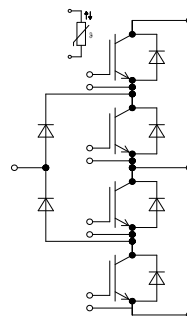
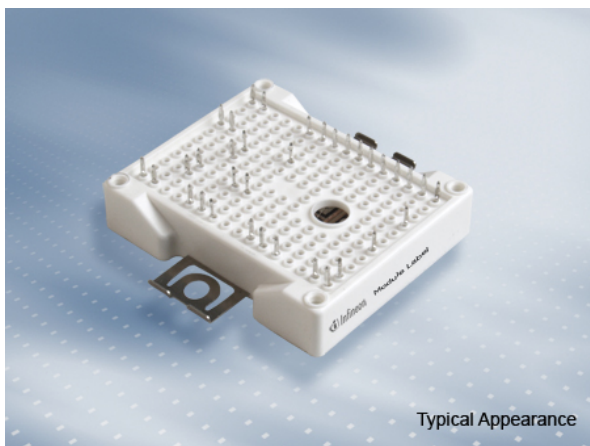


EasyPACK Modul mit Trench/Feldstopp IGBT3 und Emitter Controlled 3 Diode und PressFIT / NTC  
EasyPACK module with Trench/Fieldstop IGBT3 and Emitter Controlled 3 diode and PressFIT / NTC

### Vorläufige Daten / Preliminary Data



$V_{CES} = 650V$

$I_{C\ nom} = 75A / I_{CRM} = 150A$

### Typische Anwendungen

- 3-Level-Applikationen
- Solar Anwendungen
- USV-Systeme

### Typical Applications

- 3-Level-Applications
- Solar Applications
- UPS Systems

### Elektrische Eigenschaften

- Erhöhte Sperrspannungsfestigkeit auf 650V
- Niederinduktives Design
- Niedrige Schaltverluste
- Niedriges  $V_{CEsat}$

### Electrical Features

- Increased blocking voltage capability to 650V
- Low inductive design
- Low Switching Losses
- Low  $V_{CEsat}$

### Mechanische Eigenschaften

- $Al_2O_3$  Substrat mit kleinem thermischen Widerstand
- Kompaktes Design
- PressFIT Verbindungstechnik
- Robuste Montage durch integrierte Befestigungsklammern

### Mechanical Features

- $Al_2O_3$  Substrate with Low Thermal Resistance
- Compact design
- PressFIT Contact Technology
- Rugged mounting due to integrated mounting clamps

### 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 |

|                 |                                 |                      |
|-----------------|---------------------------------|----------------------|
| prepared by: DK | date of publication: 2013-11-05 |                      |
| approved by: MB | revision: 2.1                   | UL approved (E83335) |

Vorläufige Daten  
Preliminary Data

## IGBT, Wechselrichter / IGBT, Inverter

## Höchstzulässige Werte / Maximum Rated Values

|                                                                          |                                                                                                                              |                             |          |        |
|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-----------------------------|----------|--------|
| Kollektor-Emitter-Sperrspannung<br>Collector-emitter voltage             | $T_{vj} = 25^{\circ}\text{C}$                                                                                                | $V_{CES}$                   | 650      | V      |
| Kollektor-Dauergleichstrom<br>Continuous DC collector current            | $T_C = 75^{\circ}\text{C}, T_{vj\max} = 175^{\circ}\text{C}$<br>$T_C = 25^{\circ}\text{C}, T_{vj\max} = 175^{\circ}\text{C}$ | $I_{C\text{ nom}}$<br>$I_C$ | 75<br>95 | A<br>A |
| Periodischer Kollektor-Spitzenstrom<br>Repetitive peak collector current | $t_P = 1\text{ ms}$                                                                                                          | $I_{CRM}$                   | 150      | A      |
| Gesamt-Verlustleistung<br>Total power dissipation                        | $T_C = 25^{\circ}\text{C}, T_{vj\max} = 175^{\circ}\text{C}$                                                                 | $P_{\text{tot}}$            | 250      | W      |
| Gate-Emitter-Spitzenspannung<br>Gate-emitter peak voltage                |                                                                                                                              | $V_{GES}$                   | +/-20    | V      |

