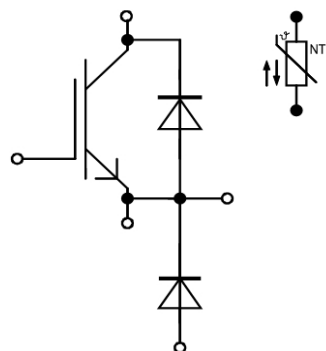


PrimePACK™2 Modul mit Trench/Feldstopp IGBT4, größerer Emitter Controlled 4 Diode  
PrimePACK™2 module with Trench/Fieldstop IGBT4, enlarged Emitter Controlled 4 diode

### Vorläufige Daten / Preliminary Data



$$V_{CES} = 1200V$$

$$I_{C\ nom} = 900A / I_{CRM} = 1800A$$

### Typische Anwendungen

- Hybrid-Nutzfahrzeuge

### Typical Applications

- Commercial Agriculture Vehicles

### Elektrische Eigenschaften

- Erweiterte Sperrschichttemperatur  $T_{vj\ op}$
- Große DC-Festigkeit
- Hohe Kurzschlussrobustheit, selbstlimitierender Kurzschlussstrom
- Niedriges  $V_{CESat}$
- $V_{CESat}$  mit positivem Temperaturkoeffizienten

### Electrical Features

- Extended Operation Temperature  $T_{vj\ op}$
- High DC Stability
- High Short Circuit Capability, Self Limiting Short Circuit Current
- Low  $V_{CESat}$
- $V_{CESat}$  with positive Temperature Coefficient

### Mechanische Eigenschaften

- 4 kV AC 1min Isolationsfestigkeit
- Gehäuse mit CTI > 400
- Große Luft- und Kriechstrecken
- Hohe Last- und thermische Wechselfestigkeit
- Hohe Leistungsdichte
- Substrat für kleinen thermischen Widerstand

### Mechanical Features

- 4 kV AC 1min Insulation
- Package with CTI > 400
- High Creepage and Clearance Distances
- High Power and Thermal Cycling Capability
- High Power Density
- Substrate for Low Thermal Resistance

### Module Label Code

#### Barcode Code 128



000001234560000000000000

#### DMX - 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: TA | date of publication: 2014-04-29 |                      |
| approved by: IB | revision: 2.0                   | UL approved (E83335) |

