



Diode-Wechselrichter / Diode-inverter

Höchstzulässige Werte / Maximum Rated Values

Periodische Spitzenspernspannung Repetitive peak reverse voltage	$T_{vj} = 25^{\circ}\text{C}$	V_{RRM}	650	V
Implementierter Durchlassstrom Implemented forward current		I_{FN}	600	A
Dauergleichstrom Continuous DC forward current		I_F	400	A
Periodischer Spitzenstrom Repetitive peak forward current	$t_P = 1 \text{ ms}$	I_{FRM}	1200	A
Grenziastintegral 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	12000 11500	A^2s A^2s

Charakteristische Werte / Characteristic Values

			min.	typ.	max.	
Durchlassspannung Forward voltage	$I_F = 400 \text{ A}, V_{GE} = 0 \text{ V}$ $I_F = 400 \text{ A}, V_{GE} = 0 \text{ V}$ $I_F = 400 \text{ A}, V_{GE} = 0 \text{ V}$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 150^{\circ}\text{C}$	V_F	1,40 1,35 1,30	1,75	V V V
Rückstromspitze Peak reverse recovery current	$I_F = 400 \text{ A}, -di_F/dt = 4600 \text{ A}/\mu\text{s} (T_{vj}=150^{\circ}\text{C})$ $V_R = 300 \text{ V}$ $V_{GE} = -15 \text{ V}$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 150^{\circ}\text{C}$	I_{RM}	190 290 320		A A A
Sperrverzögerungsladung Recovered charge	$I_F = 400 \text{ A}, -di_F/dt = 4600 \text{ A}/\mu\text{s} (T_{vj}=150^{\circ}\text{C})$ $V_R = 300 \text{ V}$ $V_{GE} = -15 \text{ V}$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 150^{\circ}\text{C}$	Q_r	14,0 31,0 36,0		μC μC μC
Abschaltenergie pro Puls Reverse recovery energy	$I_F = 400 \text{ A}, -di_F/dt = 4600 \text{ A}/\mu\text{s} (T_{vj}=150^{\circ}\text{C})$ $V_R = 300 \text{ V}$ $V_{GE} = -15 \text{ V}$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 150^{\circ}\text{C}$	E_{rec}	3,50 7,00 8,50		mJ mJ mJ
Wärmewiderstand, Chip bis Gehäuse Thermal resistance, junction to cooling fluid	pro Diode / per diode cooling fluid = 50% water/50% ethylenglycol; $\Delta V/\Delta t = 10,0 \text{ dm}^3/\text{min}$		R_{thJF}		0,17	K/W

NTC-Widerstand / NTC-thermistor

Charakteristische Werte / Characteristic Values

			min.	typ.	max.	
Nennwiderstand Rated resistance	$T_C = 25^{\circ}\text{C}$	R_{25}		5,00		k Ω
Abweichung von R100 Deviation of R100	$T_C = 100^{\circ}\text{C}, R_{100} = 493 \Omega$	$\Delta R/R$	-5		5	%
Verlustleistung Power dissipation	$T_C = 25^{\circ}\text{C}$	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.

prepared by: WJ	date of publication: 2012-03-05
approved by: MM	revision: 3.0



Modul / Module

Isolations-Prüfspannung Isolation test voltage	RMS, f = 50 Hz, t = 1 min.	V _{ISOL}	2,5		kV
Material Modulgrundplatte Material of module baseplate			Cu		
Innere Isolation Internal isolation			Al ₂ O ₃		
Kriechstrecke Creepage distance	Kontakt - Kühlkörper / terminal to heatsink Kontakt - Kontakt / terminal to terminal		7,0 5,5		mm
Luftstrecke Clearance	Kontakt - Kühlkörper / terminal to heatsink Kontakt - Kontakt / terminal to terminal		7,0 5,0		mm
Vergleichszahl der Kriechwegbildung Comperative tracking index		CTI	> 200		
			min.	typ.	max.
Druckabfall im Kühlkreislauf* Pressure drop in cooling circuit*	$\Delta V/\Delta t = 10,0 \text{ dm}^3/\text{min}$; T _F = 25°C cooling fluid = 50% water/50% ethylenglycol	Δp		100	mbar
Höchstzulässiger Druck im Kühlkreislauf Maximum pressure in cooling circuit		p		2,5	bar
Modulstreuintuktivität Stray inductance module		L _{sCE}		14	nH
Modulleitungswiderstand, Anschlüsse - Chip Module lead resistance, terminals - chip	T _F = 25°C, pro Schalter / per switch	R _{CC+EE'}		0,80	mΩ
Höchstzulässige Sperrschichttemperatur Maximum junction temperature	Wechselrichter, Brems-Chopper / Inverter, Brake-Chopper	T _{vj max}			175 °C
Temperatur im Schaltbetrieb Temperature under switching conditions	Wechselrichter, Brems-Chopper / Inverter, Brake-Chopper	T _{vj op}	-40		150 °C
Lagertemperatur Storage temperature		T _{stg}	-40		125 °C
Anzugsdrehmoment f. Modulmontage Mounting torque for modul mounting	Schraube M6 - Montage gem. gültiger Applikation Note screw M6 - mounting according to valid application note	M	3,00	-	6,00 Nm
Anzugsdrehmoment f. elektr. Anschlüsse Terminal connection torque	Schraube M6 - Montage gem. gültiger Applikation Note screw M6 - mounting according to valid application note	M	2,5	-	5,0 Nm
Gewicht Weight		G		1250	g

* Kühleraufbau gemäß gültiger Application Note.
* Cooler setup according to the valid application note.

prepared by: WJ	date of publication: 2012-03-05
approved by: MM	revision: 3.0