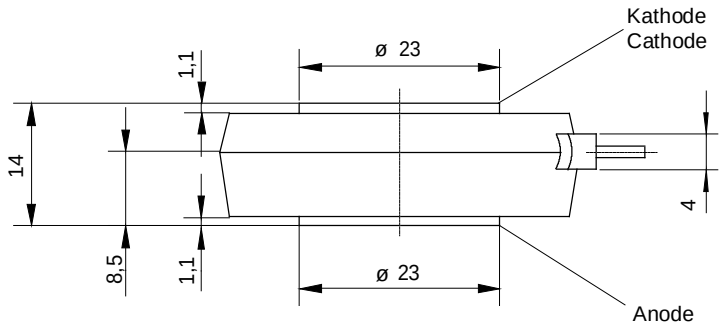
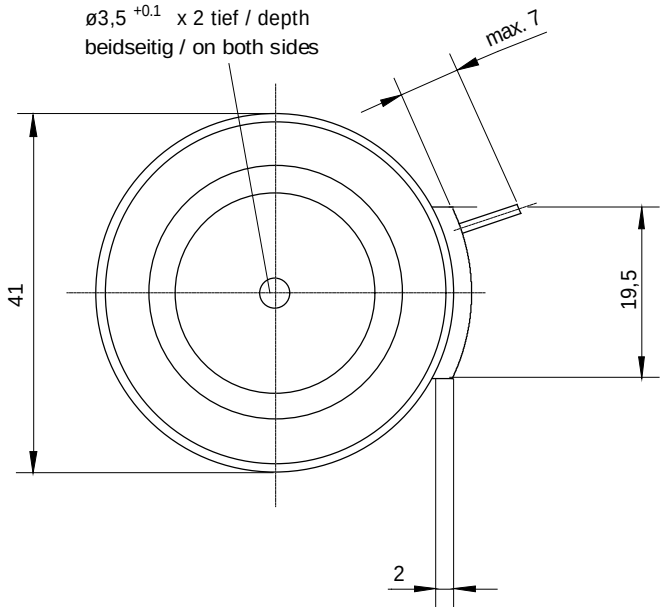
European Power-
Semiconductor and
Electronics Company
GmbH + Co. KG