Vorläufige Daten  
Preliminary Data

## IGBT-Chopper / IGBT-Chopper

## Höchstzulässige Werte / Maximum Rated Values

|                                                                          |                                                               |                    |       |    |
|--------------------------------------------------------------------------|---------------------------------------------------------------|--------------------|-------|----|
| Kollektor-Emitter-Sperrspannung<br>Collector-emitter voltage             | $T_{vj} = 25^{\circ}\text{C}$                                 | $V_{CES}$          | 1200  | V  |
| Kollektor-Dauergleichstrom<br>Continuous DC collector current            | $T_C = 100^{\circ}\text{C}, T_{vj\max} = 175^{\circ}\text{C}$ | $I_{C\text{ nom}}$ | 900   | A  |
| Periodischer Kollektor-Spitzenstrom<br>Repetitive peak collector current | $t_P = 1\text{ ms}$                                           | $I_{CRM}$          | 1800  | A  |
| Gesamt-Verlustleistung<br>Total power dissipation                        | $T_C = 25^{\circ}\text{C}, T_{vj\max} = 175^{\circ}\text{C}$  | $P_{\text{tot}}$   | 5,10  | kW |
| 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    | $I_C = 900\text{ A}, V_{GE} = 15\text{ V}$<br>$I_C = 900\text{ A}, V_{GE} = 15\text{ V}$<br>$I_C = 900\text{ A}, V_{GE} = 15\text{ V}$                                                      | $T_{vj} = 25^{\circ}\text{C}$<br>$T_{vj} = 125^{\circ}\text{C}$<br>$T_{vj} = 150^{\circ}\text{C}$ | $V_{CE\text{ sat}}$ | 1,70<br>2,00<br>2,10 | 2,05 | V<br>V<br>V                                     |
| Gate-Schwellenspannung<br>Gate threshold voltage                                | $I_C = 33,0\text{ mA}, V_{CE} = V_{GE}, T_{vj} = 25^{\circ}\text{C}$                                                                                                                        |                                                                                                   | $V_{GEth}$          | 5,0                  | 5,8  | 6,5 V                                           |
| Gateladung<br>Gate charge                                                       | $V_{GE} = -15\text{ V} \dots +15\text{ V}$                                                                                                                                                  |                                                                                                   | $Q_G$               | 6,40                 |      | $\mu\text{C}$                                   |
| Interner Gatewiderstand<br>Internal gate resistor                               | $T_{vj} = 25^{\circ}\text{C}$                                                                                                                                                               |                                                                                                   | $R_{Gint}$          | 1,2                  |      | $\Omega$                                        |
| Eingangskapazität<br>Input capacitance                                          | $f = 1\text{ MHz}, T_{vj} = 25^{\circ}\text{C}, V_{CE} = 25\text{ V}, V_{GE} = 0\text{ V}$                                                                                                  |                                                                                                   | $C_{ies}$           | 54,0                 |      | nF                                              |
| Rückwirkungskapazität<br>Reverse transfer capacitance                           | $f = 1\text{ MHz}, T_{vj} = 25^{\circ}\text{C}, V_{CE} = 25\text{ V}, V_{GE} = 0\text{ V}$                                                                                                  |                                                                                                   | $C_{res}$           | 2,80                 |      | nF                                              |
| Kollektor-Emitter-Reststrom<br>Collector-emitter cut-off current                | $V_{CE} = 1200\text{ V}, V_{GE} = 0\text{ V}, T_{vj} = 25^{\circ}\text{C}$                                                                                                                  |                                                                                                   | $I_{CES}$           |                      | 5,0  | 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 | $I_C = 900\text{ A}, V_{CE} = 600\text{ V}$<br>$V_{GE} = \pm 15\text{ V}$<br>$R_{Gon} = 1,6\ \Omega$                                                                                        | $T_{vj} = 25^{\circ}\text{C}$<br>$T_{vj} = 125^{\circ}\text{C}$<br>$T_{vj} = 150^{\circ}\text{C}$ | $t_{d\text{ on}}$   | 0,20<br>0,22<br>0,22 |      | $\mu\text{s}$<br>$\mu\text{s}$<br>$\mu\text{s}$ |
| Anstiegszeit, induktive Last<br>Rise time, inductive load                       | $I_C = 900\text{ A}, V_{CE} = 600\text{ V}$<br>$V_{GE} = \pm 15\text{ V}$<br>$R_{Gon} = 1,6\ \Omega$                                                                                        | $T_{vj} = 25^{\circ}\text{C}$<br>$T_{vj} = 125^{\circ}\text{C}$<br>$T_{vj} = 150^{\circ}\text{C}$ | $t_r$               | 0,14<br>0,15<br>0,15 |      | $\mu\text{s}$<br>$\mu\text{s}$<br>$\mu\text{s}$ |
| Abschaltverzögerungszeit, induktive Last<br>Turn-off delay time, inductive load | $I_C = 900\text{ A}, V_{CE} = 600\text{ V}$<br>$V_{GE} = \pm 15\text{ V}$<br>$R_{Goff} = 1,6\ \Omega$                                                                                       | $T_{vj} = 25^{\circ}\text{C}$<br>$T_{vj} = 125^{\circ}\text{C}$<br>$T_{vj} = 150^{\circ}\text{C}$ | $t_{d\text{ off}}$  | 0,70<br>0,80<br>0,85 |      | $\mu\text{s}$<br>$\mu\text{s}$<br>$\mu\text{s}$ |
| Fallzeit, induktive Last<br>Fall time, inductive load                           | $I_C = 900\text{ A}, V_{CE} = 600\text{ V}$<br>$V_{GE} = \pm 15\text{ V}$<br>$R_{Goff} = 1,6\ \Omega$                                                                                       | $T_{vj} = 25^{\circ}\text{C}$<br>$T_{vj} = 125^{\circ}\text{C}$<br>$T_{vj} = 150^{\circ}\text{C}$ | $t_f$               | 0,20<br>0,40<br>0,45 |      | $\mu\text{s}$<br>$\mu\text{s}$<br>$\mu\text{s}$ |
| Einschaltverlustenergie pro Puls<br>Turn-on energy loss per pulse               | $I_C = 900\text{ A}, V_{CE} = 600\text{ V}, L_S = 45\text{ nH}$<br>$V_{GE} = \pm 15\text{ V}, di/dt = 4800\text{ A}/\mu\text{s} (T_{vj} = 150^{\circ}\text{C})$<br>$R_{Gon} = 1,6\ \Omega$  | $T_{vj} = 25^{\circ}\text{C}$<br>$T_{vj} = 125^{\circ}\text{C}$<br>$T_{vj} = 150^{\circ}\text{C}$ | $E_{on}$            | 50,0<br>70,0<br>80,0 |      | mJ<br>mJ<br>mJ                                  |
| Abschaltverlustenergie pro Puls<br>Turn-off energy loss per pulse               | $I_C = 900\text{ A}, V_{CE} = 600\text{ V}, L_S = 45\text{ nH}$<br>$V_{GE} = \pm 15\text{ V}, du/dt = 2700\text{ V}/\mu\text{s} (T_{vj} = 150^{\circ}\text{C})$<br>$R_{Goff} = 1,6\ \Omega$ | $T_{vj} = 25^{\circ}\text{C}$<br>$T_{vj} = 125^{\circ}\text{C}$<br>$T_{vj} = 150^{\circ}\text{C}$ | $E_{off}$           | 150<br>200<br>205    |      | mJ<br>mJ<br>mJ                                  |
| Kurzschlußverhalten<br>SC data                                                  | $V_{GE} \leq 15\text{ V}, V_{CC} = 800\text{ V}$<br>$V_{CE\text{ max}} = V_{CES} - L_{SCE} \cdot di/dt$<br>$t_P \leq 10\ \mu\text{s}, T_{vj} = 150^{\circ}\text{C}$                         |                                                                                                   | $I_{SC}$            | 3600                 |      | A                                               |
| Wärmewiderstand, Chip bis Gehäuse<br>Thermal resistance, junction to case       | pro IGBT / per IGBT                                                                                                                                                                         |                                                                                                   | $R_{thJC}$          |                      | 29,5 | K/kW                                            |
| Wärmewiderstand, Gehäuse bis Kühlkörper<br>Thermal resistance, case to heatsink | pro IGBT / per IGBT<br>$\lambda_{\text{Paste}} = 1\text{ W}/(\text{m} \cdot \text{K})$ / $\lambda_{\text{grease}} = 1\text{ W}/(\text{m} \cdot \text{K})$                                   |                                                                                                   | $R_{thCH}$          | 16,0                 |      | K/kW                                            |
| Temperatur im Schaltbetrieb<br>Temperature under switching conditions           |                                                                                                                                                                                             |                                                                                                   | $T_{vj\text{ op}}$  | -40                  | 150  | $^{\circ}\text{C}$                              |

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Vorläufige Daten  
Preliminary Data

