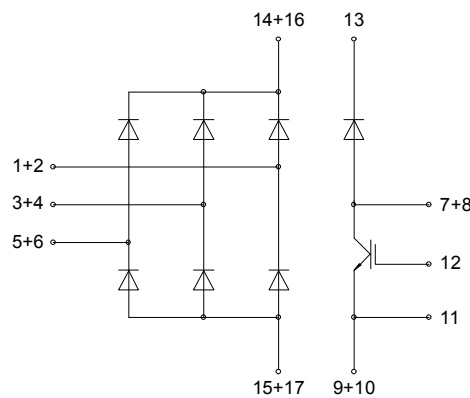
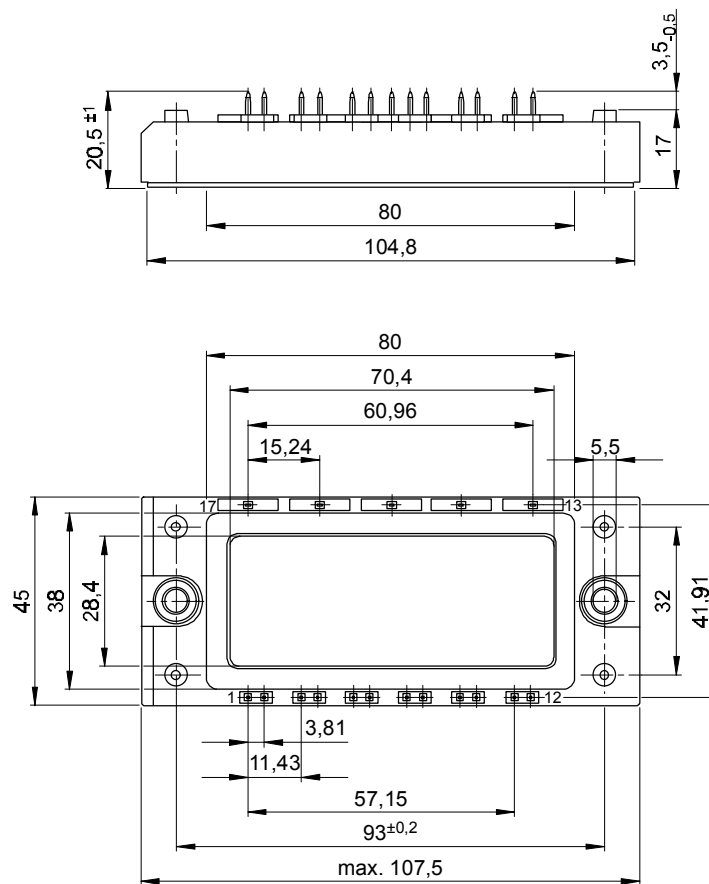




European Power-Semiconductor and Electronics Company

# Marketing Information

## DD B6U 100 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	$T_{vj} = -40^{\circ}\text{C} \dots T_{vj\text{ max}}$	$V_{RRM}$	1200, 1400 ###	V
Durchlaßstrom-Grenzeffektivwert (pro Element) RMS forward current (per chip)		$I_{FRMSM}$	60	A
Ausgangsstrom output current	$T_C = 100^{\circ}\text{C}$ $T_C = 97^{\circ}\text{C}$	$I_d$	100 104	A A
Stoßstrom-Grenzwert surge forward current	$T_{vj} = 25^{\circ}\text{C}, t_p = 10\text{ms}$ $T_{vj} = T_{vj\text{ max}}, t_p = 10\text{ms}$	$I_{FSM}$	650 550	A A
Grenzlastintegral $I^2t$ -value	$T_{vj} = 25^{\circ}\text{C}, t_p = 10\text{ms}$ $T_{vj} = T_{vj\text{ max}}, t_p = 10\text{ms}$	$I^2t$	2100 1500	$\text{A}^2\text{s}$ $\text{A}^2\text{s}$
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 collector current	$t_p = 1\text{ms}$	$I_{CRM}$	100	A
Gesamt-Verlustleistung total power dissipation	$T_C = 25^{\circ}\text{C}$	$P_{\text{tot}}$	350	W
Gate-Emitter Spitzenspannung gate-emitter peak voltage		$V_{GE}$	$\pm 20$	V
Schnelle Diode / Fast diode				
Dauergleichstrom DC forward current		$I_F$	25	A
Periodischer Spitzenstrom repetitive peak forward current	$t_p = 1\text{ms}$	$I_{FRM}$	50	A
Modul				
Isolations-Prüfspannung insulation test voltage	RMS, $f = 50\text{Hz}, t = 1\text{min}$	$V_{\text{ISOL}}$	2,5	kV

