



Elektrische Eigenschaften / Electrical properties

Höchstzulässige Werte / Maximum rated values

Periodische Spitzensperrspannung repetitive peak reverse voltage	$T_{vj} = -40^{\circ}\text{C} \dots T_{vj \max}$ $f = 50\text{Hz}$	V_{RRM}	$T_{vj \min} = -40^{\circ}\text{C}$ 8500 9000	$0^{\circ}\text{C} \dots T_{vj \max}$ 8750 9250	V V
Durchlaßstrom-Grenzeffektivwert RMS forward current		I_{FRMSM}	4850		A
Dauergrenzstrom mean forward current	$T_C = 100^{\circ}\text{C}, f = 50\text{Hz}$ $T_C = 60^{\circ}\text{C}, f = 50\text{Hz}$	I_{FAVM}	2600 3070		A A
Stoßstrom-Grenzwert surge forward current	$T_{vj} = 25^{\circ}\text{C}, t_p = 10\text{ms}$ $T_{vj} = T_{vj \max}, t_p = 10\text{ms}$	I_{FSM}	52 50		kA kA
Grenzlastintegral I^2t -value	$T_{vj} = 25^{\circ}\text{C}, t_p = 10\text{ms}$ $T_{vj} = T_{vj \max}, t_p = 10\text{ms}$	I^2t	$13,5 \cdot 10^6$ $12,5 \cdot 10^6$		A^2s A^2s

Charakteristische Werte / Characteristic values

Durchlaßspannung forward voltage	$T_{vj} = T_{vj \max}, I_F = 4000\text{A}$	V_F	typ. 2,46	max. 2,6	V
Schleusenspannung threshold voltage	$T_{vj} = T_{vj \max}$ $I_F = 4000\text{A}$	$V_{(TO)}$	typ. 0,903	max. 0,977	V
Ersatzwiderstand forward slope resistance	$T_{vj} = T_{vj \max}$	r_T	typ. 0,388	max. 0,427	mΩ
Durchlaßrechenkennlinie 1500 A $\leq I_F \leq$ 4000 A On-state characteristics for calculation $V_F = A + B \cdot i_F + C \cdot \ln(i_F + 1) + D \cdot \sqrt{i_F}$	$T_{vj} = T_{vj \max}$	A B C D	typ. 0,73430446 1,99326E-04 -0,05081052 0,02126404	max. 0,7266184 2,08612E-04 -0,04951845 0,02427166	
Sperrstrom reverse current	$T_{vj} = T_{vj \max}, V_R = V_{RRM}$	I_R	100		mA
Sperrverzögerungsladung recovered charge	$T_{vj} = T_{vj \max}$ $I_{TM} = 1 \text{ kA}, di/dt = 10 \text{ A}/\mu\text{s}$ $V_R = 1000\text{V}, V_{RM} = 1600\text{V}$ $C = 1\mu\text{F}, R = 22\Omega$	Q_r	25		mAs
Rückstromspitze peak reverse recovery current	$T_{vj} = T_{vj \max}$ $I_{TM} = 1 \text{ kA}, di/dt = 10 \text{ A}/\mu\text{s}$ $V_R = 1000\text{V}, V_{RM} = 1600\text{V}$ $C = 1\mu\text{F}, R = 22\Omega$	I_{RM}	400		A

Technische Information / Technical Information

Netz Gleichrichterdiode
Rectifier Diode

D 2601 N 90 T

eupec

N



Thermische Eigenschaften / Thermal properties

Innerer Wärmewiderstand thermal resistance, junction to case	beidseitig / two-sided, DC Anode / anode, DC Kathode / cathode, DC	R_{thJC}	max max max	0,0075 0,0133 0,0172	°C/W °C/W °C/W
Übergangs-Wärmewiderstand thermal resistance, case to heatsink	Kühlfläche / cooling surface beidseitig / two-sided einseitig / single sided	R_{thCK}	max max	0,0025 0,005	°C/W °C/W
Höchstzulässige Sperrschichttemperatur max. junction temperature		$t_{vj \max}$		160	°C
Betriebstemperatur operating temperature		$t_{c \text{ op}}$		-40...+160	°C
Lagertemperatur storage temperature		t_{stg}		-40...+160	°C