## Diode-Chopper / Diode-Chopper

## Höchstzulässige Werte / Maximum Rated Values

|                                                                |                                                                                                                                              |           |            |                                                |
|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------|------------------------------------------------|
| Periodische Spitzenspannung<br>Repetitive peak reverse voltage | $T_{vj} = 25^{\circ}\text{C}$                                                                                                                | $V_{RRM}$ | 1200       | V                                              |
| Dauergleichstrom<br>Continuous DC forward current              |                                                                                                                                              | $I_F$     | 900        | A                                              |
| Periodischer Spitzenstrom<br>Repetitive peak forward current   | $t_P = 1\text{ ms}$                                                                                                                          | $I_{FRM}$ | 1800       | A                                              |
| Grenzlastintegral<br>$I^2t$ - value                            | $V_R = 0\text{ V}, t_P = 10\text{ ms}, T_{vj} = 125^{\circ}\text{C}$<br>$V_R = 0\text{ V}, t_P = 10\text{ ms}, T_{vj} = 150^{\circ}\text{C}$ | $I^2t$    | 150<br>145 | $\text{kA}^2\text{s}$<br>$\text{kA}^2\text{s}$ |

## Charakteristische Werte / Characteristic Values

|                                                                                 |                                                                                                                                           |                                                                                                   | min.               | typ.                 | max. |                                                 |
|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--------------------|----------------------|------|-------------------------------------------------|
| Durchlassspannung<br>Forward voltage                                            | $I_F = 900\text{ A}, V_{GE} = 0\text{ V}$<br>$I_F = 900\text{ A}, V_{GE} = 0\text{ V}$<br>$I_F = 900\text{ A}, V_{GE} = 0\text{ V}$       | $T_{vj} = 25^{\circ}\text{C}$<br>$T_{vj} = 125^{\circ}\text{C}$<br>$T_{vj} = 150^{\circ}\text{C}$ | $V_F$              | 1,65<br>1,55<br>1,50 | 2,15 | V<br>V<br>V                                     |
| Rückstromspitze<br>Peak reverse recovery current                                | $I_F = 900\text{ A}, -di_F/dt = 4800\text{ A}/\mu\text{s} (T_{vj}=150^{\circ}\text{C})$<br>$V_R = 600\text{ V}$                           | $T_{vj} = 25^{\circ}\text{C}$<br>$T_{vj} = 125^{\circ}\text{C}$<br>$T_{vj} = 150^{\circ}\text{C}$ | $I_{RM}$           | 560<br>770<br>820    |      | A<br>A<br>A                                     |
| Sperrverzögerungsladung<br>Recovered charge                                     | $I_F = 900\text{ A}, -di_F/dt = 4800\text{ A}/\mu\text{s} (T_{vj}=150^{\circ}\text{C})$<br>$V_R = 600\text{ V}$                           | $T_{vj} = 25^{\circ}\text{C}$<br>$T_{vj} = 125^{\circ}\text{C}$<br>$T_{vj} = 150^{\circ}\text{C}$ | $Q_r$              | 110<br>200<br>225    |      | $\mu\text{C}$<br>$\mu\text{C}$<br>$\mu\text{C}$ |
| Abschaltenergie pro Puls<br>Reverse recovery energy                             | $I_F = 900\text{ A}, -di_F/dt = 4800\text{ A}/\mu\text{s} (T_{vj}=150^{\circ}\text{C})$<br>$V_R = 600\text{ V}$                           | $T_{vj} = 25^{\circ}\text{C}$<br>$T_{vj} = 125^{\circ}\text{C}$<br>$T_{vj} = 150^{\circ}\text{C}$ | $E_{rec}$          | 50,0<br>90,0<br>105  |      | mJ<br>mJ<br>mJ                                  |
| Wärmewiderstand, Chip bis Gehäuse<br>Thermal resistance, junction to case       | pro Diode / per diode                                                                                                                     |                                                                                                   | $R_{thJC}$         |                      | 37,0 | K/kW                                            |
| Wärmewiderstand, Gehäuse bis Kühlkörper<br>Thermal resistance, case to heatsink | pro Diode / per diode<br>$\lambda_{Paste} = 1\text{ W}/(\text{m}\cdot\text{K})$ / $\lambda_{grease} = 1\text{ W}/(\text{m}\cdot\text{K})$ |                                                                                                   | $R_{thCH}$         | 20,0                 |      | K/kW                                            |
| Temperatur im Schaltbetrieb<br>Temperature under switching conditions           |                                                                                                                                           |                                                                                                   | $T_{vj\text{ op}}$ | -40                  | 150  | $^{\circ}\text{C}$                              |

## Diode, Revers / Diode, Reverse

## Höchstzulässige Werte / Maximum Rated Values

|                                                                |                                                                      |           |      |                       |
|----------------------------------------------------------------|----------------------------------------------------------------------|-----------|------|-----------------------|
| Periodische Spitzenspannung<br>Repetitive peak reverse voltage | $T_{vj} = 25^{\circ}\text{C}$                                        | $V_{RRM}$ | 1200 | V                     |
| Dauergleichstrom<br>Continuous DC forward current              |                                                                      | $I_F$     | 120  | A                     |
| Periodischer Spitzenstrom<br>Repetitive peak forward current   | $t_P = 1\text{ ms}$                                                  | $I_{FRM}$ | 240  | A                     |
| Grenzlastintegral<br>$I^2t$ - value                            | $V_R = 0\text{ V}, t_P = 10\text{ ms}, T_{vj} = 125^{\circ}\text{C}$ | $I^2t$    | 0,17 | $\text{kA}^2\text{s}$ |

## Charakteristische Werte / Characteristic Values

|                                                                                 |                                                                                                                                           |                                                                 | min.               | typ.         | max. |                    |
|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|--------------------|--------------|------|--------------------|
| Durchlassspannung<br>Forward voltage                                            | $I_F = 120\text{ A}, V_{GE} = 0\text{ V}$<br>$I_F = 120\text{ A}, V_{GE} = 0\text{ V}$                                                    | $T_{vj} = 25^{\circ}\text{C}$<br>$T_{vj} = 125^{\circ}\text{C}$ | $V_F$              | 1,65<br>1,65 | 2,15 | V<br>V             |
| Wärmewiderstand, Chip bis Gehäuse<br>Thermal resistance, junction to case       | pro Diode / per diode                                                                                                                     |                                                                 | $R_{thJC}$         |              | 340  | K/kW               |
| Wärmewiderstand, Gehäuse bis Kühlkörper<br>Thermal resistance, case to heatsink | pro Diode / per diode<br>$\lambda_{Paste} = 1\text{ W}/(\text{m}\cdot\text{K})$ / $\lambda_{grease} = 1\text{ W}/(\text{m}\cdot\text{K})$ |                                                                 | $R_{thCH}$         | 170          |      | K/kW               |
| Temperatur im Schaltbetrieb<br>Temperature under switching conditions           |                                                                                                                                           |                                                                 | $T_{vj\text{ op}}$ | -40          | 150  | $^{\circ}\text{C}$ |

