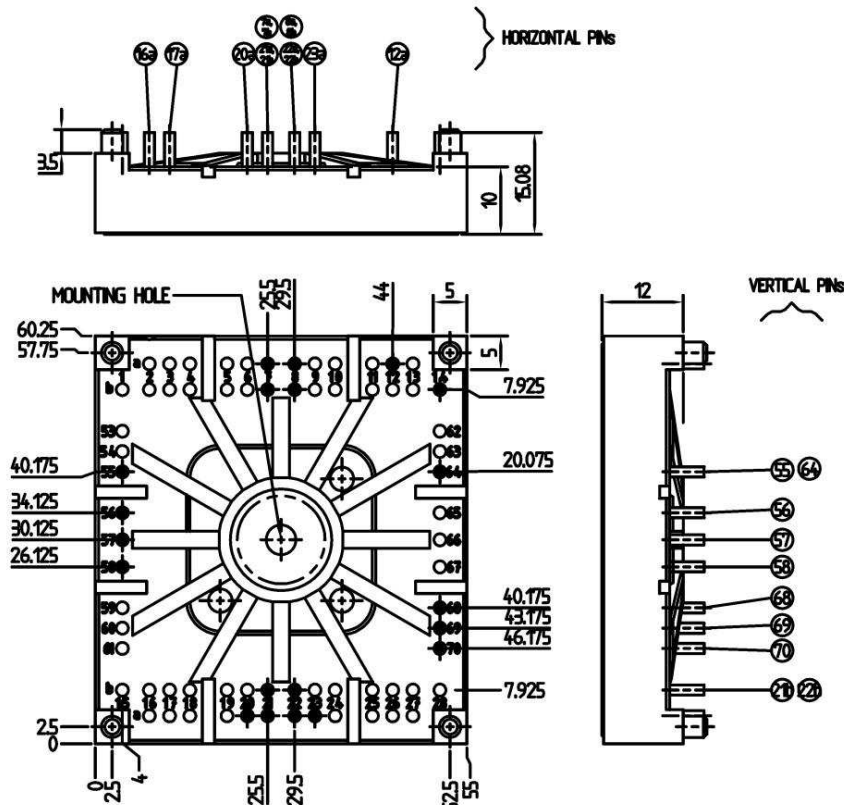
- Voltage regulator



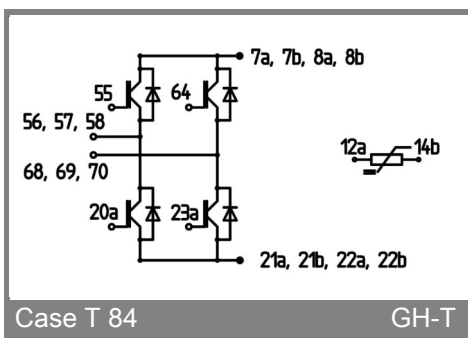
| Characteristics | | | | | | |
|----------------------------------|--|---|------|--------|------|-------|
| Symbol | Conditions | | min. | typ. | max. | Units |
| Inverse Diode | | | | | | |
| V _F = V _{EC} | I _{Fnom} = 100 A; V _{GE} = 0 V | T _j = 25 °C _{chiplev.} | | 2,2 | 2,5 | V |
| | | T _j = 150 °C _{chiplev.} | | 2,1 | 2,45 | V |
| V _{F0} | | T _j = 25 °C | | 1,3 | 1,5 | V |
| | | T _j = 150 °C | | 0,9 | 1,1 | V |
| r _F | | T _j = 25 °C | | 9,5 | 10,5 | mΩ |
| | | T _j = 150 °C | | 13 | 14 | mΩ |
| I _{RRM} | I _F = 100 A | T _j = 150 °C | | 52 | | A |
| Q _{rr} | di/dt = 1800 A/μs | | | 14 | | μC |
| E _{rr} | V _{CC} =600V | | | 5,2 | | mJ |
| R _{th(j-s)D} | per diode | | | 0,62 | | K/W |
| Freewheeling Diode | | | | | | |
| V _F = V _{EC} | I _{Fnom} = A; V _{GE} = V | T _j = °C _{chiplev.} | | | | V |
| V _{F0} | | T _j = °C | | | | V |
| r _F | | T _j = °C | | | | V |
| I _{RRM} | I _F = A | T _j = °C | | | | A |
| Q _{rr} | | | | | | μC |
| E _{rr} | | | | | | mJ |
| | per diode | | | | | K/W |
| M _s | to heat sink | | 2,5 | | 2,75 | Nm |
| w | | | | 60 | | g |
| Temperature sensor | | | | | | |
| R ₁₀₀ | T _s = 100°C (R ₂₅ =5kΩ) | | | 493±5% | | Ω |







Case T84 (Suggested hole diameter, in the PCB, for solder pins and plastic mounting pins: 2mm)



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

*IMPORTANT INFORMATION AND WARNINGS

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