Charakteristische Werte / Characteristic values

Netz-Diode / Rectifier diode			min.	typ.	max.	
Durchlaßspannung forward voltage	$T_{vj} = T_{vj\text{ max}}, I_F = 100\text{A}$	$V_F$			1,55	V
Schleusenspannung threshold voltage	$T_{vj} = T_{vj\text{ max}}$	$V_{(TO)}$			0,75	V
Ersatzwiderstand forward slope resistance	$T_{vj} = T_{vj\text{ max}}$	$r_T$			5,5	$\text{m}\Omega$
Sperrstrom reverse current	$T_{vj} = T_{vj\text{ max}}, V_R = V_{RRM}$	$i_R$			5	mA
IGBT						
Kollektor-Emitter Sättigungsspannung collector-emitter saturation voltage	$T_{vj} = 25^{\circ}\text{C}, I_C = 50\text{A}, V_{GE} = 20\text{V}$ $T_{vj} = 125^{\circ}\text{C}, I_C = 50\text{A}, V_{GE} = 20\text{V}$	$V_{CE\text{ sat}}$		2,5 3,1	3,2	V
Gate-Emitter-Schwelspannung gate-emitter threshold voltage	$T_{vj} = 25^{\circ}\text{C}, I_C = 2\text{mA}, V_{GE} = V_{CE}$	$V_{GE(TO)}$	4,5	5,5	6,5	V

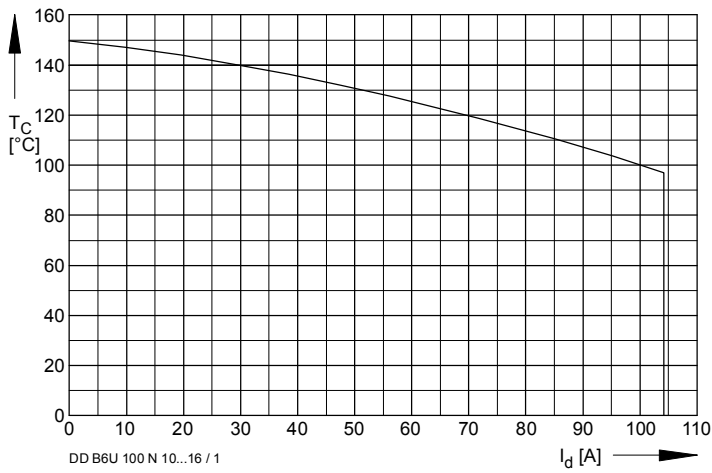


Bild / Fig. 1  
 Höchstzulässige Gehäusetemperatur / Maximum allowable case temperature  
 $T_C = f(I_d)$

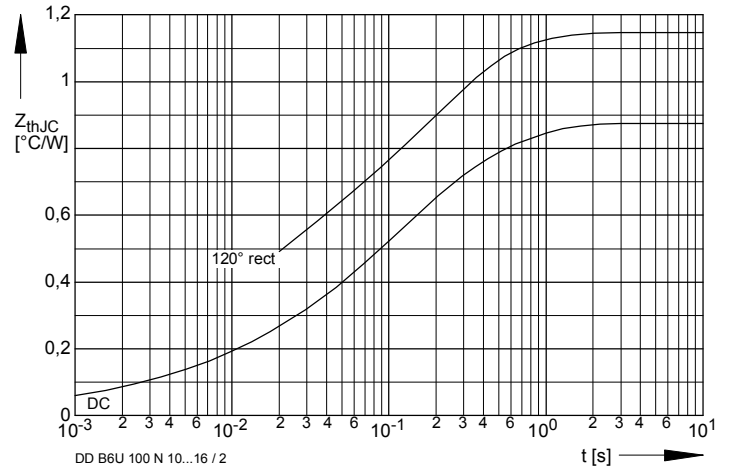


Bild / Fig. 2  
 Transienter innerer Wärmewiderstand je Zweig / Transient thermal impedance per arm  
 $Z_{thJC} = f(t)$   
 Parameter: Stromflußwinkel / current conduction angle  $\theta$

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
$\tau_n$ [s]	0,30200	0,03780	0,00400	0,00109

Analytische Funktion / Analytical function:

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

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