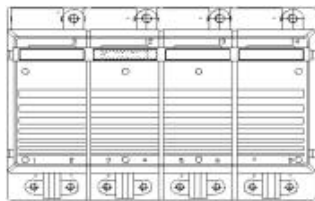


SKiiP 1242GB120-407CTV ...

查询"SKiiP1242GB120-407CTV"供应商



SKiiP[®] 2

2-pack - integrated intelligent power System

Power section

SKiiP 1242GB120-407CTV

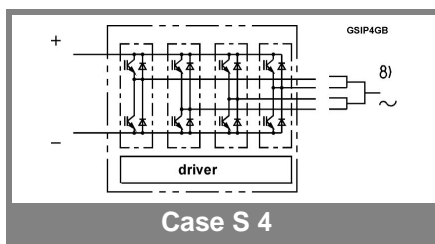
Features

- SKiiP technology inside
- Low loss IGBTs
- CAL diode technology
- Integrated current sensor
- Integrated temperature sensor
- Integrated heat sink
- IEC 60721-3-3 (humidity) class 3k3/IE32 (SKiiP[®] 2 System)
- IEC 68T.1 (climate) 40/125/56 (SKiiP[®] 2 power section)

- 1) with assembly of suitable MKP capacitor per terminal (SEMIKRON type is recommended)
- 8) AC connection busbars must be connected by the user; copper busbars available on request

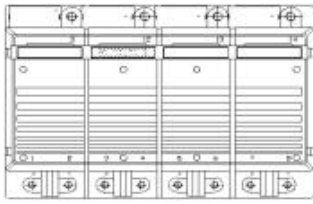
| Absolute Maximum Ratings | | $T_s = 25\text{ °C}$ unless otherwise specified | |
|--------------------------|---|---|-------------------|
| Symbol | Conditions | Values | Units |
| IGBT | | | |
| V_{CES} | Operating DC link voltage | 1200 | V |
| $V_{CC}^{1)}$ | | 900 | V |
| V_{GES} | | ± 20 | V |
| I_C | $T_s = 25\text{ (70) °C}$ | 1200 (900) | A |
| Inverse diode | | | |
| $I_F = -I_C$ | $T_s = 25\text{ (70) °C}$ | 1200 (900) | A |
| I_{FSM} | $T_j = 150\text{ °C}$, $t_p = 10\text{ ms}$; sin. | 8640 | A |
| I^2t (Diode) | Diode, $T_j = 150\text{ °C}$, 10 ms | 373 | kA ² s |
| $T_j, (T_{stg})$ | | - 40 (- 25) ... + 150 (125) | °C |
| V_{isol} | AC, 1 min. (mainterminals to heat sink) | 3000 | V |

| Characteristics | | $T_s = 25\text{ °C}$ unless otherwise specified | | | |
|---|--|---|-----------|------------|----------|
| Symbol | Conditions | min. | typ. | max. | Units |
| IGBT | | | | | |
| V_{CESat} | $I_C = 1000\text{ A}$, $T_j = 25\text{ (125) °C}$ | | 2,6 (3,1) | 3,1 | V |
| V_{CEO} | $T_j = 25\text{ (125) °C}$ | | 1,2 (1,3) | 1,5 (1,6) | V |
| r_{CE} | $T_j = 25\text{ (125) °C}$ | | 1,3 (1,8) | 1,6 (2) | mΩ |
| I_{CES} | $V_{GE} = 0\text{ V}$, $V_{CE} = V_{CES}$, $T_j = 25\text{ (125) °C}$ | | (60) | 1,6 | mA |
| $E_{on} + E_{off}$ | $I_C = 1000\text{ A}$, $V_{CC} = 600\text{ V}$ $T_j = 125\text{ °C}$, $V_{CC} = 900\text{ V}$ | | | 300 529 | mJ mJ |
| $R_{CC'} + EE'$ | terminal chip, $T_j = 125\text{ °C}$ | | 0,13 | | mΩ |
| L_{CE} | top, bottom | | 3,8 | | nH |
| C_{CHC} | per phase, AC-side | | 5,6 | | nF |
| Inverse diode | | | | | |
| $V_F = V_{EC}$ | $I_F = 1000\text{ A}$, $T_j = 25\text{ (125) °C}$ | | 2,1 (2) | 2,6 | V |
| V_{TO} | $T_j = 25\text{ (125) °C}$ | | 1,3 (1) | 1,4 (1,1) | V |
| r_T | $T_j = 25\text{ (125) °C}$ | | 0,8 (1) | 1,1 (1,3) | mΩ |
| E_{rr} | $I_C = 1000\text{ A}$, $V_{CC} = 600\text{ V}$ $T_j = 125\text{ °C}$, $V_{CC} = 900\text{ V}$ | | | 39 49 | mJ mJ |
| Mechanical data | | | | | |
| M_{dc} | DC terminals, SI Units | 6 | | 8 | Nm |
| M_{ac} | AC terminals, SI Units | 13 | | 15 | Nm |
| w | SKiiP [®] 2 System w/o heat sink | | 3,5 | | kg |
| w | heat sink | | 8,5 | | kg |
| Thermal characteristics (P16 heat sink; 275m³/h); "r" reference to temperature sensor | | | | | |
| $R_{th(j-s)I}$ | per IGBT | | | 0,023 | K/W |
| $R_{th(j-s)D}$ | per diode | | | 0,063 | K/W |
| $R_{th(s-a)}$ | per module | | | 0,033 | K/W |
| Z_{th} | R_i (mK/W) (max. values) | tau _i (s) | | | |
| | 1 2 3 4 | 1 | 2 | 3 | 4 |
| $Z_{th(j-r)I}$ | | 2 | 17 | 3 | |
| $Z_{th(j-r)D}$ | | 7 | 48 | 8 | |
| $Z_{th(r-a)}$ | | 1,6 | 22 | 7 | 2,4 |
| | | 494 | 165 | 20 | 0,03 |