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Vorläufige Daten  
Preliminary Data

## 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 | $T_C = 100^\circ\text{C}, R_{100} = 493 \Omega$                | $\Delta R/R$ | -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.

## Modul / Module

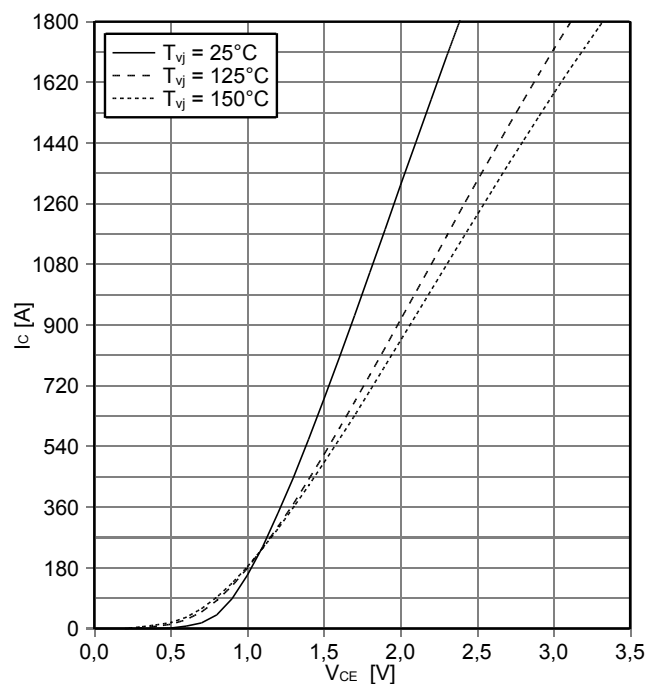
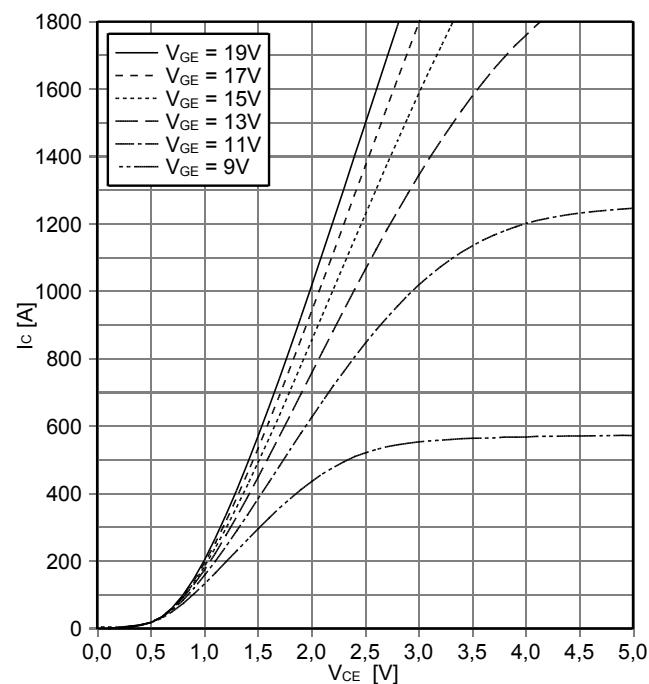
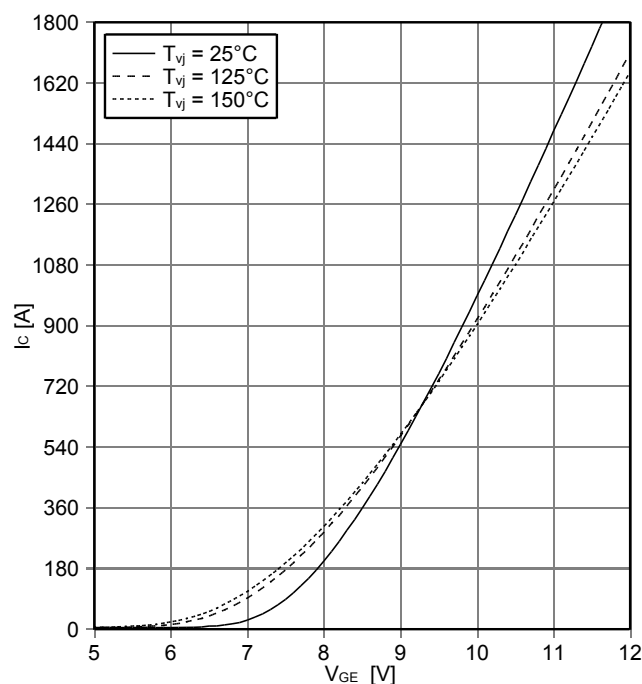
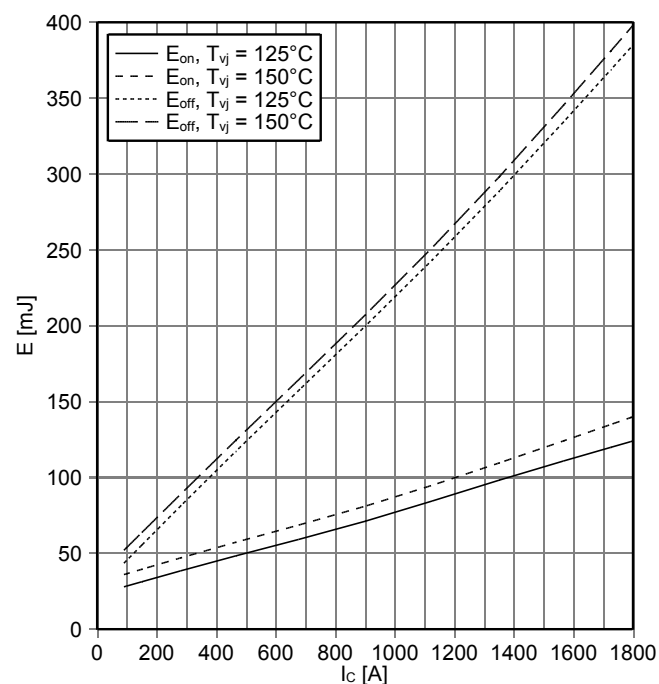
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|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------------|-------------------------|-----------|------------------|
| Isolations-Prüfspannung<br>Isolation test voltage                                      | RMS, $f = 50 \text{ Hz}$ , $t = 1 \text{ min.}$                                                                                                                                                                                          | $V_{\text{ISOL}}$          |            | 4,0                     |           | kV               |
| Material Modulgrundplatte<br>Material of module baseplate                              |                                                                                                                                                                                                                                          |                            |            | Cu                      |           |                  |
| Innere Isolation<br>Internal isolation                                                 | Basisisolation (Schutzklasse 1, EN61140)<br>basic insulation (class 1, IEC 61140)                                                                                                                                                        |                            |            | $\text{Al}_2\text{O}_3$ |           |                  |
| Kriechstrecke<br>Creepage distance                                                     | Kontakt - Kühlkörper / terminal to heatsink<br>Kontakt - Kontakt / terminal to terminal                                                                                                                                                  |                            |            | 33,0<br>33,0            |           | mm               |
| Luftstrecke<br>Clearance                                                               | Kontakt - Kühlkörper / terminal to heatsink<br>Kontakt - Kontakt / terminal to terminal                                                                                                                                                  |                            |            | 19,0<br>19,0            |           | mm               |
| Vergleichszahl der Kriechwegbildung<br>Comperative tracking index                      |                                                                                                                                                                                                                                          | CTI                        |            | > 400                   |           |                  |