## Charakteristische Werte / Characteristic Values

|                                                                                 |                                                                                                                                                                                            |                                                                                                                   | min.                | typ.                    | max. |                                                 |
|---------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|---------------------|-------------------------|------|-------------------------------------------------|
| Kollektor-Emitter-Sättigungsspannung<br>Collector-emitter saturation voltage    | $I_C = 75\text{ A}, V_{GE} = 15\text{ V}$<br>$I_C = 75\text{ A}, V_{GE} = 15\text{ V}$<br>$I_C = 75\text{ A}, V_{GE} = 15\text{ V}$                                                        | $T_{vj} = 25^{\circ}\text{C}$<br>$T_{vj} = 125^{\circ}\text{C}$<br>$T_{vj} = 150^{\circ}\text{C}$                 | $V_{CE\text{ sat}}$ | 1,45<br>1,60<br>1,70    | 1,90 | V<br>V<br>V                                     |
| Gate-Schwellenspannung<br>Gate threshold voltage                                | $I_C = 1,20\text{ mA}, V_{CE} = V_{GE}, T_{vj} = 25^{\circ}\text{C}$                                                                                                                       |                                                                                                                   | $V_{GEth}$          | 4,9                     | 5,8  | 6,5 V                                           |
| Gateladung<br>Gate charge                                                       | $V_{GE} = -15\text{ V} \dots +15\text{ V}$                                                                                                                                                 |                                                                                                                   | $Q_G$               | 0,80                    |      | $\mu\text{C}$                                   |
| Interner Gatewiderstand<br>Internal gate resistor                               | $T_{vj} = 25^{\circ}\text{C}$                                                                                                                                                              |                                                                                                                   | $R_{Gint}$          | 0,0                     |      | $\Omega$                                        |
| Eingangskapazität<br>Input capacitance                                          | $f = 1\text{ MHz}, T_{vj} = 25^{\circ}\text{C}, V_{CE} = 25\text{ V}, V_{GE} = 0\text{ V}$                                                                                                 |                                                                                                                   | $C_{ies}$           | 4,60                    |      | nF                                              |
| Rückwirkungskapazität<br>Reverse transfer capacitance                           | $f = 1\text{ MHz}, T_{vj} = 25^{\circ}\text{C}, V_{CE} = 25\text{ V}, V_{GE} = 0\text{ V}$                                                                                                 |                                                                                                                   | $C_{res}$           | 0,145                   |      | nF                                              |
| Kollektor-Emitter-Reststrom<br>Collector-emitter cut-off current                | $V_{CE} = 650\text{ V}, V_{GE} = 0\text{ V}, T_{vj} = 25^{\circ}\text{C}$                                                                                                                  |                                                                                                                   | $I_{CES}$           |                         | 1,0  | mA                                              |
| Gate-Emitter-Reststrom<br>Gate-emitter leakage current                          | $V_{CE} = 0\text{ V}, V_{GE} = 20\text{ V}, T_{vj} = 25^{\circ}\text{C}$                                                                                                                   |                                                                                                                   | $I_{GES}$           |                         | 400  | nA                                              |
| Einschaltverzögerungszeit, induktive Last<br>Turn-on delay time, inductive load | $I_C = 75\text{ A}, V_{CE} = 300\text{ V}$<br>$V_{GE} = \pm 15\text{ V}$<br>$R_{Gon} = 5,1\ \Omega$                                                                                        | $T_{vj} = 25^{\circ}\text{C}$<br>$T_{vj} = 125^{\circ}\text{C}$<br>$T_{vj} = 150^{\circ}\text{C}$                 | $t_{d\text{ on}}$   | 0,025<br>0,025<br>0,025 |      | $\mu\text{s}$<br>$\mu\text{s}$<br>$\mu\text{s}$ |
| Anstiegszeit, induktive Last<br>Rise time, inductive load                       | $I_C = 75\text{ A}, V_{CE} = 300\text{ V}$<br>$V_{GE} = \pm 15\text{ V}$<br>$R_{Gon} = 5,1\ \Omega$                                                                                        | $T_{vj} = 25^{\circ}\text{C}$<br>$T_{vj} = 125^{\circ}\text{C}$<br>$T_{vj} = 150^{\circ}\text{C}$                 | $t_r$               | 0,02<br>0,023<br>0,024  |      | $\mu\text{s}$<br>$\mu\text{s}$<br>$\mu\text{s}$ |
| Abschaltverzögerungszeit, induktive Last<br>Turn-off delay time, inductive load | $I_C = 75\text{ A}, V_{CE} = 300\text{ V}$<br>$V_{GE} = \pm 15\text{ V}$<br>$R_{Goff} = 5,1\ \Omega$                                                                                       | $T_{vj} = 25^{\circ}\text{C}$<br>$T_{vj} = 125^{\circ}\text{C}$<br>$T_{vj} = 150^{\circ}\text{C}$                 | $t_{d\text{ off}}$  | 0,20<br>0,225<br>0,23   |      | $\mu\text{s}$<br>$\mu\text{s}$<br>$\mu\text{s}$ |
| Fallzeit, induktive Last<br>Fall time, inductive load                           | $I_C = 75\text{ A}, V_{CE} = 300\text{ V}$<br>$V_{GE} = \pm 15\text{ V}$<br>$R_{Goff} = 5,1\ \Omega$                                                                                       | $T_{vj} = 25^{\circ}\text{C}$<br>$T_{vj} = 125^{\circ}\text{C}$<br>$T_{vj} = 150^{\circ}\text{C}$                 | $t_f$               | 0,085<br>0,12<br>0,14   |      | $\mu\text{s}$<br>$\mu\text{s}$<br>$\mu\text{s}$ |
| Einschaltverlustenergie pro Puls<br>Turn-on energy loss per pulse               | $I_C = 75\text{ A}, V_{CE} = 300\text{ V}, L_S = 35\text{ nH}$<br>$V_{GE} = \pm 15\text{ V}, di/dt = 3100\text{ A}/\mu\text{s} (T_{vj} = 150^{\circ}\text{C})$<br>$R_{Gon} = 5,1\ \Omega$  | $T_{vj} = 25^{\circ}\text{C}$<br>$T_{vj} = 125^{\circ}\text{C}$<br>$T_{vj} = 150^{\circ}\text{C}$                 | $E_{on}$            | 0,45<br>0,60<br>0,70    |      | mJ<br>mJ<br>mJ                                  |
| Abschaltverlustenergie pro Puls<br>Turn-off energy loss per pulse               | $I_C = 75\text{ A}, V_{CE} = 300\text{ V}, L_S = 35\text{ nH}$<br>$V_{GE} = \pm 15\text{ V}, du/dt = 4000\text{ V}/\mu\text{s} (T_{vj} = 150^{\circ}\text{C})$<br>$R_{Goff} = 5,1\ \Omega$ | $T_{vj} = 25^{\circ}\text{C}$<br>$T_{vj} = 125^{\circ}\text{C}$<br>$T_{vj} = 150^{\circ}\text{C}$                 | $E_{off}$           | 1,70<br>2,30<br>2,40    |      | mJ<br>mJ<br>mJ                                  |
| Kurzschlußverhalten<br>SC data                                                  | $V_{GE} \leq 15\text{ V}, V_{CC} = 360\text{ V}$<br>$V_{CE\text{ max}} = V_{CES} - L_{SCE} \cdot di/dt$                                                                                    | $t_P \leq 8\ \mu\text{s}, T_{vj} = 25^{\circ}\text{C}$<br>$t_P \leq 6\ \mu\text{s}, T_{vj} = 150^{\circ}\text{C}$ | $I_{SC}$            | 530<br>380              |      | A<br>A                                          |
| Wärmewiderstand, Chip bis Gehäuse<br>Thermal resistance, junction to case       | pro IGBT / per IGBT                                                                                                                                                                        |                                                                                                                   | $R_{thJC}$          | 0,55                    | 0,60 | K/W                                             |
| Wärmewiderstand, Gehäuse bis Kühlkörper<br>Thermal resistance, case to heatsink | pro IGBT / per IGBT<br>$\lambda_{\text{Paste}} = 1\text{ W}/(\text{m} \cdot \text{K}) / \lambda_{\text{grease}} = 1\text{ W}/(\text{m} \cdot \text{K})$                                    |                                                                                                                   | $R_{thCH}$          | 0,55                    |      | K/W                                             |
| Temperatur im Schaltbetrieb<br>Temperature under switching conditions           |                                                                                                                                                                                            |                                                                                                                   | $T_{vj\text{ op}}$  | -40                     | 150  | $^{\circ}\text{C}$                              |

prepared by: DK

date of publication: 2013-11-05

approved by: MB

revision: 2.1

Vorläufige Daten  
Preliminary Data

## Diode, Wechselrichter / Diode, Inverter

## Höchstzulässige Werte / Maximum Rated Values

|                                                                     |                                                                                                                                              |           |            |                                              |
|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------|----------------------------------------------|
| Periodische Spitzensperrspannung<br>Repetitive peak reverse voltage | $T_{vj} = 25^{\circ}\text{C}$                                                                                                                | $V_{RRM}$ | 650        | V                                            |
| Dauergleichstrom<br>Continuous DC forward current                   |                                                                                                                                              | $I_F$     | 75         | A                                            |
| Periodischer Spitzenstrom<br>Repetitive peak forward current        | $t_P = 1\text{ ms}$                                                                                                                          | $I_{FRM}$ | 150        | A                                            |
| Grenzlastintegral<br>$I^2t$ - value                                 | $V_R = 0\text{ V}, t_P = 10\text{ ms}, T_{vj} = 125^{\circ}\text{C}$<br>$V_R = 0\text{ V}, t_P = 10\text{ ms}, T_{vj} = 150^{\circ}\text{C}$ | $I^2t$    | 490<br>460 | $\text{A}^2\text{s}$<br>$\text{A}^2\text{s}$ |

