

Vorläufige Daten Preliminary Data

Diode, Wechselrichter / Diode, Inverter

Höchstzulässige Werte / Maximum Rated Values

Periodische Spitzenspannung Repetitive peak reverse voltage	$T_{vj} = 25^{\circ}\text{C}$	V_{RRM}	650	V
Implementierter Durchlassstrom Implemented forward current		I_{FN}	300	A
Dauergleichstrom Continuous DC forward current		I_F	280	A
Periodischer Spitzenstrom Repetitive peak forward current	$t_P = 1\text{ ms}$	I_{FRM}	600	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	6000 5600	A^2s A^2s

Charakteristische Werte / Characteristic Values

			min.	typ.	max.	
Durchlassspannung Forward voltage	$I_F = 280\text{ A}, V_{GE} = 0\text{ V}$	$T_{vj} = 25^{\circ}\text{C}$		1,50	1,90	V
	$I_F = 280\text{ A}, V_{GE} = 0\text{ V}$	$T_{vj} = 125^{\circ}\text{C}$	V_F	1,45		V
	$I_F = 280\text{ A}, V_{GE} = 0\text{ V}$	$T_{vj} = 150^{\circ}\text{C}$		1,40		V
Rückstromspitze Peak reverse recovery current	$I_F = 280\text{ A}, -di_F/dt = 3300\text{ A}/\mu\text{s} (T_{vj}=150^{\circ}\text{C})$	$T_{vj} = 25^{\circ}\text{C}$		130		A
	$V_R = 300\text{ V}$	$T_{vj} = 125^{\circ}\text{C}$	I_{RM}	190		A
	$V_{GE} = -15\text{ V}$	$T_{vj} = 150^{\circ}\text{C}$		200		A
Sperrverzögerungsladung Recovered charge	$I_F = 280\text{ A}, -di_F/dt = 3300\text{ A}/\mu\text{s} (T_{vj}=150^{\circ}\text{C})$	$T_{vj} = 25^{\circ}\text{C}$		9,00		μC
	$V_R = 300\text{ V}$	$T_{vj} = 125^{\circ}\text{C}$	Q_r	20,0		μC
	$V_{GE} = -15\text{ V}$	$T_{vj} = 150^{\circ}\text{C}$		23,0		μC
Abschaltenergie pro Puls Reverse recovery energy	$I_F = 280\text{ A}, -di_F/dt = 3300\text{ A}/\mu\text{s} (T_{vj}=150^{\circ}\text{C})$	$T_{vj} = 25^{\circ}\text{C}$		3,25		mJ
	$V_R = 300\text{ V}$	$T_{vj} = 125^{\circ}\text{C}$	E_{rec}	5,90		mJ
	$V_{GE} = -15\text{ V}$	$T_{vj} = 150^{\circ}\text{C}$		6,80		mJ
Wärmewiderstand, Chip bis Kühlkörper Thermal resistance, junction to heatsink	pro Diode / per diode valid with IFX pre-applied thermal interface material	R_{thJH}			0,369	K/W
Temperatur im Schaltbetrieb Temperature under switching conditions		$T_{vj\text{ op}}$	-40		150	$^{\circ}\text{C}$

Diode, 3-Level / Diode, 3-Level

Höchstzulässige Werte / Maximum Rated Values

Periodische Spitzenspannung Repetitive peak reverse voltage	$T_{vj} = 25^{\circ}\text{C}$	V_{RRM}	650	V
Implementierter Durchlassstrom Implemented forward current		I_{FN}	300	A
Dauergleichstrom Continuous DC forward current		I_F	280	A
Periodischer Spitzenstrom Repetitive peak forward current	$t_P = 1\text{ ms}$	I_{FRM}	600	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	6000 5600	A^2s A^2s

