

Technische Information / Technical Information

Dioden-Module
Diode-Modules

DD 400 S 65 K1

eupec



Höchstzulässige Werte / Maximum rated values

Periodische Spitzensperrspannung repetitive peak reverse voltage	$T_{vj}=125^{\circ}\text{C}$ $T_{vj}=25^{\circ}\text{C}$ $T_{vj}=-40^{\circ}\text{C}$	V_{CES}	6500 6300 5800	V
Dauergleichstrom DC forward current		I_F	400	A
Periodischer Spitzenstrom repetitive peak forw. current	$t_p = 1 \text{ ms}$	I_{FRM}	800	A
Grenzlastintegral der Diode I^2t - value, Diode	$V_R = 0\text{V}, t_p = 10\text{ms}, T_{vj} = 125^{\circ}\text{C}$	I^2t	87	$\text{k A}^2\text{s}$
Isolations-Prüfspannung insulation test voltage	RMS, $f = 50 \text{ Hz}, t = 1 \text{ min.}$	V_{ISOL}	10,2	kV
Teilentladungs Aussetzspannung partial discharge extinction voltage	RMS, $f = 50 \text{ Hz}, Q_{PD} \text{ typ. } 10\text{pC (acc. To IEC 1287)}$	V_{ISOL}	5,1	kV

Charakteristische Werte / Characteristic values

			min.	typ.	max.	
Durchlaßspannung forward voltage	$I_F = 400\text{A}, T_{vj} = 25^{\circ}\text{C}$	V_F	3,0	3,8	4,6	V
	$I_F = 400\text{A}, T_{vj} = 125^{\circ}\text{C}$			3,9	4,7	V
Sperrstrom reverse current	$V_R = 6300\text{V}, T_{vj} = 25^{\circ}\text{C}$	I_R	-	0,15	-	mA
	$V_R = 6500\text{V}, T_{vj} = 125^{\circ}\text{C}$		-	15	-	mA
Rückstromspitze peak reverse recovery current	$I_F = 400\text{A}, -di_F/dt = 1400\text{A}/\mu\text{s}$	I_{RM}	-	540	-	A
	$V_R = 3600\text{V}, T_{vj} = 25^{\circ}\text{C}$					
	$V_R = 3600\text{V}, T_{vj} = 125^{\circ}\text{C}$			660		A
Sperrverzögerungsladung recovered charge	$I_F = 400\text{A}, -di_F/dt = 1400\text{A}/\mu\text{s}$	Q_r	-	360	-	μC
	$V_R = 3600\text{V}, T_{vj} = 25^{\circ}\text{C}$					
	$V_R = 3600\text{V}, T_{vj} = 125^{\circ}\text{C}$			700		μC
Abschaltenergie pro Puls reverse recovery energy	$I_F = 400\text{A}, -di_F/dt = 1400\text{A}/\mu\text{s}$	E_{rec}	-	440	-	mJ
	$V_R = 3600\text{V}, T_{vj} = 25^{\circ}\text{C}$					
	$V_R = 3600\text{V}, T_{vj} = 125^{\circ}\text{C}$			1050		mJ
Modulinduktivität stray inductance module	pro Zweig / per arm	L_{SCE}	-	25	-	nH
Modulleitungswiderstand, Anschlüsse - Chip module lead resistance, terminals - chip	pro Zweig / per arm	R_{CC+EE}	-	0,37	-	m Ω

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Thermische Eigenschaften / Thermal properties

			min.	typ.	max.	
Innerer Wärmewiderstand thermal resistance, junction to case	Diode/Diode, DC	R_{thJC}	-	-	0,032	K/W
Übergangs-Wärmewiderstand thermal resistance, case to heatsink	pro Modul / per Module $\lambda_{Paste} \leq 1 \text{ W/m}^2\text{K} / \lambda_{grease} \leq 1 \text{ W/m}^2\text{K}$	R_{thCK}	-	0,008	-	K/W
Höchstzulässige Sperrschichttemperatur maximum junction temperature		$T_{vj, max}$	-	-	150	°C
Betriebstemperatur Sperrschicht junction operation temperature	Schaltvorgänge Diode(SOA) switching operation Diode(SOA)	$T_{vj, op}$	-40	-	125	°C
Lagertemperatur storage temperature		T_{stg}	-40	-	125	°C