## Charakteristische Werte / Characteristic Values

|                                                                                 |                                                                                                                                           |                                                                                                   |                    | min. | typ.                 | max. |                                                 |
|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--------------------|------|----------------------|------|-------------------------------------------------|
| Durchlassspannung<br>Forward voltage                                            | $I_F = 75\text{ A}, V_{GE} = 0\text{ V}$<br>$I_F = 75\text{ A}, V_{GE} = 0\text{ V}$<br>$I_F = 75\text{ A}, V_{GE} = 0\text{ V}$          | $T_{vj} = 25^{\circ}\text{C}$<br>$T_{vj} = 125^{\circ}\text{C}$<br>$T_{vj} = 150^{\circ}\text{C}$ | $V_F$              |      | 1,55<br>1,50<br>1,45 | 1,95 | V<br>V<br>V                                     |
| Rückstromspitze<br>Peak reverse recovery current                                | $I_F = 75\text{ A}, -di_F/dt = 3600\text{ A}/\mu\text{s} (T_{vj}=150^{\circ}\text{C})$<br>$V_R = 300\text{ V}$<br>$V_{GE} = -15\text{ V}$ | $T_{vj} = 25^{\circ}\text{C}$<br>$T_{vj} = 125^{\circ}\text{C}$<br>$T_{vj} = 150^{\circ}\text{C}$ | $I_{RM}$           |      | 95,0<br>105<br>110   |      | A<br>A<br>A                                     |
| Sperrverzögerungsladung<br>Recovered charge                                     | $I_F = 75\text{ A}, -di_F/dt = 3600\text{ A}/\mu\text{s} (T_{vj}=150^{\circ}\text{C})$<br>$V_R = 300\text{ V}$<br>$V_{GE} = -15\text{ V}$ | $T_{vj} = 25^{\circ}\text{C}$<br>$T_{vj} = 125^{\circ}\text{C}$<br>$T_{vj} = 150^{\circ}\text{C}$ | $Q_r$              |      | 3,70<br>6,40<br>7,00 |      | $\mu\text{C}$<br>$\mu\text{C}$<br>$\mu\text{C}$ |
| Abschaltenergie pro Puls<br>Reverse recovery energy                             | $I_F = 75\text{ A}, -di_F/dt = 3600\text{ A}/\mu\text{s} (T_{vj}=150^{\circ}\text{C})$<br>$V_R = 300\text{ V}$<br>$V_{GE} = -15\text{ V}$ | $T_{vj} = 25^{\circ}\text{C}$<br>$T_{vj} = 125^{\circ}\text{C}$<br>$T_{vj} = 150^{\circ}\text{C}$ | $E_{rec}$          |      | 0,90<br>1,50<br>1,75 |      | mJ<br>mJ<br>mJ                                  |
| Wärmewiderstand, Chip bis Gehäuse<br>Thermal resistance, junction to case       | pro Diode / per diode                                                                                                                     |                                                                                                   | $R_{thJC}$         |      | 0,70                 | 0,80 | K/W                                             |
| Wärmewiderstand, Gehäuse bis Kühlkörper<br>Thermal resistance, case to heatsink | pro Diode / per diode<br>$\lambda_{Paste} = 1\text{ W}/(\text{m}\cdot\text{K})$ / $\lambda_{grease} = 1\text{ W}/(\text{m}\cdot\text{K})$ |                                                                                                   | $R_{thCH}$         |      | 0,70                 |      | K/W                                             |
| Temperatur im Schaltbetrieb<br>Temperature under switching conditions           |                                                                                                                                           |                                                                                                   | $T_{vj\text{ op}}$ | -40  |                      | 150  | $^{\circ}\text{C}$                              |

Vorläufige Daten  
Preliminary Data

## Diode, D5-D6 / Diode, D5-D6

## Höchstzulässige Werte / Maximum Rated Values

|                                                                     |                                                                                                                                              |           |              |                                              |
|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------|----------------------------------------------|
| Periodische Spitzensperrspannung<br>Repetitive peak reverse voltage | $T_{vj} = 25^{\circ}\text{C}$                                                                                                                | $V_{RRM}$ | 650          | V                                            |
| Dauergleichstrom<br>Continuous DC forward current                   |                                                                                                                                              | $I_F$     | 75           | A                                            |
| Periodischer Spitzenstrom<br>Repetitive peak forward current        | $t_P = 1\text{ ms}$                                                                                                                          | $I_{FRM}$ | 150          | A                                            |
| Grenzlastintegral<br>$I^2t$ - value                                 | $V_R = 0\text{ V}, t_P = 10\text{ ms}, T_{vj} = 125^{\circ}\text{C}$<br>$V_R = 0\text{ V}, t_P = 10\text{ ms}, T_{vj} = 150^{\circ}\text{C}$ | $I^2t$    | 1500<br>1400 | $\text{A}^2\text{s}$<br>$\text{A}^2\text{s}$ |

## Charakteristische Werte / Characteristic Values

|                                                                                 |                                                                                                                                                     |                                                                                                   |                    | min. | typ.                 | max. |                                                 |
|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--------------------|------|----------------------|------|-------------------------------------------------|
| Durchlassspannung<br>Forward voltage                                            | $I_F = 75\text{ A}, V_{GE} = 0\text{ V}$<br>$I_F = 75\text{ A}, V_{GE} = 0\text{ V}$<br>$I_F = 75\text{ A}, V_{GE} = 0\text{ V}$                    | $T_{vj} = 25^{\circ}\text{C}$<br>$T_{vj} = 125^{\circ}\text{C}$<br>$T_{vj} = 150^{\circ}\text{C}$ | $V_F$              |      | 1,45<br>1,35<br>1,30 | 1,85 | V<br>V<br>V                                     |
| Rückstromspitze<br>Peak reverse recovery current                                | $I_F = 75\text{ A}, -di_F/dt = 3100\text{ A}/\mu\text{s} (T_{vj}=150^{\circ}\text{C})$<br>$V_R = 300\text{ V}$                                      | $T_{vj} = 25^{\circ}\text{C}$<br>$T_{vj} = 125^{\circ}\text{C}$<br>$T_{vj} = 150^{\circ}\text{C}$ | $I_{RM}$           |      | 82,0<br>100<br>105   |      | A<br>A<br>A                                     |
| Sperrverzögerungsladung<br>Recovered charge                                     | $I_F = 75\text{ A}, -di_F/dt = 3100\text{ A}/\mu\text{s} (T_{vj}=150^{\circ}\text{C})$<br>$V_R = 300\text{ V}$                                      | $T_{vj} = 25^{\circ}\text{C}$<br>$T_{vj} = 125^{\circ}\text{C}$<br>$T_{vj} = 150^{\circ}\text{C}$ | $Q_r$              |      | 3,70<br>7,00<br>8,00 |      | $\mu\text{C}$<br>$\mu\text{C}$<br>$\mu\text{C}$ |
| Abschaltenergie pro Puls<br>Reverse recovery energy                             | $I_F = 75\text{ A}, -di_F/dt = 3100\text{ A}/\mu\text{s} (T_{vj}=150^{\circ}\text{C})$<br>$V_R = 300\text{ V}$                                      | $T_{vj} = 25^{\circ}\text{C}$<br>$T_{vj} = 125^{\circ}\text{C}$<br>$T_{vj} = 150^{\circ}\text{C}$ | $E_{rec}$          |      | 1,00<br>1,80<br>2,05 |      | mJ<br>mJ<br>mJ                                  |
| Wärmewiderstand, Chip bis Gehäuse<br>Thermal resistance, junction to case       | pro Diode / per diode                                                                                                                               |                                                                                                   | $R_{thJC}$         |      | 0,60                 | 0,65 | K/W                                             |
| Wärmewiderstand, Gehäuse bis Kühlkörper<br>Thermal resistance, case to heatsink | pro Diode / per diode<br>$\lambda_{Paste} = 1\text{ W}/(\text{m}\cdot\text{K}) \quad / \quad \lambda_{grease} = 1\text{ W}/(\text{m}\cdot\text{K})$ |                                                                                                   | $R_{thCH}$         |      | 0,50                 |      | K/W                                             |
| Temperatur im Schaltbetrieb<br>Temperature under switching conditions           |                                                                                                                                                     |                                                                                                   | $T_{vj\text{ op}}$ | -40  |                      | 150  | $^{\circ}\text{C}$                              |