Leistungsgleichrichterdioden
Power Rectifier Diodes
D 758 N



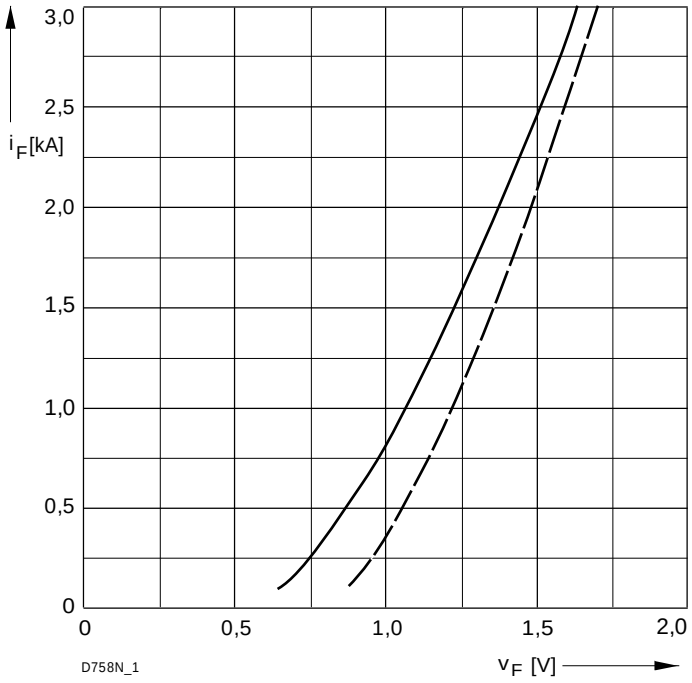


VWK July 1996

D 758 N

Elektrische Eigenschaften	**Electrical properties**					
Höchstzulässige Werte	**Maximum rated values**					
Periodische Spitzensperrspannung	repetitive peak reverse voltage	t_{vj} = -40°C... $t_{vj\ max}$	V_{RRM}		200, 400	V
					600, 800 *	V
Stoßspitzensperrspannung	non-repetitive peak reverse voltage	t_{vj} = +25°C... $t_{vj\ max}$	$V_{RSM} = V_{RRM}$		+ 50	V
Durchlaßstrom-Grenzeffektivwert	RMS forward current		I_{FRMSM}		1195	A
Dauergrenzstrom	mean forward current	t_c = 115 °C	I_{FAVM}		760	A [1])
		t_c = 130 °C			630	A
Stoßstrom-Grenzwert	surge forward current	t_{vj} = 25°C, t_p = 10 ms	I_{FSM}		10,3	kA
		$t_{vj} = t_{vj\ max}$, t_p = 10 ms			8,8	kA
Grenzlastintegral	I^2t-value	t_{vj} = 25°C, t_p = 10 ms	I^2t		530,45	kA^2s
		$t_{vj} = t_{vj\ max}$, t_p = 10 ms			387,2	kA^2s
Charakteristische Werte	**Characteristic values**					
Durchlaßspannung	on-state voltage	$t_{vj} = t_{vj\ max}$, i_F = 2,3 kA	V_T	max.	1,45	V
Schleusenspannung	threshold voltage	$t_{vj} = t_{vj\ max}$	$V_{T(TO)}$		0,70	V
Ersatzwiderstand	slope resistance	$t_{vj} = t_{vj\ max}$	r_T		0,31	mΩ
Sperrstrom	reverse current	$t_{vj} = t_{vj\ max}$, $V_R = V_{RRM}$	i_R	max.	20	mA
Thermische Eigenschaften	**Thermal properties**					
Innerer Widerstand	thermal resistance, junction	beidseitig/two-sided, Θ =180° sin	R_{thJC}	max.	0,067	°C/W
	to case	beidseitig/two sided, DC		max.	0,063	°C/W
		Anode/anode, Θ =180° sin		max.	0,104	°C/W
		Anode/anode, DC		max.	0,100	°C/W
		Kathode/cathode, Θ =180° sin		max.	0,174	°C/W
		Kathode/cathode, DC		max.	0,170	°C/W
Übergangs-Wärmewiderstand	thermal resistance,case to heatsink	beidseitig /two-sided	R_{thCK}	max.	0,015	°C/W
		einseitig /single-sided		max.	0,030	°C/W
Höchstzul.Sperrschichttemperatur	max. junction temperature		$t_{vj\ max}$		180	°C
Betriebstemperatur	operating temperature		$t_{c\ op}$		-40...+150	°C
Lagertemperatur	storage temperature		t_{stg}		-40...+150	°C
Mechanische Eigenschaften	**Mechanical properties**					
Si-Element mit Druckkontakt	Si-pellet with pressure contact	∅ = 21 mm				
Anpreßkraft	clamping force	Gehäuseform/case design T	F		3,8...7,6	kN
Gewicht	weight		G	typ.	75	g
Kriechstrecke	creepage distance				25	mm
Feuchteklasse	humidity classification	DIN 40040				C
Schwingfestigkeit	vibration resistance	f = 50 Hz			50	m/s^2
Maßbild	outline				Seite/page	

* Bitte Liefertermin erfragen /Delivery on request



Bild/Fig. 1
Grenzdurchlaßkennlinie
Limiting forward characteristic $i_F = f(v_F)$
——— t_{vj} = 180 °C
— — — — t_{vj} = 25 °C