|                                                                                        |                                                                                                                                                                                                                                          |                            | min.       | typ.                    | max.      |                  |
| Modulstreuinduktivität<br>Stray inductance module                                      |                                                                                                                                                                                                                                          | $L_{\text{sCE}}$           |            | 18                      |           | nH               |
| Modulleitungswiderstand, Anschlüsse - Chip<br>Module lead resistance, terminals - chip | $T_C = 25^\circ\text{C}$ , pro Schalter / per switch                                                                                                                                                                                     | $R_{\text{CC}+\text{EE}'}$ |            | 0,30                    |           | m $\Omega$       |
| Lagertemperatur<br>Storage temperature                                                 |                                                                                                                                                                                                                                          | $T_{\text{stg}}$           | -40        |                         | 150       | $^\circ\text{C}$ |
| Anzugsdrehmoment f. Modulmontage<br>Mounting torque for modul mounting                 | Schraube M5 - Montage gem. gültiger Applikationsschrift<br>Screw M5 - Mounting according to valid application note                                                                                                                       | M                          | 3,00       | -                       | 6,00      | Nm               |
| Anzugsdrehmoment f. elektr. Anschlüsse<br>Terminal connection torque                   | Schraube M4 - Montage gem. gültiger Applikationsschrift<br>Screw M4 - Mounting according to valid application note<br>Schraube M8 - Montage gem. gültiger Applikationsschrift<br>Screw M8 - Mounting according to valid application note | M                          | 1,8<br>8,0 | -<br>-                  | 2,1<br>10 | Nm<br>Nm         |
| Gewicht<br>Weight                                                                      |                                                                                                                                                                                                                                          | G                          |            | 825                     |           | g                |