## NTC-Widerstand / NTC-Thermistor

## Charakteristische Werte / Characteristic Values

|                                          |                                                               |              |    | min. | typ. | max. |            |
|------------------------------------------|---------------------------------------------------------------|--------------|----|------|------|------|------------|
| Nennwiderstand<br>Rated resistance       | $T_C = 25^{\circ}\text{C}$                                    | $R_{25}$     |    |      | 5,00 |      | k $\Omega$ |
| Abweichung von R100<br>Deviation of R100 | $T_C = 100^{\circ}\text{C}, R_{100} = 493\text{ }\Omega$      | $\Delta R/R$ | -5 |      |      | 5    | %          |
| Verlustleistung<br>Power dissipation     | $T_C = 25^{\circ}\text{C}$                                    | $P_{25}$     |    |      |      | 20,0 | mW         |
| B-Wert<br>B-value                        | $R_2 = R_{25} \exp [B_{25/50}(1/T_2 - 1/(298,15\text{ K}))]$  | $B_{25/50}$  |    |      | 3375 |      | K          |
| B-Wert<br>B-value                        | $R_2 = R_{25} \exp [B_{25/80}(1/T_2 - 1/(298,15\text{ K}))]$  | $B_{25/80}$  |    |      | 3411 |      | K          |
| B-Wert<br>B-value                        | $R_2 = R_{25} \exp [B_{25/100}(1/T_2 - 1/(298,15\text{ K}))]$ | $B_{25/100}$ |    |      | 3433 |      | K          |

Angaben gemäß gültiger Application Note.

Specification according to the valid application note.

|                 |                                 |
|-----------------|---------------------------------|
| prepared by: DK | date of publication: 2013-11-05 |
| approved by: MB | revision: 2.1                   |

**Vorläufige Daten**  
**Preliminary Data**
**Modul / Module**

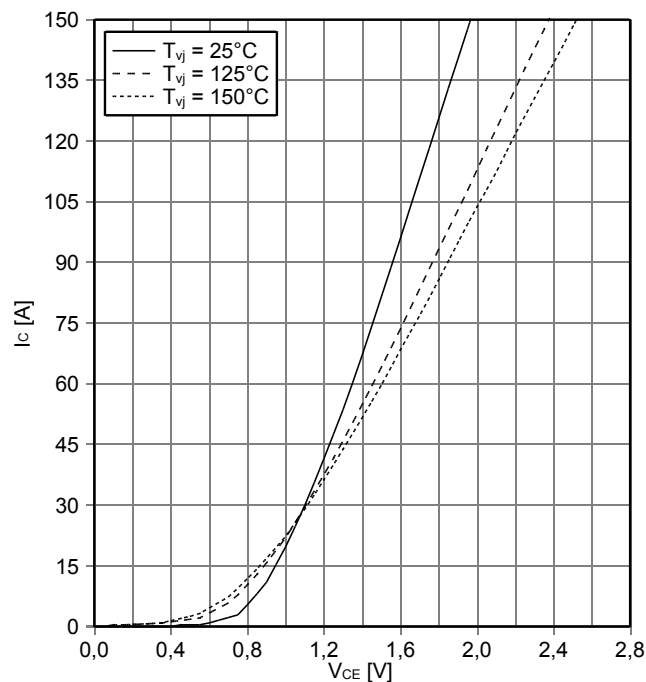
|                                                                                        |                                                                                         |                      |                                |      |        |
|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|----------------------|--------------------------------|------|--------|
| Isolations-Prüfspannung<br>Isolation test voltage                                      | RMS, f = 50 Hz, t = 1 min.                                                              | V <sub>ISOL</sub>    | 2,5                            |      | kV     |
| Innere Isolation<br>Internal isolation                                                 | Basisisolierung (Schutzklasse 1, EN61140)<br>basic insulation (class 1, IEC 61140)      |                      | Al <sub>2</sub> O <sub>3</sub> |      |        |
| Kriechstrecke<br>Creepage distance                                                     | Kontakt - Kühlkörper / terminal to heatsink<br>Kontakt - Kontakt / terminal to terminal |                      | 11,5<br>6,3                    |      | mm     |
| Luftstrecke<br>Clearance                                                               | Kontakt - Kühlkörper / terminal to heatsink<br>Kontakt - Kontakt / terminal to terminal |                      | 10,0<br>5,0                    |      | mm     |
| Vergleichszahl der Kriechwegbildung<br>Comperative tracking index                      |                                                                                         | CTI                  | > 200                          |      |        |
|                                                                                        |                                                                                         |                      |                                |      |        |
|                                                                                        |                                                                                         |                      | min.                           | typ. | max.   |
| Modulstreuintduktivität<br>Stray inductance module                                     |                                                                                         | L <sub>sCE</sub>     |                                | 15   | nH     |
| Modulleitungswiderstand, Anschlüsse - Chip<br>Module lead resistance, terminals - chip | T <sub>c</sub> = 25°C, pro Schalter / per switch                                        | R <sub>CC'+EE'</sub> |                                | 2,00 | mΩ     |
| Lagertemperatur<br>Storage temperature                                                 |                                                                                         | T <sub>stg</sub>     | -40                            |      | 125 °C |
| Anpresskraft für mech. Bef. pro Feder<br>mounting force per clamp                      |                                                                                         | F                    | 40                             | -    | 80 N   |
| Gewicht<br>Weight                                                                      |                                                                                         | G                    |                                | 39   | g      |

Der Strom im Dauerbetrieb ist auf 25 A effektiv pro Anschlusspin begrenzt  
The current under continuous operation is limited to 25 A rms per connector pin

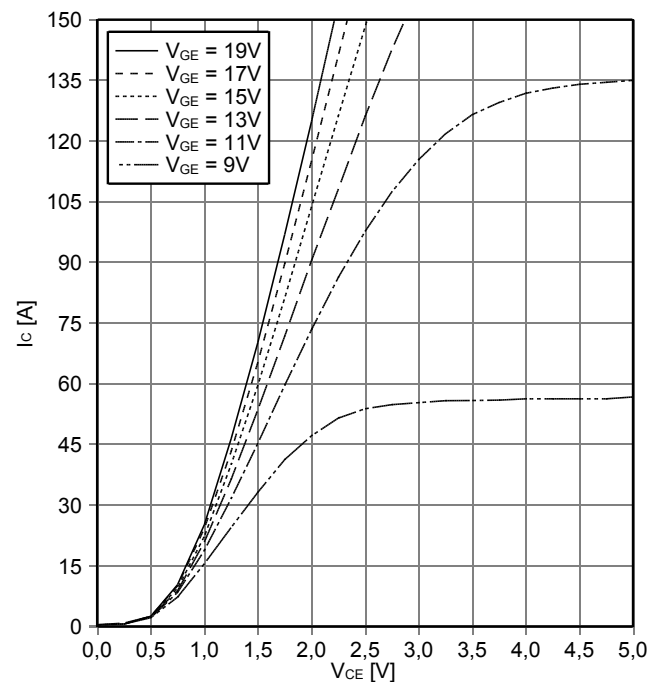
|                 |                                 |
|-----------------|---------------------------------|
| prepared by: DK | date of publication: 2013-11-05 |
| approved by: MB | revision: 2.1                   |

