Elektrische Eigenschften / Electrical properties

Höchstzulässige Werte / Maximum rated values

Periodische Spitzensperrspannung repetitive peak forward reverse voltage	T_{vj} = - 40°C...$T_{vj\,max}$	V_{RRM}	1600 1800 2000	V V V
Stoßspitzensperrspannung non-repetitive peak reverse voltage	T_{vj} = + 25°C...$T_{vj\,max}$	V_{RSM}	1700 1900 2100	V V V
Durchlaßstrom-Grenzeffektivwert RMS forward current		I_{FRMSM}	740	A
Dauergrenzstrom mean forward current	T_C =100°C T_C =95°C	I_{FAVM}	440 470	A A
Stoßstrom-Grenzwert surge foward current	T_{vj} = 25°C, tp = 10 ms T_{vj} = $T_{vj\,max}$, tp = 10 ms	I_{FSM}	6400 5300	A A
Grenzlastintegral I²t-value	T_{vj} = 25°C, tp = 10ms T_{vj} = $T_{vj\,max}$, tp = 10ms	I²t	205000 140500	A²s A²s

Charakteristische Werte / Characteristic values

Durchlaßspannung forward voltage	T_{vj} = $T_{vj\,max}$, i_F = 1400 A	v_F	max. 2,3		V
Schleusenspannung threshold voltage	T_{vj} = $T_{vj\,max}$	$V_{(TO)}$	1,14		V
Ersatzwiderstand forward slope resistance	T_{vj} = $T_{vj\,max}$	r_T	0,725		mΩ
Spitzenwert der Durchlaßverzögerungsspannung peak value of forward recovery voltage	IEC 747-2 T_{vj} = $T_{vj\,max}$ di_F/dt=500A/µs, v_R=0V	V_{FRM}	53		V 1)
Durchlaßverzögerungszeit forward recovery time	IEC 747-2, Methode / method II T_{vj} = $T_{vj\,max}$, i_{FM}=di_F/dt*t_{fr} di_F/dt=500A/µs, v_R=0V	t_{fr}	1,9		µs 1)
Sperrstrom reverse current	T_{vj} = 25°C, v_R=V_{RRM} T_{vj} = $T_{vj\,max}$, v_R = V_{RRM}	i_R	max. 10 max. 150		mA mA
Rückstromspitze peak reverse recovery current	DIN IEC 747-2, T_{vj}=$T_{vj\,max}$ i_{FM} =760A,-di_F/dt=500A/µs v_R<=0,5 V_{RRM}, v_{RM}=0,8 V_{RRM}	I_{RM}	720		A 1)
Sperrverzögerungsladung recovered charge	DIN IEC 747-2, T_{vj}=$T_{vj\,max}$ i_{FM} =760A,-di_F/dt=500A/µs v_R<=0,5 V_{RRM}, v_{RM}=0,8 V_{RRM}	Q_r	1130		µAs 1)
Sperrverzögerungszeit reverse recovered time	DIN IEC 747-2, T_{vj}=$T_{vj\,max}$ i_{FM} =760A,-di_F/dt=500A/µs v_R<=0,5 V_{RRM}, v_{RM}=0,8 V_{RRM}	t_{rr}	2,8		µs 1)
Sanftheit Softness	T_{vj} = $T_{vj\,max}$ i_{FM} =760A,-di_F/dt=500A/µs v_R<=0,5 V_{RRM}, v_{RM}=0,8 V_{RRM}	SR	0,0012		µs/A 2)

1) Richtwert für obere Streubereichsgrenze / Upper limit of scatter range (standard value)
2) Richtwert für untere Streubereichsgrenze / Lower limit of scatter range (standard value)

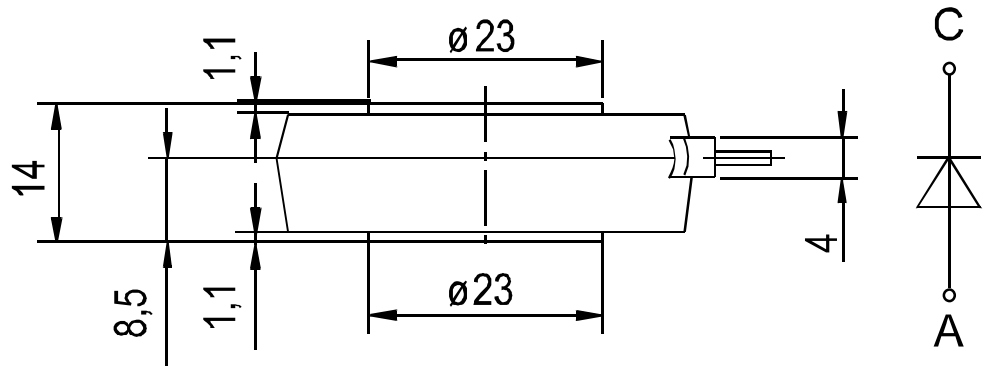
Thermische Eigenschaften / Thermal properties

