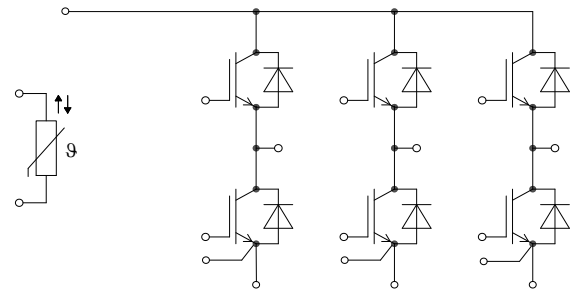
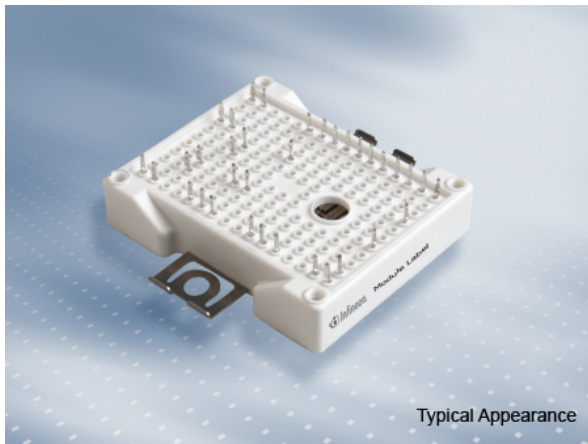


EasyPACK™ Modul mit TRENCHSTOP™ IGBT7 und Emitter Controlled 7 Diode und PressFIT / NTC
 EasyPACK™ module with TRENCHSTOP™ IGBT7 and Emitter Controlled 7 diode and PressFIT / NTC

Vorläufige Daten / Preliminary Data



$V_{CES} = 1200V$
 $I_{C\ nom} = 50A / I_{CRM} = 100A$

Potentielle Anwendungen

- Hilfsumrichter
- Klimaanlage
- Motorantriebe
- Servoumrichter
- USV-Systeme

Potential Applications

- Auxiliary inverters
- Air conditioning
- Motor drives
- Servo drives
- UPS systems

Elektrische Eigenschaften

- Niedriges V_{CEsat}
- Trenchstop™ IGBT7
- Überlastbetrieb bis zu 175°C

Electrical Features

- LOW V_{CEsat}
- Trenchstop™ IGBT7
- Overload operation up to 175°C

Mechanische Eigenschaften

- 2,5 kV AC 1min Isolationsfestigkeit
- Al₂O₃ Substrat mit kleinem thermischen Widerstand
- Hohe Leistungsdichte
- Kompaktes Design
- PressFIT Verbindungstechnik

Mechanical Features

- 2.5 kV AC 1min insulation
- Al₂O₃ substrate with low thermal resistance
- High power density
- Compact design
- PressFIT contact technology

Module Label Code

Barcode Code 128



DMX - Code



Content of the Code

| Content of the Code | Digit |
|----------------------------|---------|
| Module Serial Number | 1 - 5 |
| Module Material Number | 6 - 11 |
| Production Order Number | 12 - 19 |
| Datecode (Production Year) | 20 - 21 |
| Datecode (Production Week) | 22 - 23 |

IGBT, Wechselrichter / IGBT, Inverter
Höchstzulässige Werte / Maximum Rated Values

| | | | | |
|--|--|-----------|-------|---|
| Kollektor-Emitter-Sperrspannung Collector-emitter voltage | $T_{vj} = 25^{\circ}\text{C}$ | V_{CES} | 1200 | V |
| Kollektor-Dauergleichstrom Continuous DC collector current | $T_H = 65^{\circ}\text{C}, T_{vj\max} = 175^{\circ}\text{C}$ | I_{CDC} | 50 | A |
| Periodischer Kollektor-Spitzenstrom Repetitive peak collector current | $t_P = 1\text{ ms}$ | I_{CRM} | 100 | A |
| Gate-Emitter-Spitzenspannung Gate-emitter peak voltage | | V_{GES} | +/-20 | V |