# Vorläufige Daten Preliminary Data

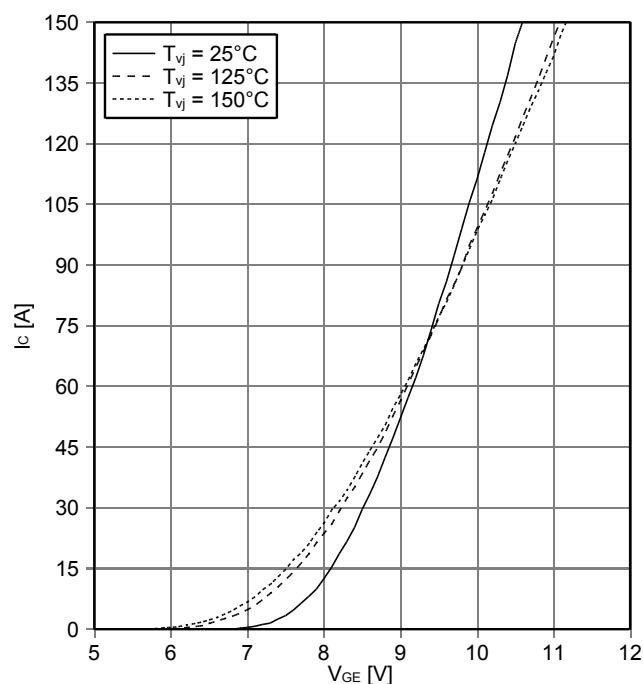
## Ausgangskennlinie IGBT, Wechselrichter (typisch) output characteristic IGBT, Inverter (typical)

 $I_C = f(V_{CE})$   
 $V_{GE} = 15\text{ V}$ 


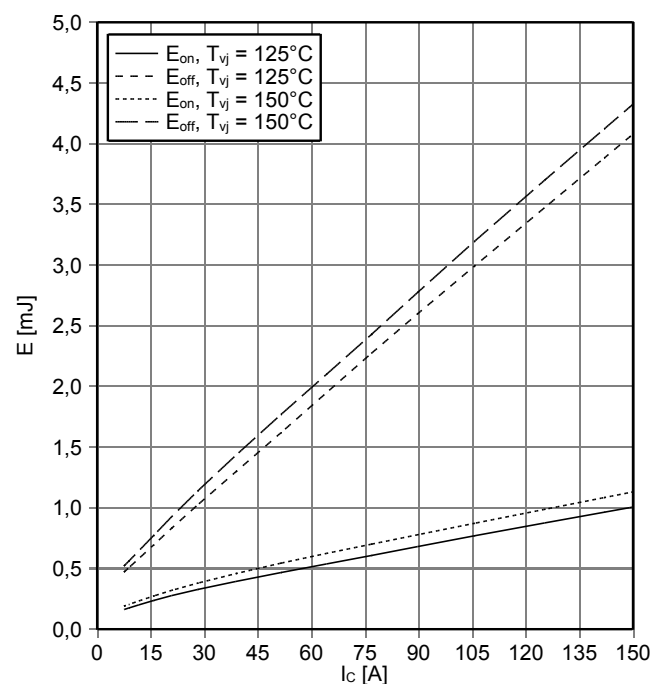
## Ausgangskennlinienfeld IGBT, Wechselrichter (typisch) output characteristic IGBT, Inverter (typical)

 $I_C = f(V_{CE})$   
 $T_{vj} = 150^\circ\text{C}$ 


## Übertragungscharakteristik IGBT, Wechselrichter (typisch) transfer characteristic IGBT, Inverter (typical)

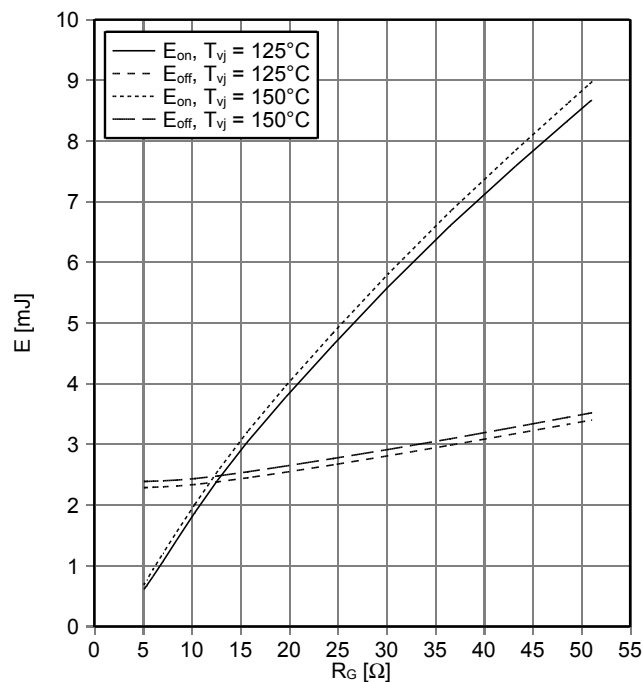
 $I_C = f(V_{GE})$   
 $V_{CE} = 20\text{ V}$ 


## Schaltverluste IGBT, Wechselrichter (typisch) switching losses IGBT, Inverter (typical)

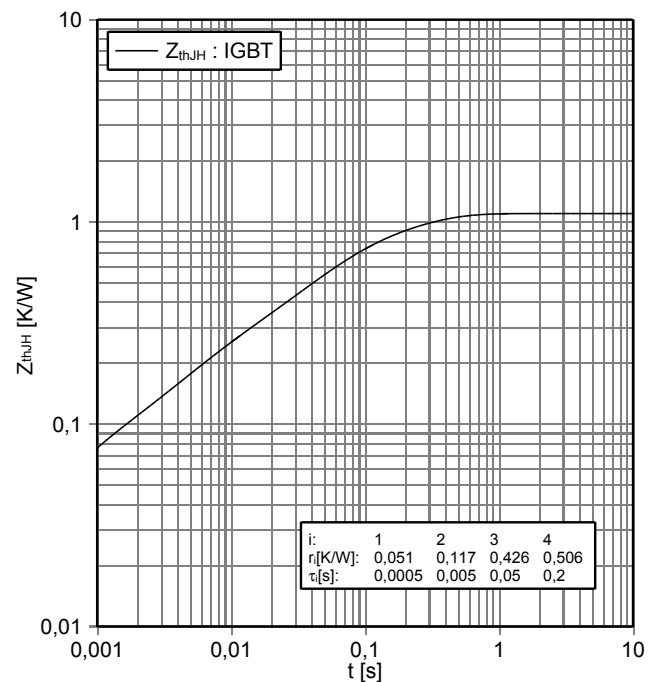
 $E_{on} = f(I_C)$ ,  $E_{off} = f(I_C)$   
 $V_{GE} = \pm 15\text{ V}$ ,  $R_{Gon} = 5.1\ \Omega$ ,  $R_{Goff} = 5.1\ \Omega$ ,  $V_{CE} = 300\text{ V}$ 