Charakteristische Werte / Characteristic Values

			min.	typ.	max.	
Durchlassspannung Forward voltage	$I_F = 280\text{ A}, V_{GE} = 0\text{ V}$	$T_{vj} = 25^{\circ}\text{C}$		1,50	1,90	V
	$I_F = 280\text{ A}, V_{GE} = 0\text{ V}$	$T_{vj} = 125^{\circ}\text{C}$	V_F	1,45		V
	$I_F = 280\text{ A}, V_{GE} = 0\text{ V}$	$T_{vj} = 150^{\circ}\text{C}$		1,40		V
Rückstromspitze Peak reverse recovery current	$I_F = 280\text{ A}, -di_F/dt = 3300\text{ A}/\mu\text{s} (T_{vj}=150^{\circ}\text{C})$	$T_{vj} = 25^{\circ}\text{C}$		130		A
	$V_R = 300\text{ V}$	$T_{vj} = 125^{\circ}\text{C}$	I_{RM}	190		A
		$T_{vj} = 150^{\circ}\text{C}$		200		A
Sperrverzögerungsladung Recovered charge	$I_F = 280\text{ A}, -di_F/dt = 3300\text{ A}/\mu\text{s} (T_{vj}=150^{\circ}\text{C})$	$T_{vj} = 25^{\circ}\text{C}$		9,00		μC
	$V_R = 300\text{ V}$	$T_{vj} = 125^{\circ}\text{C}$	Q_r	20,0		μC
		$T_{vj} = 150^{\circ}\text{C}$		23,0		μC
Abschaltenergie pro Puls Reverse recovery energy	$I_F = 280\text{ A}, -di_F/dt = 3300\text{ A}/\mu\text{s} (T_{vj}=150^{\circ}\text{C})$	$T_{vj} = 25^{\circ}\text{C}$		3,25		mJ
	$V_R = 300\text{ V}$	$T_{vj} = 125^{\circ}\text{C}$	E_{rec}	5,90		mJ
		$T_{vj} = 150^{\circ}\text{C}$		6,80		mJ
Wärmewiderstand, Chip bis Kühlkörper Thermal resistance, junction to heatsink	pro Diode / per diode valid with IFX pre-applied thermal interface material	R_{thJH}			0,369	K/W
Temperatur im Schaltbetrieb Temperature under switching conditions		$T_{vj\text{ op}}$	-40		150	$^{\circ}\text{C}$

Vorläufige Daten Preliminary Data

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}		4,0		kV
Material Modulgrundplatte Material of module baseplate				Cu		
Innere Isolation Internal isolation	Basisisolation (Schutzklasse 1, EN61140) basic insulation (class 1, IEC 61140)			Al ₂ O ₃		
Kriechstrecke Creepage distance	Kontakt - Kühlkörper / terminal to heatsink Kontakt - Kontakt / terminal to terminal			25,0 12,5		mm
Luftstrecke Clearance	Kontakt - Kühlkörper / terminal to heatsink Kontakt - Kontakt / terminal to terminal			11,0 7,0		mm
Vergleichszahl der Kriechwegbildung Comperative tracking index		CTI		> 200		
			min.	typ.	max.	
Modulstreuintduktivität Stray inductance module		L_{sCE}		45		nH
Lagertemperatur Storage temperature		T_{stg}	-40		125	°C
Höchstzulässige Bodenplattenbetriebstemperatur Maximum baseplate operation temperature		T_{BPmax}			125	°C
Anzugsdrehmoment f. Modulmontage Mounting torque for modul mounting	Schraube M5 - Montage gem. gültiger Applikationsschrift Screw M5 - Mounting according to valid application note	M	3,00		6,00	Nm
Anzugsdrehmoment f. elektr. Anschlüsse Terminal connection torque	Schraube M6 - Montage gem. gültiger Applikationsschrift Screw M6 - Mounting according to valid application note	M	3,0	-	6,0	Nm
Gewicht Weight		G		400		g

Lagerung und Transport von Modulen mit TIM => siehe AN2012-07
Storage and shipment of modules with TIM => see AN2012-07