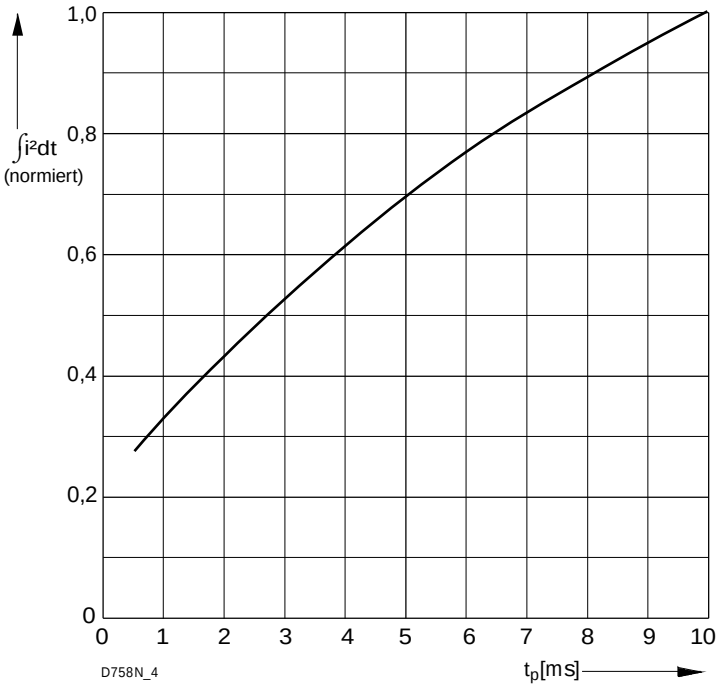


Bild / Fig. 2
Normiertes Grenzlastintegral / Normalized i²t
$\int i^2dt = f(t_p)$

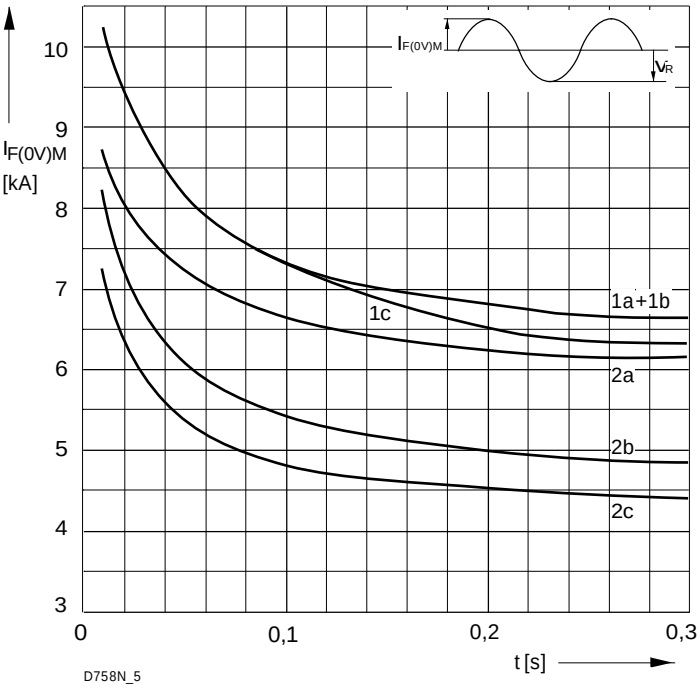


Bild / Fig. 3
Grenzstrom / Maximum overload forward current $I_{F(0V)M} = f(t)$
1 - $I_{FAV(vor)}$ = 0 A; $t_{vj} = t_C$ = 25 °C
2 - $I_{FAV(vor)}$ = 760 A; t_C = 115 °C; t_{vj} = 180 °C
a - $v_R \leq 50$ V
b - $v_R = 0{,}5\ V_{RRM}$
c - $v_R = 0{,}8\ V_{RRM}$