# Vorläufige Daten Preliminary Data

## Schaltverluste IGBT, Wechselrichter (typisch) switching losses IGBT, Inverter (typical)

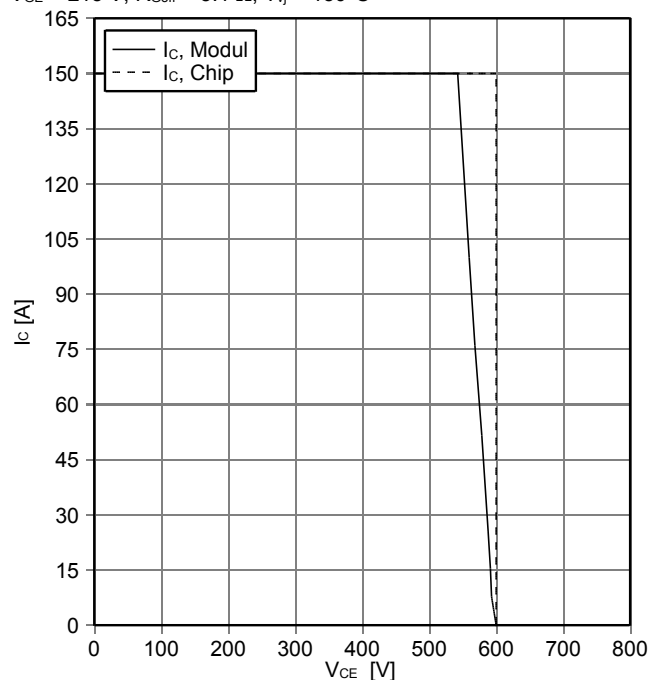
 $E_{on} = f(R_G)$ ,  $E_{off} = f(R_G)$   
 $V_{GE} = \pm 15 \text{ V}$ ,  $I_C = 75 \text{ A}$ ,  $V_{CE} = 300 \text{ V}$ 


## Transienter Wärmewiderstand IGBT, Wechselrichter transient thermal impedance IGBT, Inverter

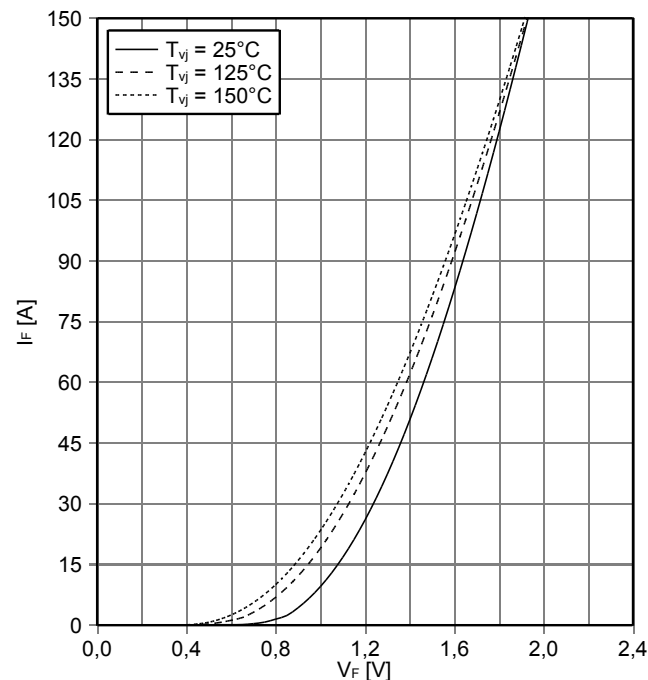
 $Z_{thJH} = f(t)$ 


## Sicherer Rückwärts-Arbeitsbereich IGBT, Wechselrichter (RBSOA)

reverse bias safe operating area IGBT, Inverter (RBSOA)

 $I_C = f(V_{CE})$   
 $V_{GE} = \pm 15 \text{ V}$ ,  $R_{Goff} = 5.1 \Omega$ ,  $T_{vj} = 150^\circ\text{C}$ 


## Durchlasskennlinie der Diode, Wechselrichter (typisch) forward characteristic of Diode, Inverter (typical)

 $I_F = f(V_F)$ 


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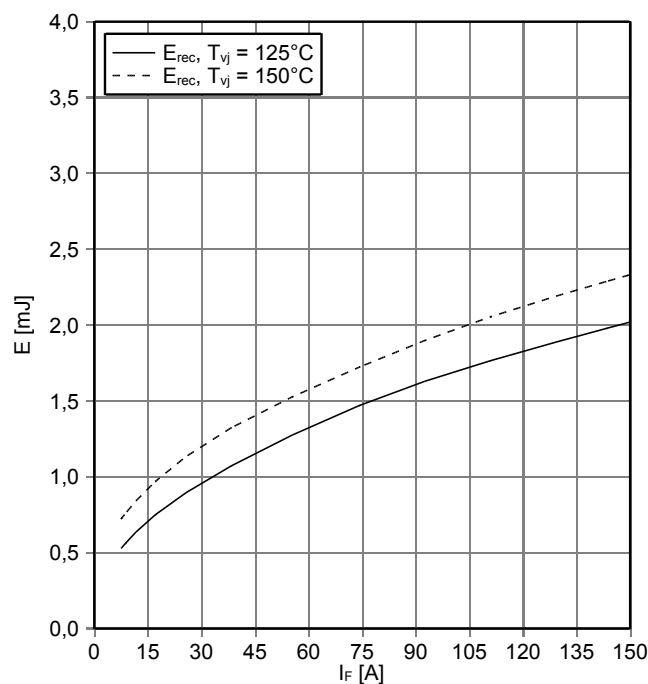
date of publication: 2013-11-05

