

Diode, Wechselrichter / Diode, Inverter

Höchstzulässige Werte / Maximum Rated Values

| | | | | |
|---|--|-----------|--------------|--|
| Periodische Spitzensperrspannung Repetitive peak reverse voltage | $T_{vj} = 25^{\circ}\text{C}$ | V_{RRM} | 650 | V |
| Implementierter Durchlassstrom Implemented forward current | | I_{FN} | 30 | A |
| Dauergleichstrom Continuous DC forward current | | I_F | 30 | A |
| Periodischer Spitzenstrom Repetitive peak forward current | $t_p = 1\text{ ms}$ | I_{FRM} | 60 | A |
| Grenzlastintegral I^2t - value | $V_R = 0\text{ V}, t_p = 10\text{ ms}, T_{vj} = 125^{\circ}\text{C}$ $V_R = 0\text{ V}, t_p = 10\text{ ms}, T_{vj} = 150^{\circ}\text{C}$ | I^2t | 90,0 82,0 | A^2s A^2s |

Charakteristische Werte / Characteristic Values

| | | | | min. | typ. | max. | |
|--|--|--------------------------------|--------------------|------|------|------|--------------------|
| Durchlassspannung Forward voltage | $I_F = 30\text{ A}, V_{GE} = 0\text{ V}$ | $T_{vj} = 25^{\circ}\text{C}$ | V_F | | 1,60 | 2,00 | V |
| | $I_F = 30\text{ A}, V_{GE} = 0\text{ V}$ | $T_{vj} = 125^{\circ}\text{C}$ | | | 1,55 | | V |
| | $I_F = 30\text{ A}, V_{GE} = 0\text{ V}$ | $T_{vj} = 150^{\circ}\text{C}$ | | | 1,50 | | V |
| Wärmewiderstand, Chip bis Kühlkörper Thermal resistance, junction to heatsink | pro Diode / per diode valid with IFX pre-applied thermal interface material | | R_{thJH} | | | 2,44 | K/W |
| Temperatur im Schaltbetrieb Temperature under switching conditions | | | $T_{vj\text{ op}}$ | -40 | | 150 | $^{\circ}\text{C}$ |

Diode, Hochsetzsteller / Diode, Boost

Höchstzulässige Werte / Maximum Rated Values

| | | | | |
|---|--|-----------|------|----------------------|
| Periodische Spitzensperrspannung Repetitive peak reverse voltage | $T_{vj} = 25^{\circ}\text{C}$ | V_{RRM} | 650 | V |
| Dauergleichstrom Continuous DC forward current | | I_F | 30 | A |
| Periodischer Spitzenstrom Repetitive peak forward current | $t_p = 1\text{ ms}$ | I_{FRM} | 60 | A |
| Grenzlastintegral I^2t - value | $V_R = 0\text{ V}, t_p = 10\text{ ms}, T_{vj} = 125^{\circ}\text{C}$ | I^2t | 40,5 | A^2s |

Charakteristische Werte / Characteristic Values

| | | | | min. | typ. | max. | |
|--|--|---|--------------------|------|--------------------------|------|---|
| Durchlassspannung Forward voltage | $I_F = 30\text{ A}, V_{GE} = 0\text{ V}$ | $T_{vj} = 25^{\circ}\text{C}$ | V_F | | 1,45 | 1,85 | V |
| | $I_F = 30\text{ A}, V_{GE} = 0\text{ V}$ | $T_{vj} = 125^{\circ}\text{C}$ | | | 1,60 | | V |
| | $I_F = 30\text{ A}, V_{GE} = 0\text{ V}$ | $T_{vj} = 150^{\circ}\text{C}$ | | | 1,65 | | V |
| Rückstromspitze Peak reverse recovery current | $I_F = 30\text{ A}, -di_F/dt = 4200\text{ A}/\mu\text{s} (T_{vj}=150^{\circ}\text{C})$ $V_R = 400\text{ V}$ | $T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 150^{\circ}\text{C}$ | I_{RM} | | 10,5 10,0 10,0 | | A A A |
| Sperrverzögerungsladung Recovered charge | $I_F = 30\text{ A}, -di_F/dt = 4200\text{ A}/\mu\text{s} (T_{vj}=150^{\circ}\text{C})$ $V_R = 400\text{ V}$ | $T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 150^{\circ}\text{C}$ | Q_r | | 0,012 0,0125 0,013 | | μC μC μC |
| Abschaltenergie pro Puls Reverse recovery energy | $I_F = 30\text{ A}, -di_F/dt = 4200\text{ A}/\mu\text{s} (T_{vj}=150^{\circ}\text{C})$ $V_R = 400\text{ V}$ | $T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 150^{\circ}\text{C}$ | E_{rec} | | 0,04 0,0405 0,041 | | mJ mJ mJ |
| Wärmewiderstand, Chip bis Kühlkörper Thermal resistance, junction to heatsink | pro Diode / per diode valid with IFX pre-applied thermal interface material | | R_{thJH} | | | 1,50 | K/W |
| Temperatur im Schaltbetrieb 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 Rated resistance | $T_{NTC} = 25^{\circ}\text{C}$ | R_{25} | | 5,00 | | k Ω |
| Abweichung von R100 Deviation of R100 | $T_{NTC} = 100^{\circ}\text{C}, R_{100} = 493 \Omega$ | $\Delta R/R$ | -5 | | 5 | % |
| Verlustleistung Power dissipation | $T_{NTC} = 25^{\circ}\text{C}$ | P_{25} | | | 20,0 | mW |
| B-Wert 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 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 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

| | | | | | | |
|--|---|-------------|------|-------------------------|------|--------------------|
| Isolations-Prüfspannung Isolation test voltage | RMS, f = 50 Hz, t = 1 min. | V_{ISOL} | | 2,5 | | kV |
| Innere Isolation Internal isolation | Basisisolation (Schutzklasse 1, EN61140) basic insulation (class 1, IEC 61140) | | | Al_2O_3 | | |
| Kriechstrecke Creepage distance | Kontakt - Kühlkörper / terminal to heatsink Kontakt - Kontakt / terminal to terminal | | | 11,5 6,3 | | mm |
| Luftstrecke Clearance | Kontakt - Kühlkörper / terminal to heatsink Kontakt - Kontakt / terminal to terminal | | | 10,0 5,0 | | mm |
| Vergleichszahl der Kriechwegbildung Comperative tracking index | | CTI | | > 200 | | |
| | | | min. | typ. | max. | |
| Modulstreueinduktivität Stray inductance module | | L_{sCE} | | 15 | | nH |
| Lagertemperatur Storage temperature | | T_{stg} | -40 | | 125 | $^{\circ}\text{C}$ |
| Höchstzulässige Bodenplattenbetriebstemperatur Maximum baseplate operation temperature | | T_{BPmax} | | | 125 | $^{\circ}\text{C}$ |
| Anpresskraft für mech. Bef. pro Feder mounting force per clamp | | F | 20 | - | 50 | N |
| Gewicht Weight | | G | | 24 | | 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.
Lagerung und Transport von Modulen mit TIM => siehe AN2012-07
Storage and shipment of modules with TIM => see AN2012-07