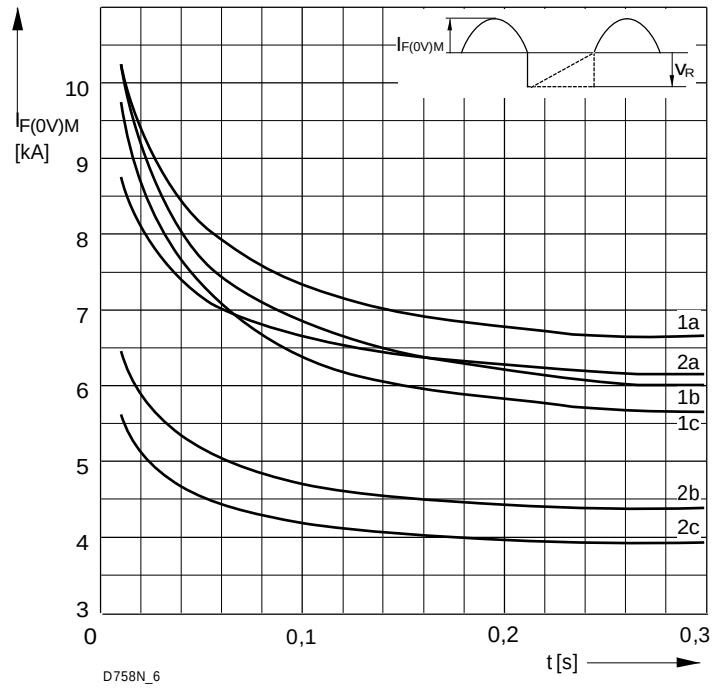


Bild / Fig. 4
Grenzstrom / Maximum overload forward current $I_{F(0V)M} = f(t)$
1 - $I_{FAV(vor)}$ = 0 A; $t_{vj} = t_C$ = 25 °C
2 - $I_{FAV(vor)}$ = 760 A; t_C = 115 °C; t_{vj} = 180 °C
a - $v_R \leq 50$ V
b - $v_R = 0{,}5\ V_{RRM}$
c - $v_R = 0{,}8\ V_{RRM}$

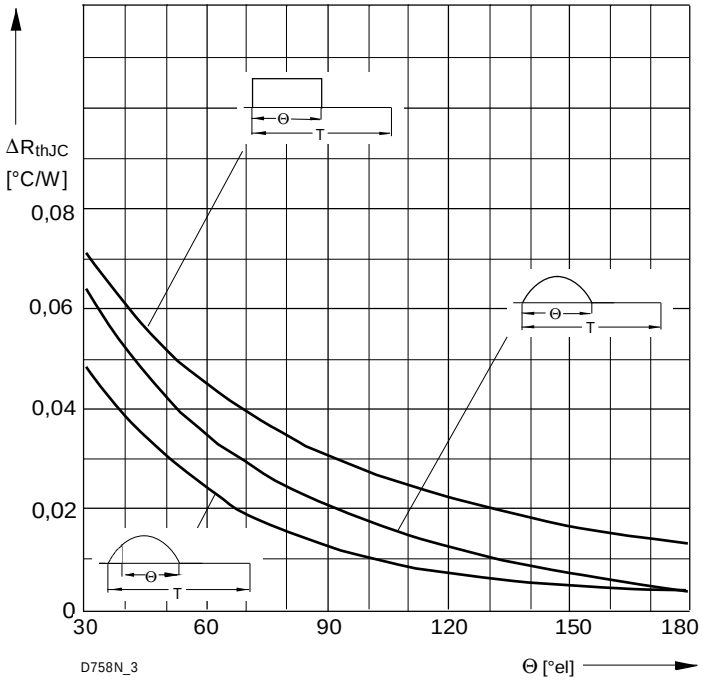


Bild / Fig. 5
Differenz zwischen den Wärmewiderständen für Pulsstrom und DC
Difference between the values of thermal resistance for pulse current and DC
Parameter: Stromkurvenform / Current waveform