approved by: MB

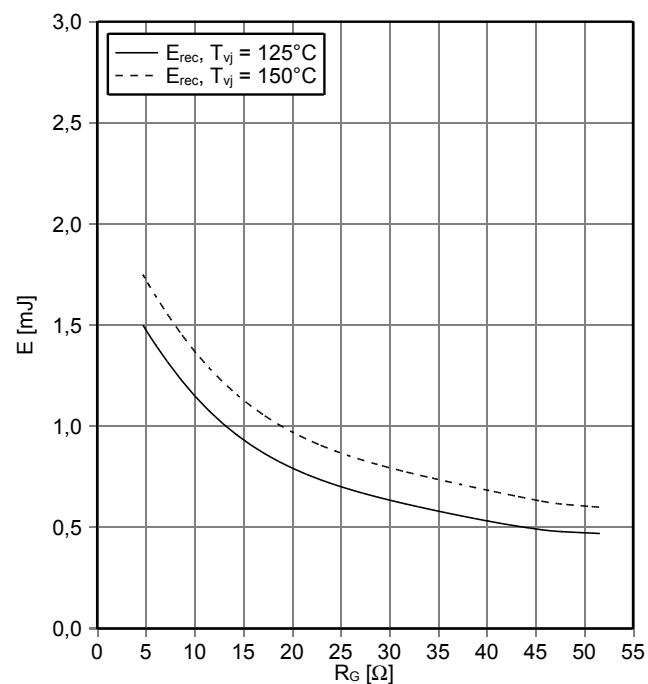
revision: 2.1

# Vorläufige Daten Preliminary Data

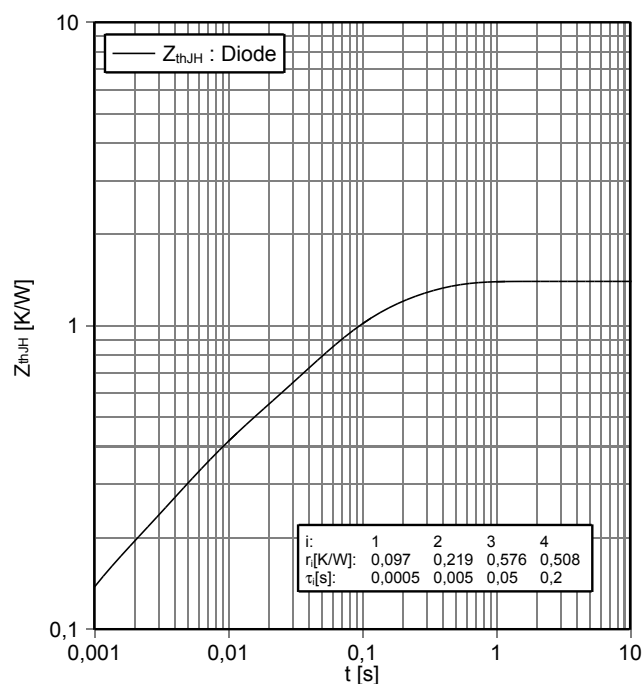
## Schaltverluste Diode, Wechselrichter (typisch) switching losses Diode, Inverter (typical)

 $E_{rec} = f(I_F)$   
 $R_{Gon} = 5.1 \Omega$ ,  $V_{CE} = 300 V$ 


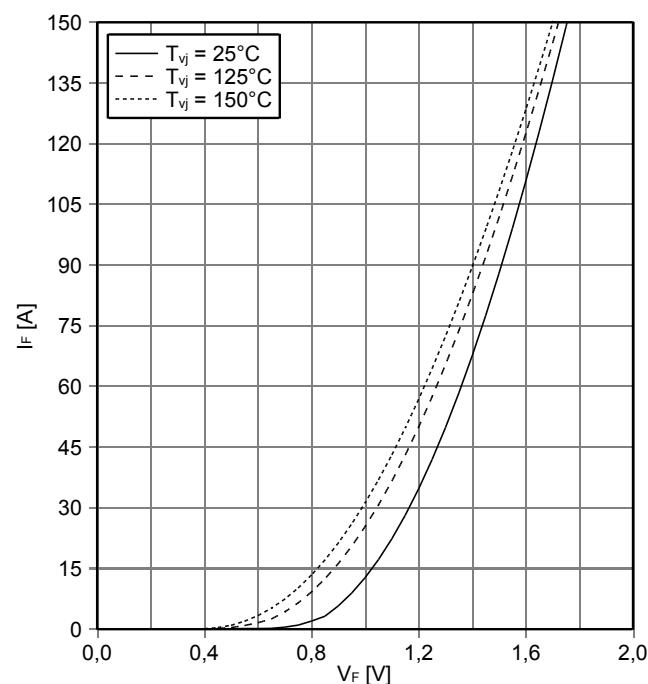
## Schaltverluste Diode, Wechselrichter (typisch) switching losses Diode, Inverter (typical)

 $E_{rec} = f(R_G)$   
 $I_F = 75 A$ ,  $V_{CE} = 300 V$ 


## Transienter Wärmewiderstand Diode, Wechselrichter transient thermal impedance Diode, Inverter

 $Z_{thJH} = f(t)$ 


## Durchlasskennlinie der Diode, D5-D6 (typisch) forward characteristic of Diode, D5-D6 (typical)

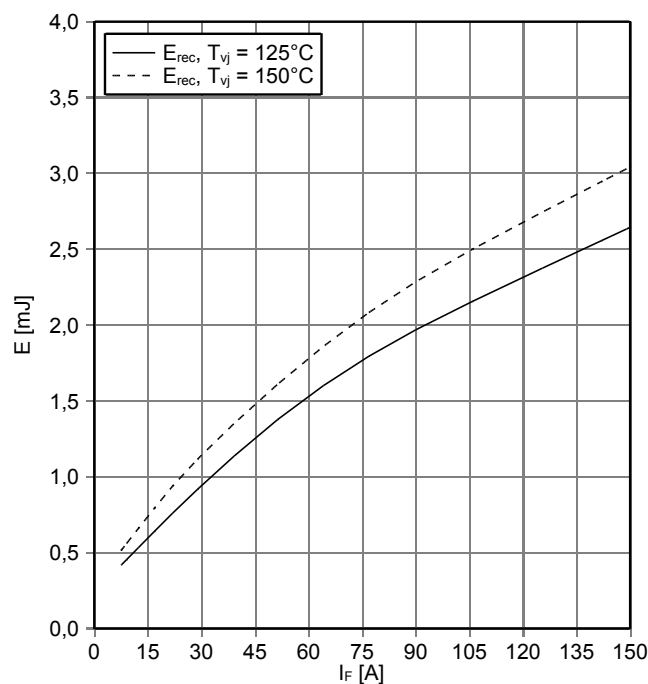
 $I_F = f(V_F)$ 




Vorläufige Daten  
Preliminary DataSchaltverluste Diode, D5-D6 (typisch)  
switching losses Diode, D5-D6 (typical)

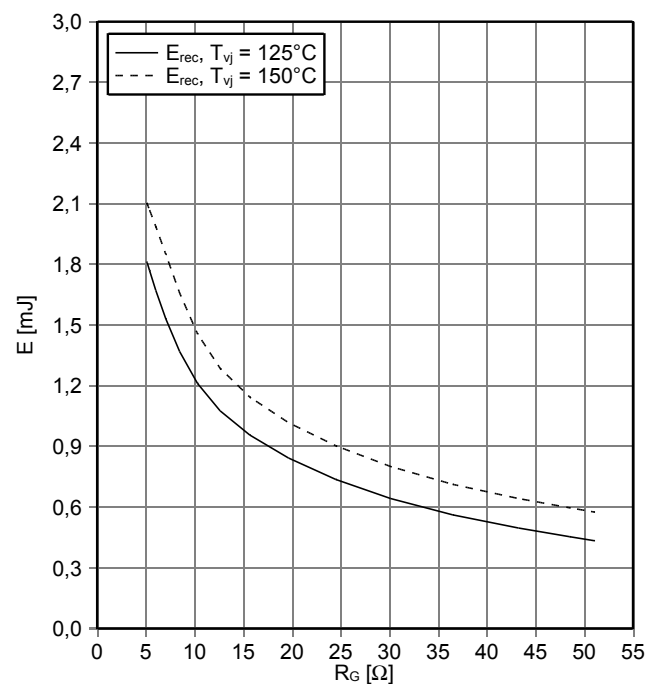
$E_{\text{rec}} = f(I_F)$

$R_{\text{Gon}} = 5.1 \, \Omega, V_{\text{CE}} = 300 \, \text{V}$

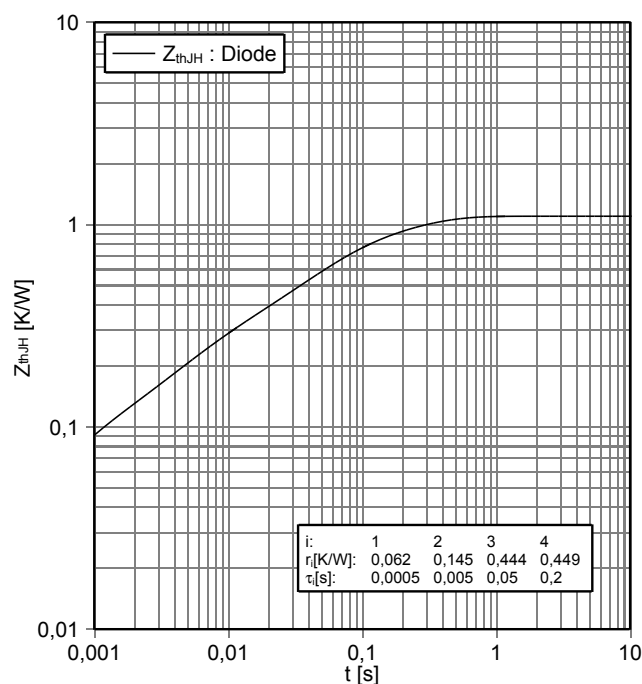
Schaltverluste Diode, D5-D6 (typisch)  
switching losses Diode, D5-D6 (typical)