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

查询"SKiiP1242GB120-407CTV"供应商



SKiiP® 2

2-pack - integrated intelligent power System

2-pack integrated gate driver

SKiiP 1242GB120-407CTV

Gate driver features

- CMOS compatible inputs
- Wide range power supply
- Integrated circuitry to sense phase current, heat sink temperature and DC-bus voltage (option)
- Short circuit protection
- Over current protection
- Over voltage protection (option)
- Power supply protected against under voltage
- Interlock of top/bottom switch
- Isolation by transformers
- Fibre optic interface (option for GB-types only)
- IEC 68T.1 (climate) 25/85/56 (SKiiP® 2 gate driver)

| Absolute Maximum Ratings | | | |
|--------------------------|---------------------------------------|---------------|-------------|
| Symbol | Conditions | Values | Units |
| V_{S1} | stabilized 15 V power supply | 18 | V |
| V_{S2} | unstabilized 24 V power supply | 30 | V |
| V_{iH} | input signal voltage (high) | 15 + 0,3 | V |
| dv/dt | secondary to primary side | 75 | kV/ μ s |
| V_{isolIO} | input / output (AC, r.m.s., 2s) | 3000 | Vac |
| V_{isol12} | output 1 / output 2 (AC, r.m.s., 2s) | 1500 | Vac |
| f_{max} | switching frequency | 14 | kHz |
| $T_{op} (T_{stg})$ | operating / storage temperature | - 25 ... + 85 | °C |

| Characteristics | | | | $(T_a = 25\text{ }^\circ\text{C})$ | | |
|-----------------|--|--|------|------------------------------------|------------|--|
| Symbol | Conditions | min. | typ. | max. | Units | |
| V_{S1} | supply voltage stabilized | 14,4 | 15 | 15,6 | V | |
| V_{S2} | supply voltage non stabilized | 20 | 24 | 30 | V | |
| I_{S1} | $V_{S1} = 15\text{ V}$ | $290+580 \cdot f/f_{max} + 1,3 \cdot (I_{AC}/A)$ | | | mA | |
| I_{S2} | $V_{S2} = 24\text{ V}$ | $220+420 \cdot f/f_{max} + 1,0 \cdot (I_{AC}/A)$ | | | mA | |
| V_{iT+} | input threshold voltage (High) | 11,2 | | | V | |
| V_{iT-} | input threshold voltage (Low) | 5,4 | | | V | |
| R_{IN} | input resistance | 10 | | | k Ω | |
| $t_{d(on)IO}$ | input-output turn-on propagation time | 1,2 | | | μ s | |
| $t_{d(off)IO}$ | input-output turn-off propagation time | 1,6 | | | μ s | |
| $t_{pERRRESET}$ | error memory reset time | 9 | | | μ s | |
| t_{TD} | top / bottom switch : interlock time | 3,3 | | | μ s | |
| $I_{analogOUT}$ | 8 V corresponds to max. current of 15 V supply voltage (available when supplied with 24 V) | 1200 | | | A | |
| $I_{Vs1outmax}$ | output current at pin 12/14 | 50 | | | mA | |
| I_{A0max} | logic low output voltage | 5 | | | mA | |
| V_{oI} | logic low output voltage | 0,6 | | | V | |
| V_{oH} | logic high output voltage | 30 | | | V | |
| I_{TRIPSC} | over current trip level ($I_{analog OUT} = 10\text{ V}$) | 1500 | | | A | |
| I_{TRIPLG} | ground fault protection | | | | A | |
| T_{tp} | over temperature protection | 110 | 120 | | °C | |
| U_{DCTRIP} | trip level of U_{DC} -protection ($U_{analog OUT} = 9\text{ V}$); (option) | 900 | | | V | |

For electrical and thermal design support please use SEMISEL.
Access to SEMISEL is via SEMIKRON website <http://www.semikron.com>.

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