Mechanische Eigenschaften / Mechanical properties

Gehäuse, siehe Anlage case, see appendix						
Innere Isolation internal insulation				AIN		
Kriechstrecke creepage distance				56		mm
Luftstrecke clearance				26		mm
CTI comperative tracking index				>600		
Anzugsdrehmoment f. mech. Befestigung mounting torque	Schraube /screw M6	M		5		Nm
Anzugsdrehmoment f. elektr. Anschlüsse terminal connection torque	Anschlüsse / terminals M8	M		8 - 10		Nm
Gewicht weight		G		1000		g

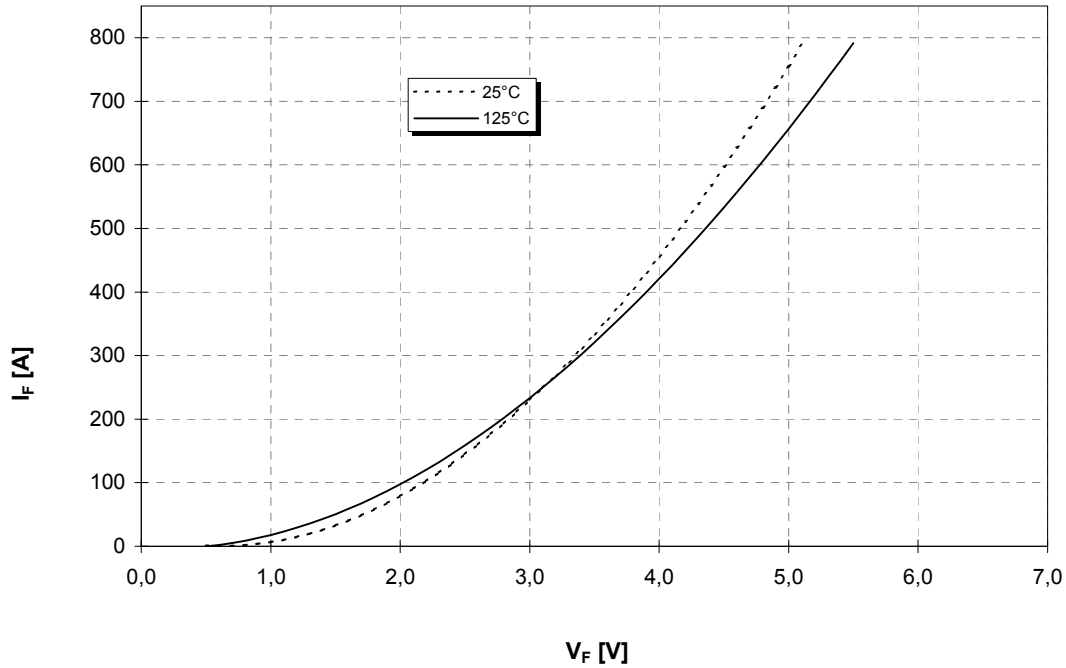
Mit dieser technischen Information werden Halbleiterbauelemente spezifiziert, jedoch keine Eigenschaften zugesichert.
Sie gilt in Verbindung mit den zugehörigen Technischen Erläuterungen.

This technical information specifies semiconductor devices but promises no characteristics. It is
valid in combination with the belonging technical notes.



