Dioden-Modul mit Chopper-IGBT
Diode Module with Chopper-IGBT **DD B6U 84 N 12...16 RR**

Elektrische Eigenschaften / Electrical properties

Vorläufige Daten
Preliminary data

Höchstzulässige Werte / Maximum rated values

Netz-Diode / Rectifier diode				
Periodische Spitzensperrspannung repetitive peak reverse voltage	T_{vj} = - 40°C...$T_{vj\,max}$	V_{RRM}	1200, 1400 1600	V
Durchlaßstrom-Grenzeffektivwert (pro Element) RMS forward current (per chip)		I_{FRMSM}	60	A
Ausgangsstrom output current	T_C = 100°C T_C = 84°C	I_d	85 104	A A
Stoßstrom-Grenzwert surge forward current	T_{vj} = 25°C, t_p = 10ms T_{vj} = $T_{vj\,max}$, t_p = 10ms	I_{FSM}	650 550	A A
Grenzlastintegral I²t-value	T_{vj} = 25°C, t_p = 10ms T_{vj} = $T_{vj\,max}$, t_p = 10ms	I²t	2100 1500	A²s A²s
IGBT				
Kollektor-Emitter-Sperrspannung collector-emitter voltage		V_{CES}	1200	V
Kollektor-Dauergleichstrom DC-collector current		I_C	50	A
Periodischer Kollektor-Spitzenstrom repetitive peak collektor current	t_p = 1ms	I_{CRM}	100	A
Gesamt-Verlustleistung total power dissipation	T_C = 25°C	P_{tot}	350	W
Gate-Emitter Spitzenspannung gate-emitter peak voltage		V_{GE}	± 20	V
Schnelle Diode / Fast diode				
Dauergleichstrom DC forward current		I_F	25	A
Periodischer Spitzenstrom repetitive peak forward current	t_p = 1ms	I_{FRM}	50	A
Modul				
Isolations-Prüfspannung insulation test voltage	RMS, f = 50Hz, t = 1min	V_{ISOL}	2,5	kV

Charakteristische Werte / Characteristic values

			min.	typ.	max.	
Netz-Diode / Rectifier diode						
Durchlaßspannung forward voltage	T_{vj} = $T_{vj\,max}$, i_F = 100A	v_F			1,55	V
Schleusenspannung threshold voltage	T_{vj} = $T_{vj\,max}$	$V_{(TO)}$			0,75	V
Ersatzwiderstand forward slope resistance	T_{vj} = $T_{vj\,max}$	r_T			5,5	mΩ
Sperrstrom reverse current	T_{vj} = $T_{vj\,max}$, v_R = V_{RRM}	i_R			5	mA
IGBT						
Kollektor-Emitter Sättigungsspannung collector-emitter saturation voltage	T_{vj} = 25°C, i_C = 50A, v_{GE} = 20V T_{vj} = 125°C, i_C = 50A, v_{GE} = 20V	$v_{CE\,sat}$		2,5 3,1	3,2	V
Gate-Emitter-Schwellspannung gate-emitter threshold voltage	T_{vj} = 25°C, i_C = 2mA, v_{GE} = v_{CE}	$v_{GE(TO)}$	4,5	5,5	6,5	V

Vorläufige Daten
Preliminary data

IGBT			min.	typ.	max.	
Eingangskapazität input capacitance	T_{vj} = 25°C, f_0 = 1MHz, v_{CE} = 25V, v_{GE} = 0V	C_{ies}		3,3		nF
Kollektor-Emitter Reststrom collector-emitter cut-off current	T_{vj} = 25°C, v_{CE} = 1200V, v_{GE} = 0V T_{vj} = 125°C, v_{CE} = 1200V, v_{GE} = 0V	i_{CES}		0,8 4,0	1	mA
Gate-Emitter Reststrom gate leakage current	T_{vj} = 25°C, v_{CE} = 0V, v_{GE} = 20V	i_{GES}			500	nA
Emitter-Gate Reststrom gate-leakage current	T_{vj} = 25°C, v_{CE} = 0V, v_{EG} = 20V	i_{EGS}			500	nA
Schnelle Diode / Fast diode						
Durchlaßspannung forward voltage	T_{vj} = 25°C, i_F = 25A T_{vj} = 125°C, i_F = 25A	v_F		2,3 1,8	2,9	V
Sperrverzögerungsladung recovered charge	i_{FM} = 25A, -di/dt = 800A/µs, v_R = 600V T_{vj} = 25°C T_{vj} = 125°C	Q_r		 2,3 6,0		 µAs µAs