Charakteristische Werte / Characteristic Values

| | | min. | typ. | max. | | |
|--|--|--|---------------------|---------------------------|-----------------------|---|
| Kollektor-Emitter-Sättigungsspannung Collector-emitter saturation voltage | $I_C = 50\text{ A}$ $V_{GE} = 15\text{ V}$ | $T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 175^{\circ}\text{C}$ | $V_{CE\text{ sat}}$ | 1,50 1,64 1,72 | t.b.d. V V V | |
| Gate-Schwellenspannung Gate threshold voltage | $I_C = 1,28\text{ mA}, V_{CE} = V_{GE}, T_{vj} = 25^{\circ}\text{C}$ | V_{GEth} | 5,15 | 5,80 | 6,45 | V |
| Gateladung Gate charge | $V_{GE} = -15 / 15\text{ V}, V_{CE} = 600\text{ V}$ | Q_G | 0,92 | | | μC |
| Interner Gatewiderstand Internal gate resistor | $T_{vj} = 25^{\circ}\text{C}$ | R_{Gint} | 0,0 | | | Ω |
| Eingangskapazität Input capacitance | $f = 100\text{ kHz}, T_{vj} = 25^{\circ}\text{C}, V_{CE} = 25\text{ V}, V_{GE} = 0\text{ V}$ | C_{ies} | 11,1 | | | nF |
| Rückwirkungskapazität Reverse transfer capacitance | $f = 100\text{ kHz}, T_{vj} = 25^{\circ}\text{C}, V_{CE} = 25\text{ V}, V_{GE} = 0\text{ V}$ | C_{res} | 0,039 | | | nF |
| Kollektor-Emitter-Reststrom Collector-emitter cut-off current | $V_{CE} = 1200\text{ V}, V_{GE} = 0\text{ V}, T_{vj} = 25^{\circ}\text{C}$ | I_{CES} | | | 0,0079 | mA |
| Gate-Emitter-Reststrom Gate-emitter leakage current | $V_{CE} = 0\text{ V}, V_{GE} = 20\text{ V}, T_{vj} = 25^{\circ}\text{C}$ | I_{GES} | | | 100 | nA |
| Einschaltverzögerungszeit, induktive Last Turn-on delay time, inductive load | $I_C = 50\text{ A}, V_{CE} = 600\text{ V}$ $V_{GE} = -15 / 15\text{ V}$ $R_{Gon} = 5,1\ \Omega$ | $T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 175^{\circ}\text{C}$ | t_{don} | 0,0183 0,0298 0,035 | | μs μs μs |
| Anstiegszeit, induktive Last Rise time, inductive load | $I_C = 50\text{ A}, V_{CE} = 600\text{ V}$ $V_{GE} = -15 / 15\text{ V}$ $R_{Gon} = 5,1\ \Omega$ | $T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 175^{\circ}\text{C}$ | t_r | 0,0213 0,024 0,025 | | μs μs μs |
| Abschaltverzögerungszeit, induktive Last Turn-off delay time, inductive load | $I_C = 50\text{ A}, V_{CE} = 600\text{ V}$ $V_{GE} = -15 / 15\text{ V}$ $R_{Goff} = 5,1\ \Omega$ | $T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 175^{\circ}\text{C}$ | t_{doff} | 0,27 0,325 0,36 | | μs μs μs |
| Fallzeit, induktive Last Fall time, inductive load | $I_C = 50\text{ A}, V_{CE} = 600\text{ V}$ $V_{GE} = -15 / 15\text{ V}$ $R_{Goff} = 5,1\ \Omega$ | $T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 175^{\circ}\text{C}$ | t_f | 0,12 0,187 0,264 | | μs μs μs |
| Einschaltverlustenergie pro Puls Turn-on energy loss per pulse | $I_C = 50\text{ A}, V_{CE} = 600\text{ V}, L\sigma = 35\text{ nH}$ $di/dt = 1650\text{ A}/\mu\text{s} (T_{vj} = 175^{\circ}\text{C})$ $V_{GE} = -15 / 15\text{ V}, R_{Gon} = 5,1\ \Omega$ | $T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 175^{\circ}\text{C}$ | E_{on} | 2,41 4,30 5,45 | | mJ mJ mJ |
| Abschaltverlustenergie pro Puls Turn-off energy loss per pulse | $I_C = 50\text{ A}, V_{CE} = 600\text{ V}, L\sigma = 35\text{ nH}$ $du/dt = 2900\text{ V}/\mu\text{s} (T_{vj} = 175^{\circ}\text{C})$ $V_{GE} = -15 / 15\text{ V}, R_{Goff} = 5,1\ \Omega$ | $T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 175^{\circ}\text{C}$ | E_{off} | 1,90 4,72 6,12 | | mJ mJ mJ |
| Kurzschlußverhalten SC data | $V_{GE} \leq 15\text{ V}, V_{CC} = 800\text{ V}$ $V_{CEmax} = V_{CES} - L_{SCE} \cdot di/dt$ | $t_P \leq 8\ \mu\text{s}, T_{vj} = 150^{\circ}\text{C}$ $t_P \leq 7\ \mu\text{s}, T_{vj} = 175^{\circ}\text{C}$ | I_{SC} | 190 180 | | A A |
| Wärmewiderstand, Chip bis Kühlkörper Thermal resistance, junction to heatsink | pro IGBT / per IGBT | R_{thJH} | 0,955 | | | K/W |
| Temperatur im Schaltbetrieb Temperature under switching conditions | | $T_{vj\text{ op}}$ | -40 | | 175 | $^{\circ}\text{C}$ |