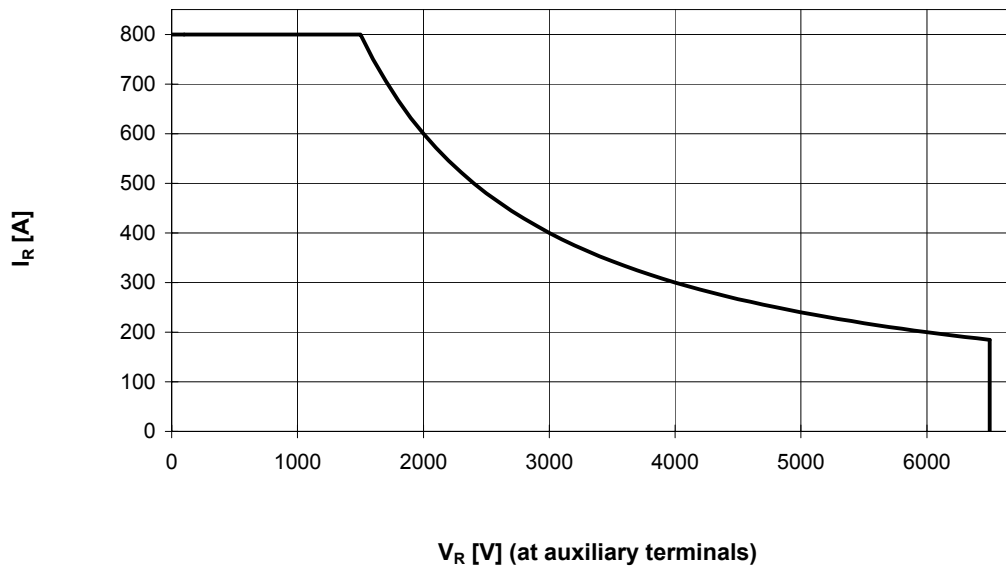
Durchlaßkennlinie der Inversdiode (typisch)
Forward characteristic of inverse diode (typical)

$$I_F = f(V_F)$$



Sicherer Arbeitsbereich Diode (SOA)
safe operation area Diode (SOA)

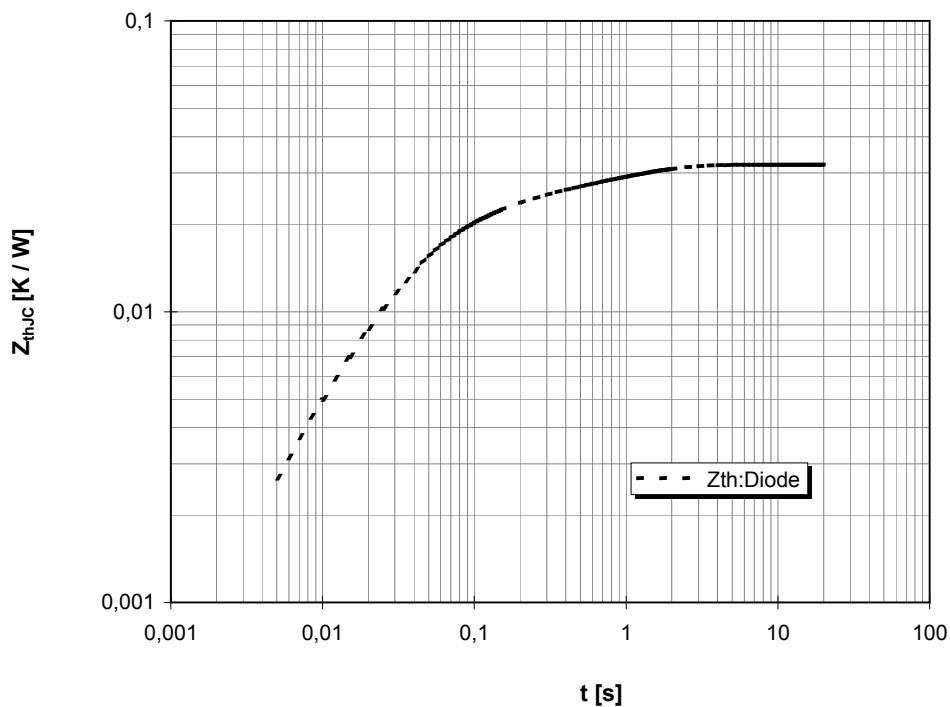
$$P_{max} = 1200kW ; T_{vj} = 125^\circ C$$





