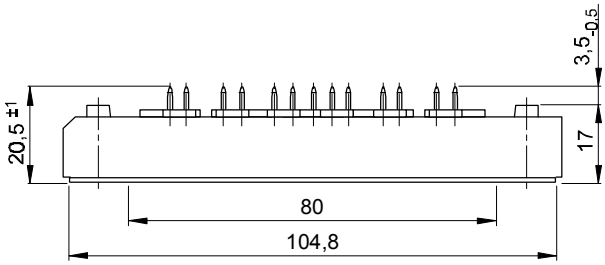
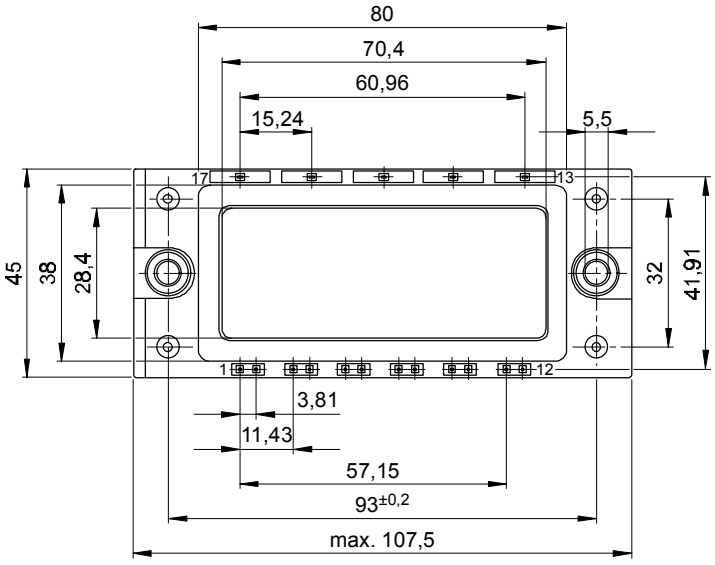
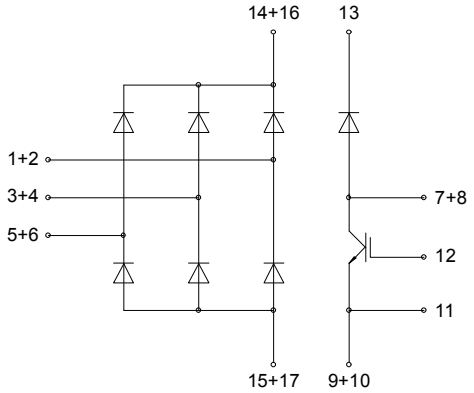
European Power-
Semiconductor and
Electronics Company

Marketing Information
DD B6U 100 N 12...16 RR







17.11.1997

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 ###	V
Durchlaßstrom-Grenzeffektivwert (pro Element) RMS forward current (per chip)		I_{FRMSM}	60	A
Ausgangsstrom output current	T_C = 100°C T_C = 97°C	I_d	100 104	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

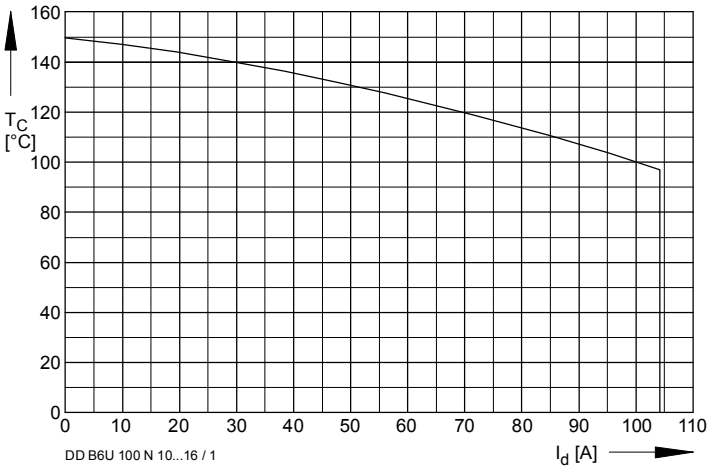


Bild / Fig. 1
Höchstzulässige Gehäusetemperatur / Maximum allowaböe case temperatur
$T_C = f(I_d)$

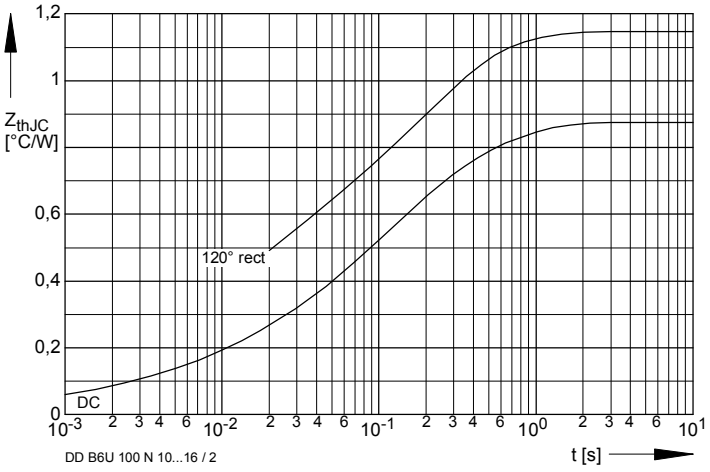


Bild / Fig. 2
Transienter innerer Wärmewiderstand je Zweig / Transient thermal impedance per arm
$Z_{thJC} = f(t)$
Parameter: Stromflußwinkel / current conduction angle θ

Analytische Elemente des transienten Wärmewiderstandes Z_{thJC} pro Zweig für DC
Analytical elements of transient thermal impedance Z_{thJC} per arm for DC

Pos. n	1	2	3	4
R_{thn}[°C/W]	0,47800	0,28200	0,05300	0,06500
τ_n[s]	0,30200	0,03780	0,00400	0,00109

Analytische Funktion / Analytical function:

$$Z_{thJC} = \sum_{n=1}^{n_{max}} R_{thn} (1\text{-}e^{-\frac{t}{\tau_n}})$$