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Vorläufige Daten  
Preliminary DataAusgangskennlinie IGBT-Chopper (typisch)  
output characteristic IGBT-Chopper (typical) $I_C = f(V_{CE})$   
 $V_{GE} = 15\text{ V}$ Ausgangskennlinienfeld IGBT-Chopper (typisch)  
output characteristic IGBT-Chopper (typical) $I_C = f(V_{CE})$   
 $T_{vj} = 150^\circ\text{C}$ Übertragungscharakteristik IGBT-Chopper (typisch)  
transfer characteristic IGBT-Chopper (typical) $I_C = f(V_{GE})$   
 $V_{CE} = 20\text{ V}$ Schaltverluste IGBT-Chopper (typisch)  
switching losses IGBT-Chopper (typical) $E_{on} = f(I_C)$ ,  $E_{off} = f(I_C)$   
 $V_{GE} = \pm 15\text{ V}$ ,  $R_{Gon} = 1.6\ \Omega$ ,  $R_{Goff} = 1.6\ \Omega$ ,  $V_{CE} = 600\text{ V}$ 

prepared by: TA

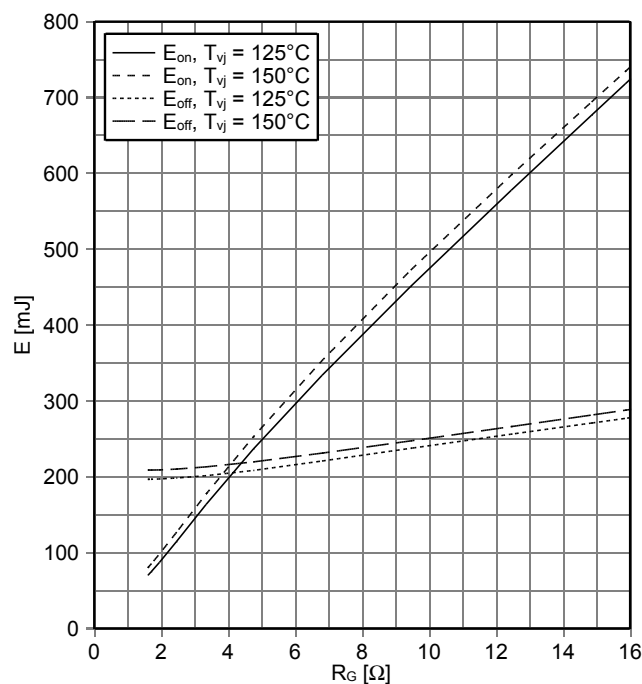
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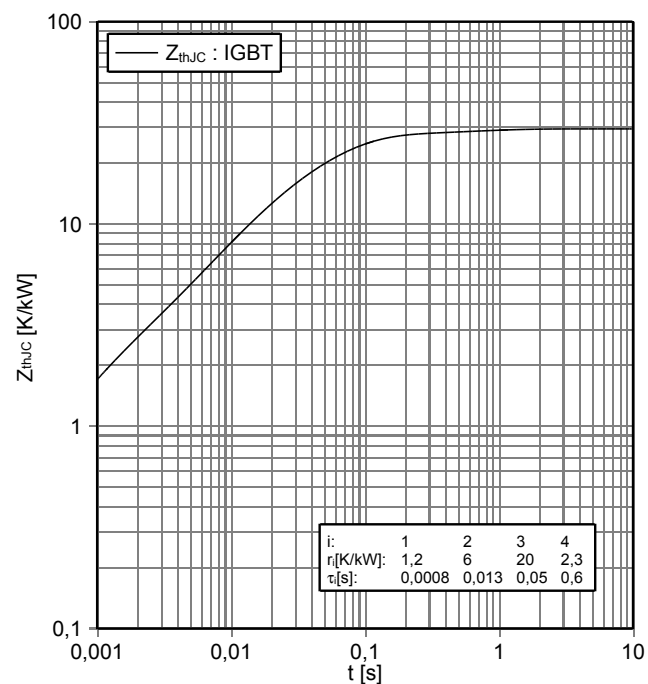
approved by: IB

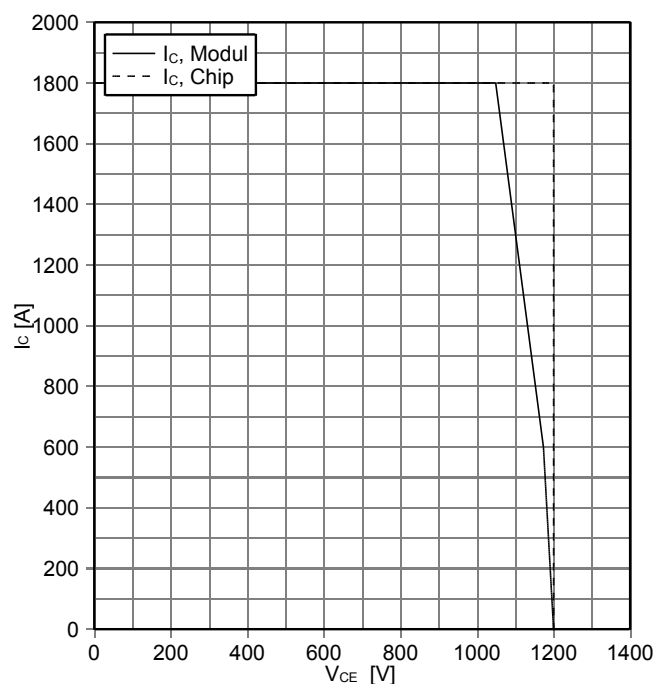
revision: 2.0

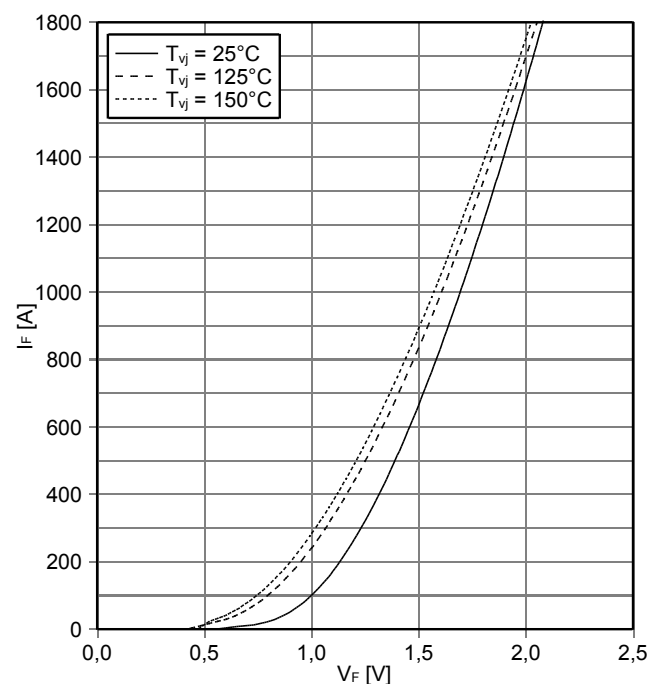
Vorläufige Daten  
Preliminary Data

Schaltverluste IGBT-Chopper (typisch)  
switching losses IGBT-Chopper (typical)

 $E_{on} = f(R_G)$ ,  $E_{off} = f(R_G)$ 
 $V_{GE} = \pm 15 \text{ V}$ ,  $I_C = 900 \text{ A}$ ,  $V_{CE} = 600 \text{ V}$ 

Transienter Wärmewiderstand IGBT-Chopper  
transient thermal impedance IGBT-Chopper