$E_{\text{rec}} = f(R_G)$

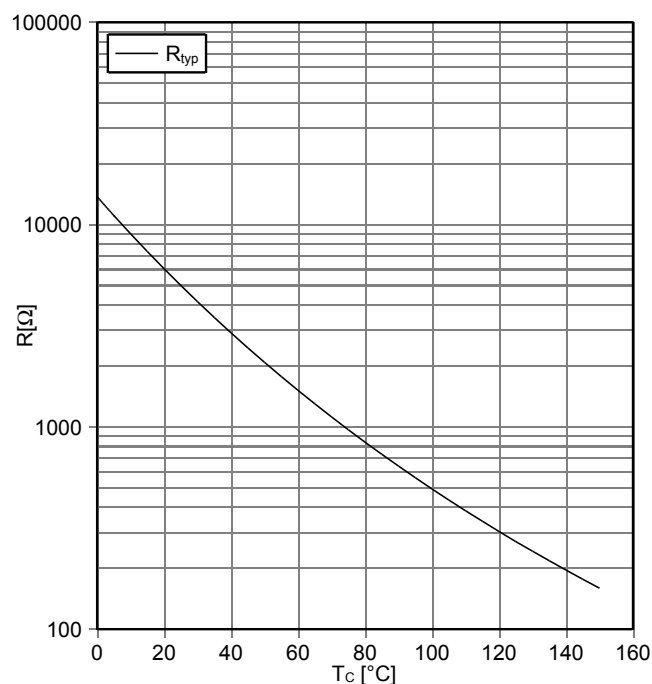
$I_F = 75 \, \text{A}, V_{\text{CE}} = 300 \, \text{V}$

Transienter Wärmewiderstand Diode, D5-D6  
transient thermal impedance Diode, D5-D6

$Z_{\text{thJH}} = f(t)$

NTC-Widerstand-Temperaturkennlinie (typisch)  
NTC-Thermistor-temperature characteristic (typical)

$R = f(T)$



prepared by: DK

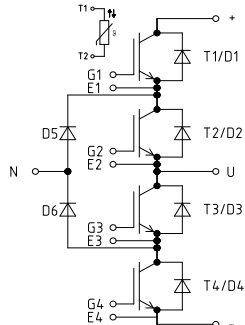
date of publication: 2013-11-05

approved by: MB

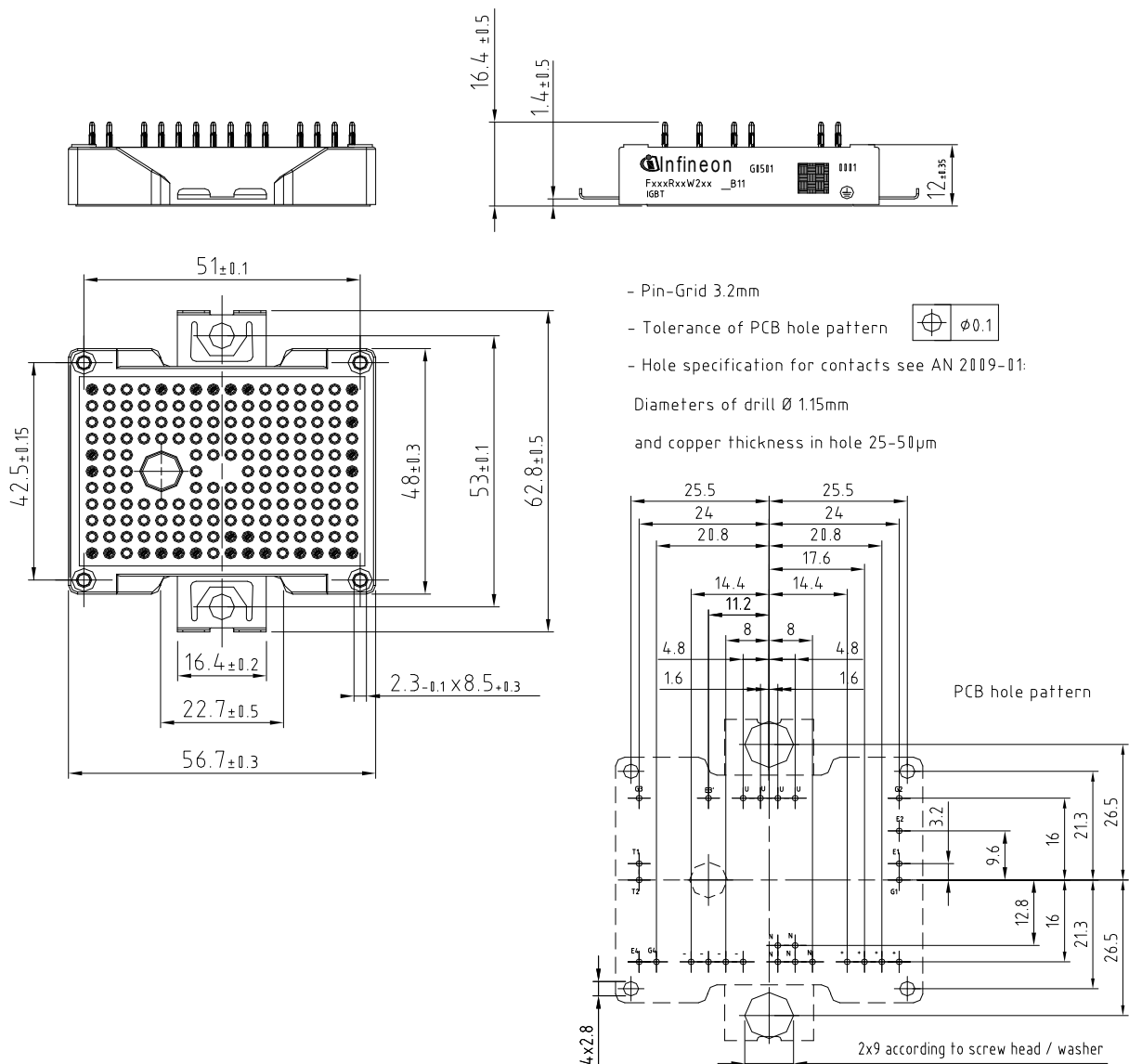
revision: 2.1

Vorläufige Daten  
Preliminary Data

## Schaltplan / circuit\_diagram\_headline



## Gehäuseabmessungen / package outlines

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## Vorläufige Daten Preliminary Data

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