Innerer Wärmewiderstand thermal resitance, junction to case	Kühlfläche / cooling surface beidseitig / two-sided, Θ =180°sin beidseitig / two-sided, DC Anode / anode, Θ =180°sin Anode / anode, DC Kathode / cathode, Θ =180°sin Kathode / cathode, DC	R_{thJC}	 max. 0,059 max. 0,054 max. 0,100 max. 0,095 max. 0,130 max. 0,125	 °C/W °C/W °C/W °C/W °C/W °C/W
Übergangs- Wärmewiderstand thermal resitance, case to heatsink	Kühlfläche / cooling surface beidseitig / two-sided einseitig / single-sided	R_{thCK}	 max. 0,012 max. 0,024	 °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	
Si-Element mit Druckkontakt Si-pellet with pressure contact	Durchmesser/diameter 25mm			
Anpreßkraft clamping force		F	4,8...11,4	kN
Gewicht weight		G	typ. 75	g
Kriechstrecke creepage distance			25	mm
Feuchteklasse humidity classification	DIN 40040		C	
Schwingfestigkeit vibration resistance	f = 50Hz		50	m/s^2

Kühlkörper / heatsinks: K0,12F ; K0,17F ; K0,22F ; K0,36S ; K0,65S


ø23
1,1
14
8,5