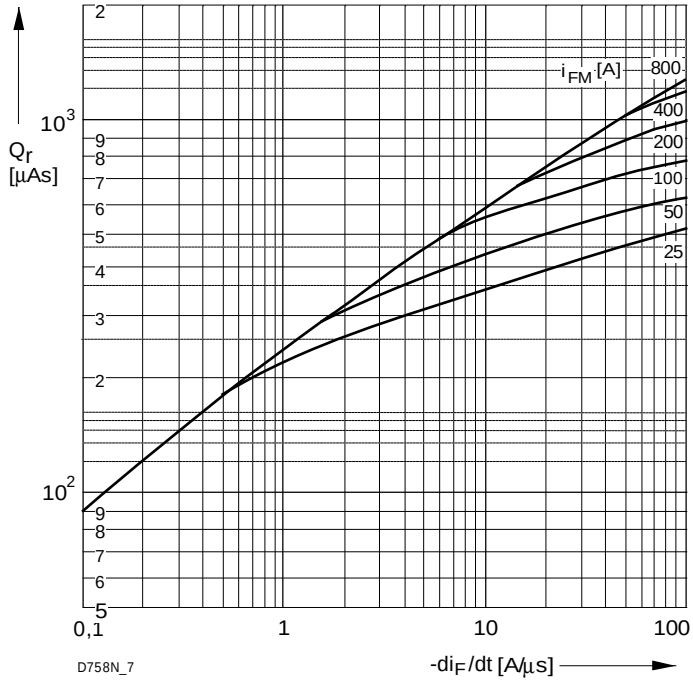
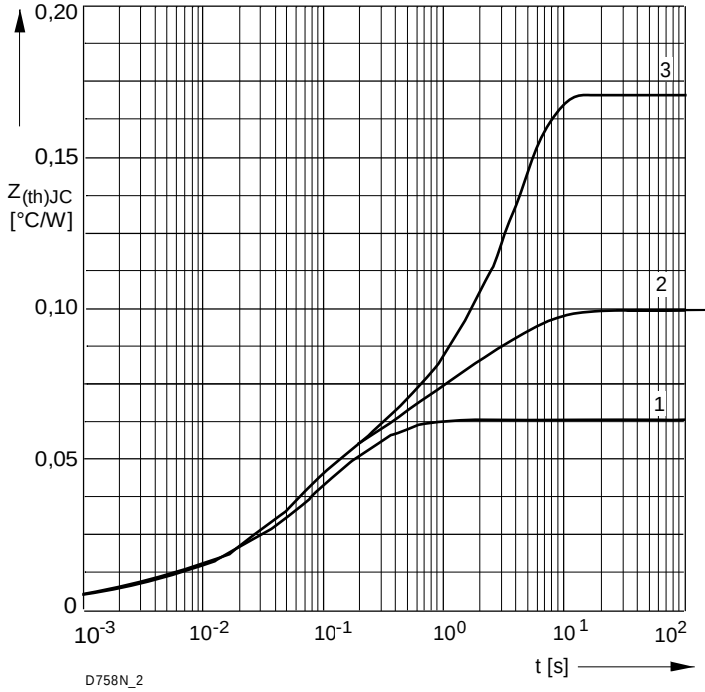


Bild / Fig. 6
Sperrverzögerungsladung / Recovered charge Qr = f(-diF/dt)
tvj = tvjmax; vR ≤ 0,5 VRRM; VRM = 0,8 VRRM
Beschaltung / Snubber: C = 1 µF; R = 2,9 Ω
Parameter: Durchlaßstrom / Forward current iFM



Analytische Elemente des transienten Wärmewiderstandes ZthJC für DC
Analytical elements of transient thermal impedance ZthJC for DC

Kühlg. Cooling	Pos. n	1	2	3	4	5	6	7
1	Rthn °C/W	0,000110	0,00193	0,00751	0,03415	0,0193		
	τn [s]	0,00002	0,000245	0,00181	0,0569	0,377		
2	Rthn °C/W	0,000096	0,0018	0,006464	0,0118	0,03744	0,0213	0,0211
	τn [s]	0,000017	0,000243	0,0014	0,0278	0,103	1,26	5,2
3	Rthn °C/W	0,000048	0,002232	0,00673	0,0387	0,00929	0,113	
	τn [s]	0,000009	0,00024	0,00172	0,0543	0,556	3,41	

1 - Beidseitige Kühlung / Two-sided cooling
2 - Anodenseitige Kühlung / Anode-sided cooling
3 - Kathodenseitige Kühlung / Cathode-sided cooling

Analytische Funktion / Analytical function

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

Bild / Fig. 7
Transienter innerer Wärmewiderstand
Transient thermal impedance ZthJC = f(t), DC
1 - Beidseitige Kühlung / Two-sided cooling
2 - Anodenseitige Kühlung / Anode-sided cooling
3 - Kathodenseitige Kühlung / Cathode-sided cooling