Transienter Wärmewiderstand
Transient thermal impedance

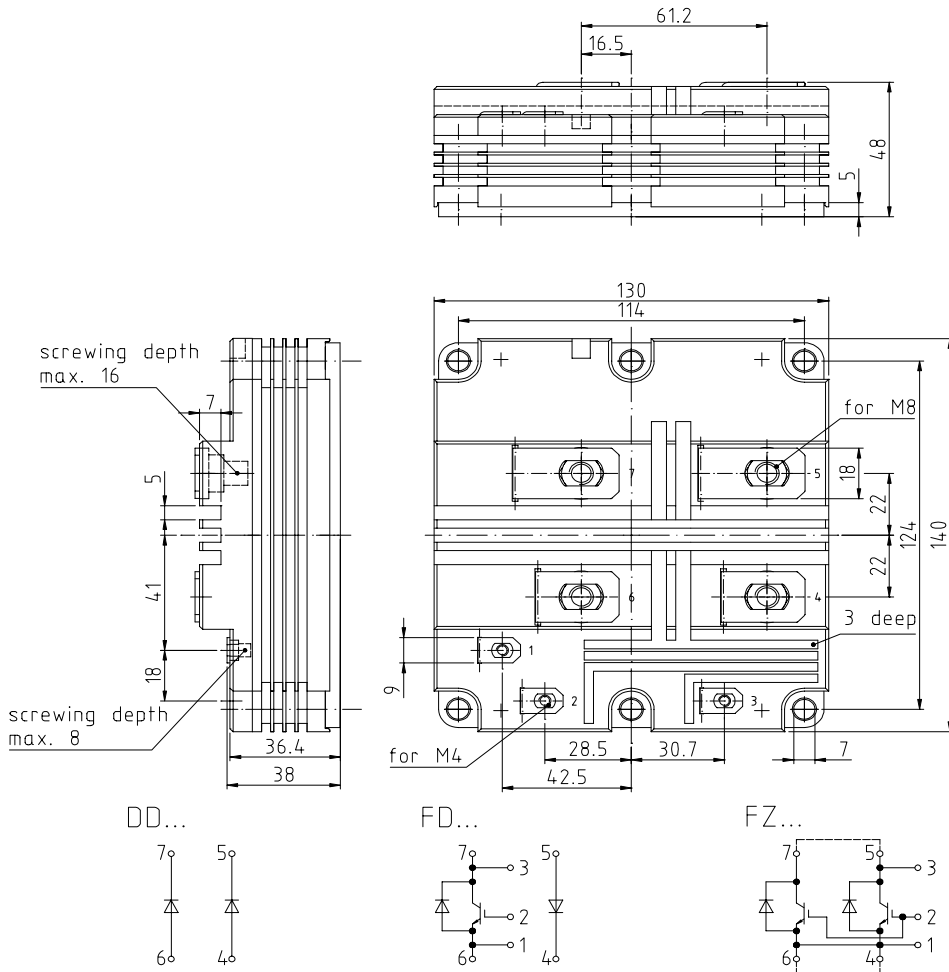
$$Z_{thJC} = f(t)$$



i		1	2	3	4
r_i [K/kW]	: Diode	14,40	8,00	1,92	7,68
τ_i [s]	: Diode	0,030	0,10	0,30	1,0



Äußere Abmessungen /
external dimensions



Anschlüsse / Terminals

1	--
2	--
3	--
4,6	Anode / anode
5,7	Kathode / cathode

Terms & Conditions of Usage

Attention

The present product data is exclusively subscribed to technically experienced staff. This Data Sheet is describing the specification of the products for which a warranty is granted exclusively pursuant the terms and conditions of the supply agreement. There will be no guarantee of any kind for the product and its specifications. Changes to the Data Sheet are reserved.

You and your technical departments will have to evaluate the suitability of the product for the intended application and the completeness of the product data with respect to such application. Should you require product information in excess of the data given in the Data Sheet, please contact your local Sales Office via "www.eupec.com / sales & contact".

Warning

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