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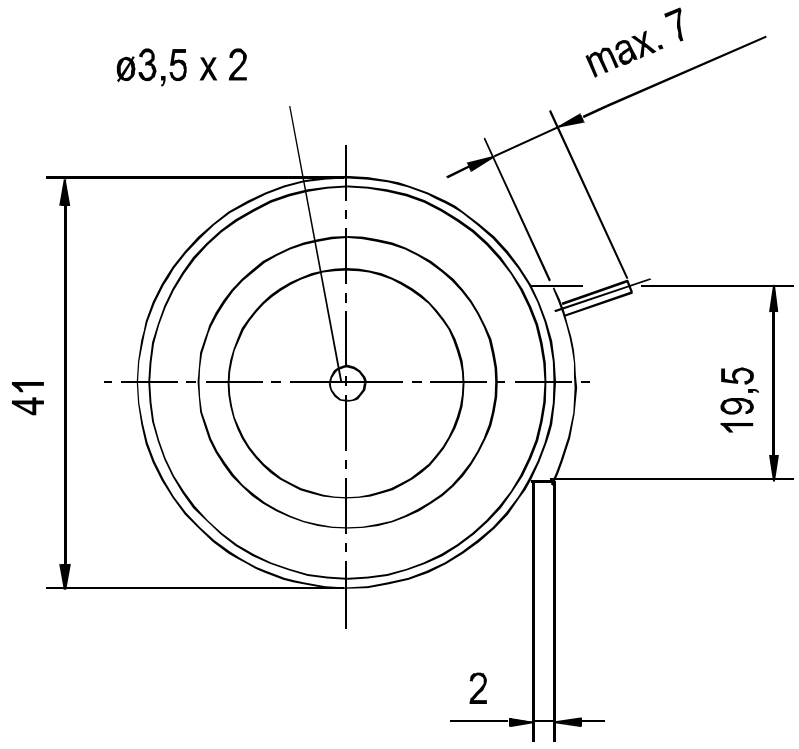
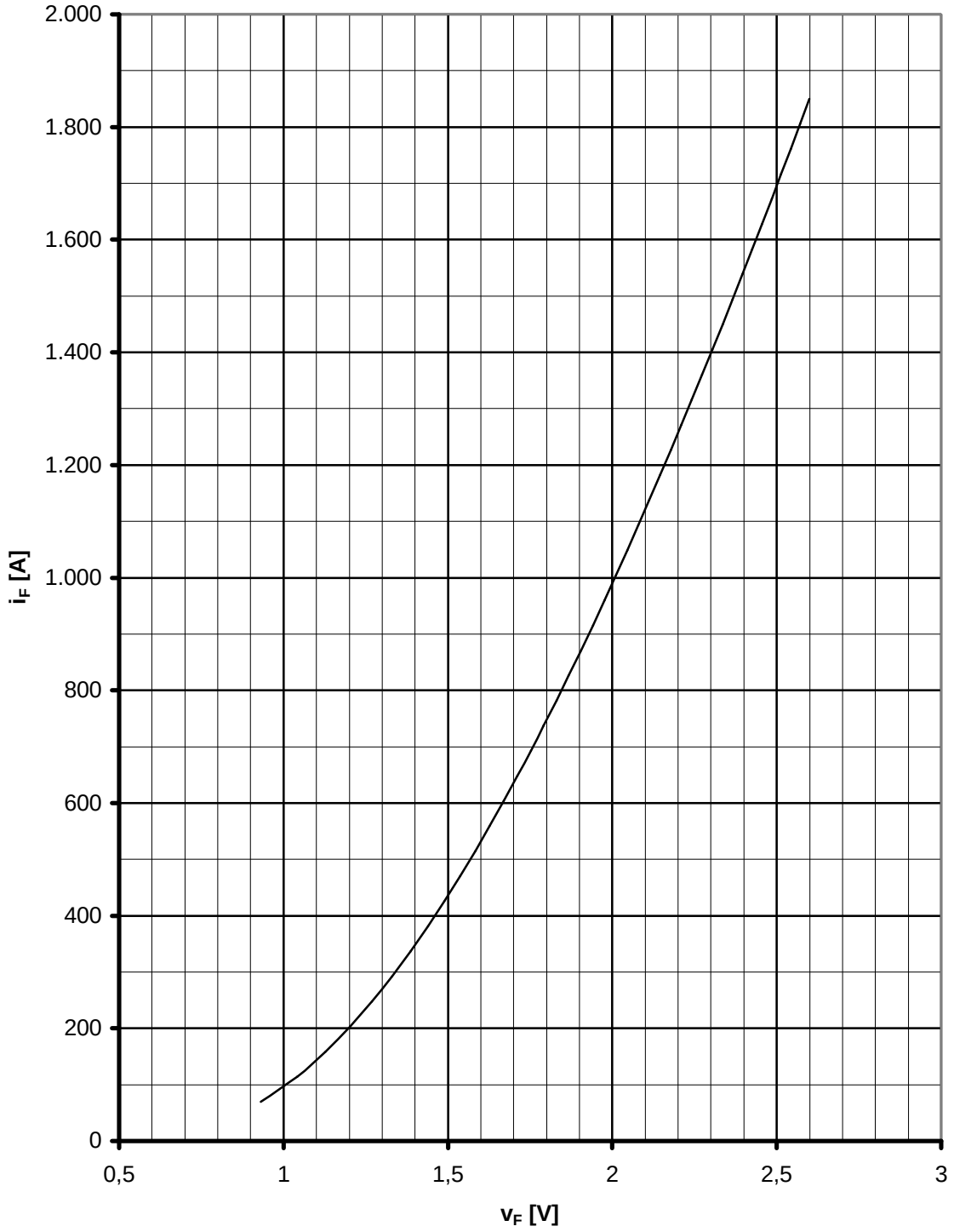

ø3,5 x 2
max. 7
41
19,5
2

Kühlung cooling	Analytische Elemente des transienten Wärmewiderstandes Z_{thJC} für DC Analytical ementes of transient thermal impedance Z_{thJC} for DC							
	Pos.n	1	2	3	4	5	6	7
beidseitig	R_{thn} [°C/W]	0,000136	0,004734	0,00523	0,0229	0,021		
two-sided	τ_n [s]	0,000105	0,00137	0,00979	0,105	0,531		
anodenseitig	R_{thn} [°C/W]	0,000136	0,004744	0,00544	0,0272	0,00954	0,04794	
anode-sided	τ_n [s]	0,000105	0,00138	0,0103	0,117	2,43	3,29	
kathodenseitig	R_{thn} [°C/W]	0,000136	0,004744	0,00496	0,02426	0,0409	0,05	
cathode-sided	τ_n [s]	0,000105	0,00138	0,00956	0,105	1,77	3,11	

Analytische Funktion / analytical function : $Z_{thJC} = \sum_{n=1}^{n_{max}} R_{thn} (1 - EXP (- t / \tau_n))$



Grenzdurchlaßkennlinie / Limiting 0n-state characteristic $i_F=f(v_F)$

$T_{vj} = T_{vj\ max}$

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