 $Z_{thJC} = f(t)$ 

Sicherer Rückwärts-Arbeitsbereich IGBT-Chopper (RBSOA)  
reverse bias safe operating area IGBT-Chopper (RBSOA)

 $I_C = f(V_{CE})$ 
 $V_{GE} = \pm 15 \text{ V}$ ,  $R_{Goff} = 1.6 \Omega$ ,  $T_{vj} = 150^\circ\text{C}$ 

Durchlasskennlinie der Diode-Chopper (typisch)  
forward characteristic of Diode-Chopper (typical)

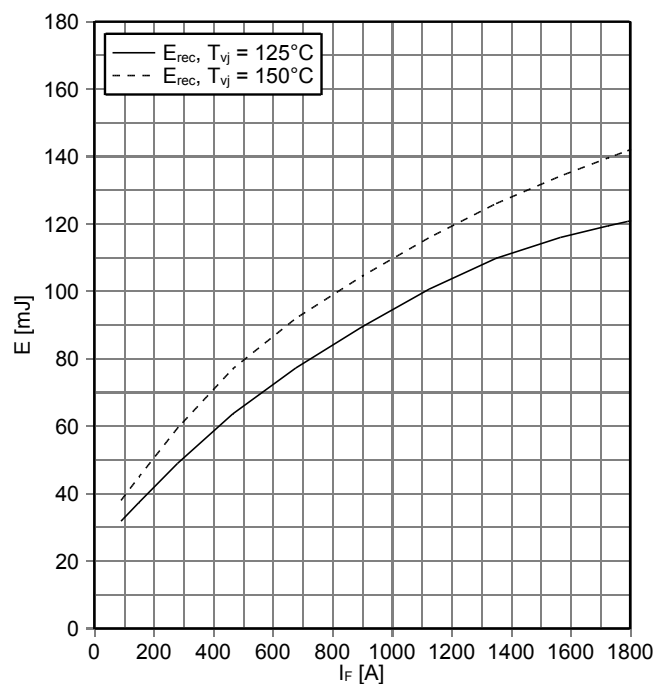
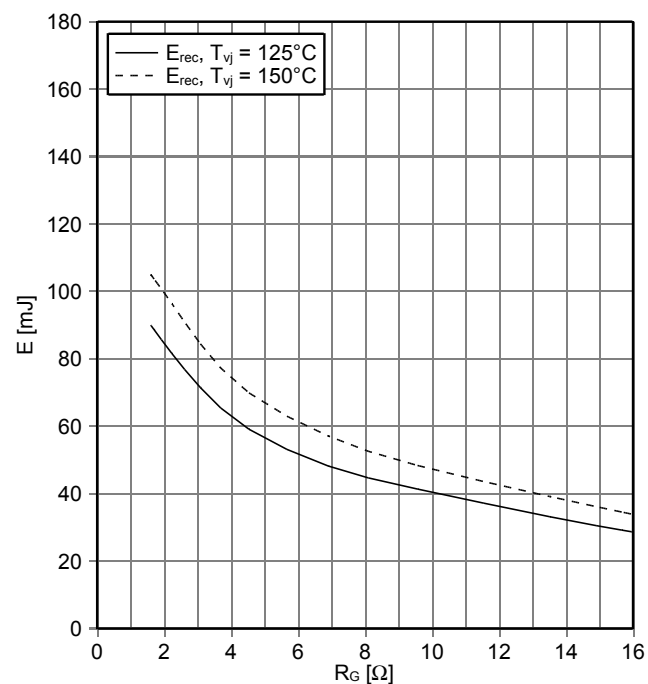
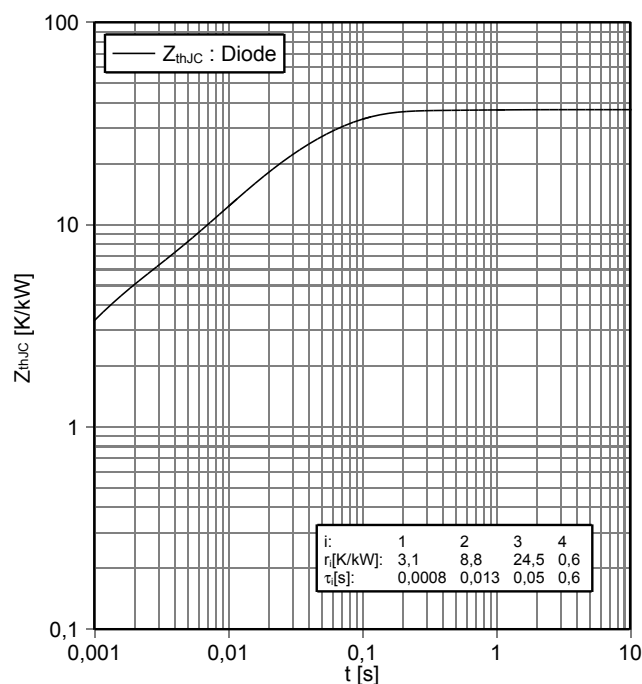
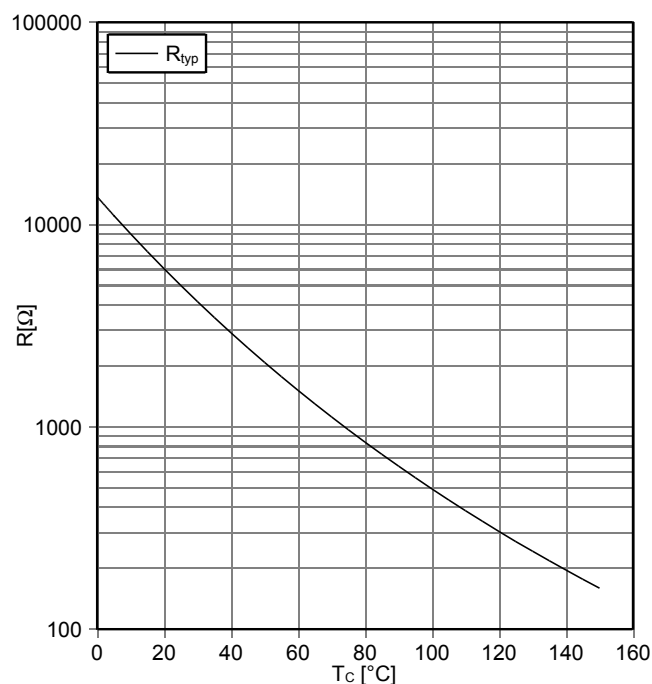
 $I_F = f(V_F)$ 