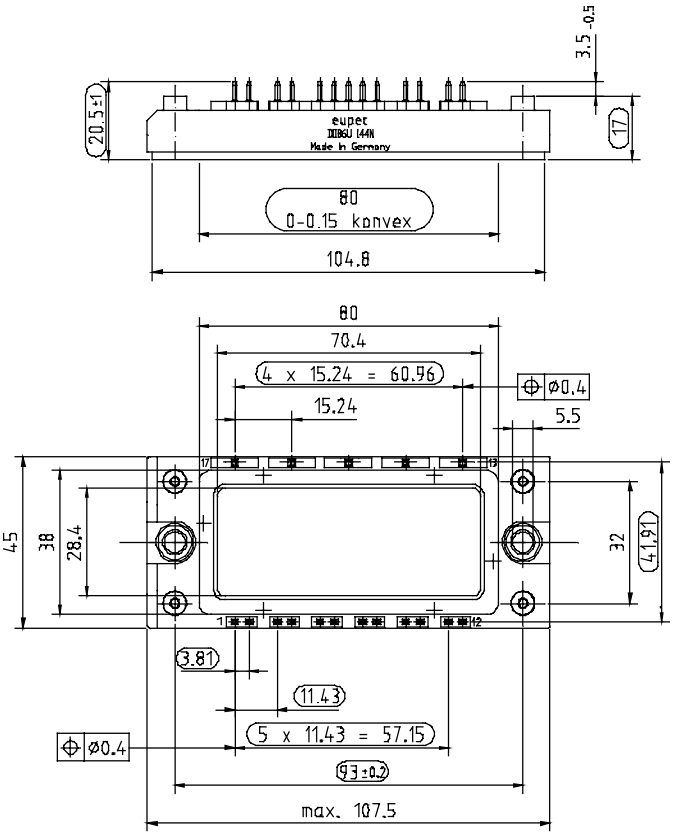
Thermische Eigenschaften / Thermal properties

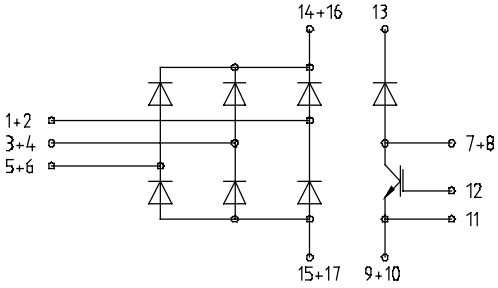
Innerer Wärmewiderstand thermal resistance, junction to case	Netz-Diode / Rectifier diode, Θ = 120°rect Transistor / Transistor, DC Schnelle Diode / Fast diode, DC	R_{thJC}	max. 1,45 max. 0,38 max. 1,00	°C/W °C/W °C/W
Übergangs-Wärmewiderstand thermal resistance, case to heatsink	Netz-Diode / Rectifier diode Transistor / Transistor Schnelle Diode / Fast diode	R_{thCK}	max. 0,25 max. 0,24 max. 0,30	°C/W °C/W °C/W
Höchstzulässige Sperrschichttemperatur max. junction temperature		$T_{vj\ max}$	150	°C
Betriebstemperatur operating temperature		$T_{c\ op}$	- 40...+150	°C
Lagertemperatur storage temperature		T_{stg}	- 40...+150	°C

Mechanische Eigenschaften / Mechanical properties

Gehäuse, siehe Anlage case, see appendix			Seite 3 page 3	
Innere Isolation internal insulation			Al_2O_3	
Anzugsdrehmoment für mechanische Befestigung mounting torque	Toleranz / tolerance ±15%	M1	4	Nm
Gewicht weight		G	typ. 185	g
Kriechstrecke creepage distance			12,5	mm

Kühlkörper / heatsinks :





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