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Vorläufige Daten  
Preliminary DataSchaltverluste Diode-Chopper (typisch)  
switching losses Diode-Chopper (typical)
 $E_{rec} = f(I_F)$   
 $R_{Gon} = 1.6 \Omega$ ,  $V_{CE} = 600 V$ 
Schaltverluste Diode-Chopper (typisch)  
switching losses Diode-Chopper (typical)
 $E_{rec} = f(R_G)$   
 $I_F = 900 A$ ,  $V_{CE} = 600 V$ 
Transienter Wärmewiderstand Diode-Chopper  
transient thermal impedance Diode-Chopper $Z_{thJC} = f(t)$ NTC-Widerstand-Temperaturkennlinie (typisch)  
NTC-Thermistor-temperature characteristic (typical) $R = f(T)$ 

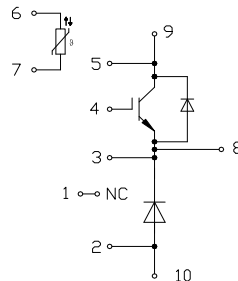
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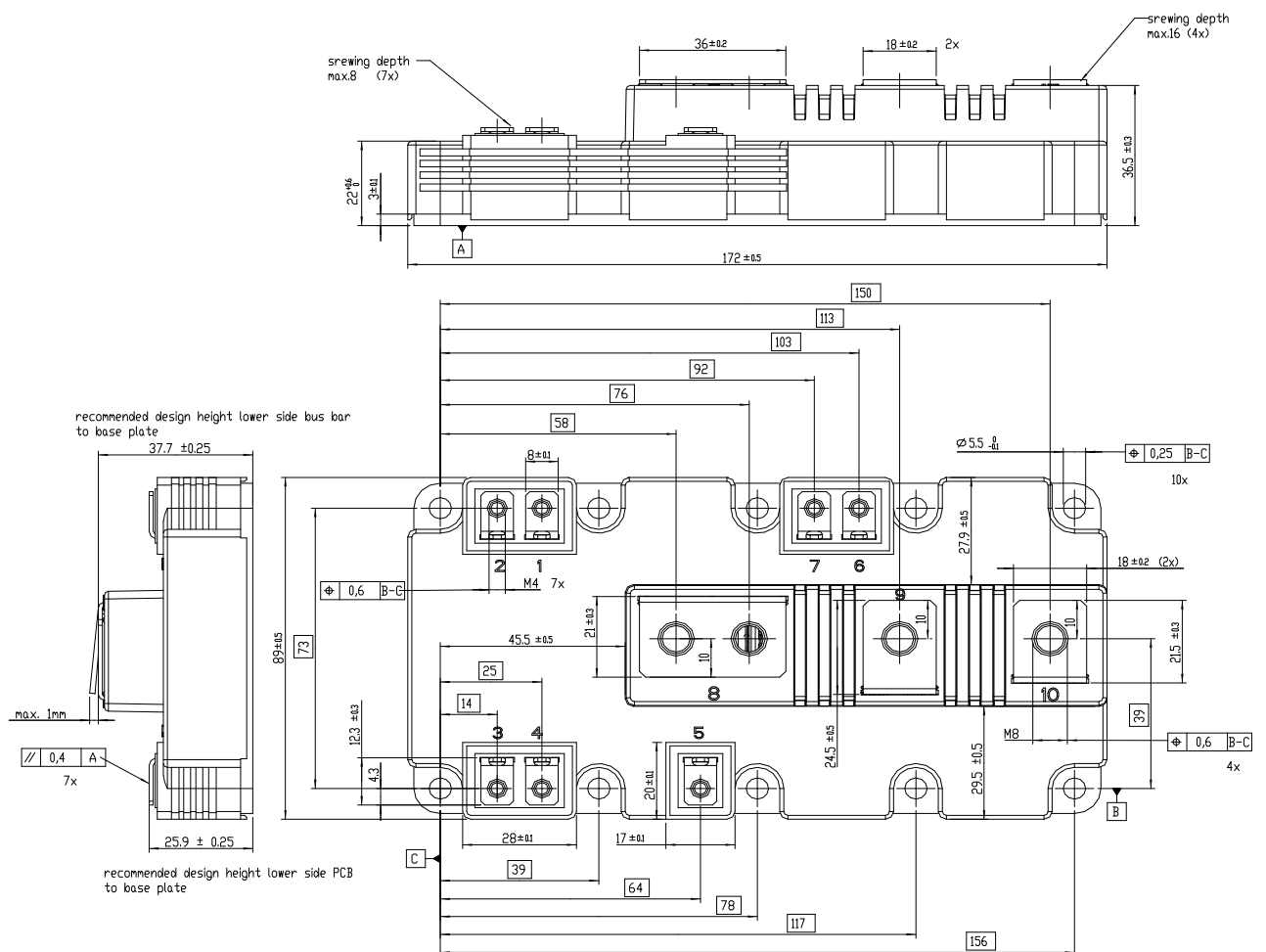
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## Schaltplan / circuit\_diagram\_headline



## Gehäuseabmessungen / package outlines



|                 |                                 |
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## Vorläufige Daten Preliminary Data

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- den Abschluss von speziellen Qualitätssicherungsvereinbarungen;
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- the conclusion of Quality Agreements;
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