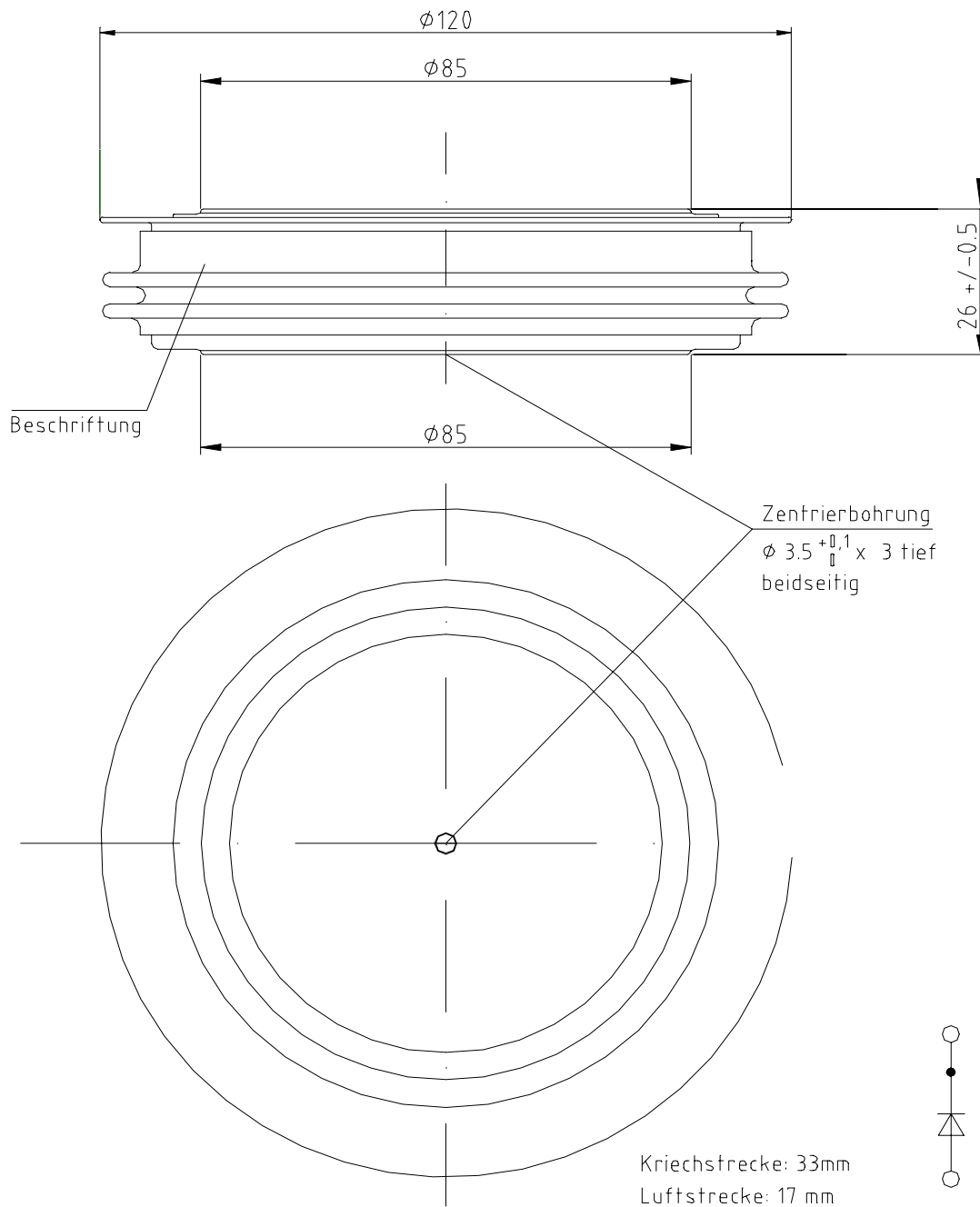
Mechanische Eigenschaften / Mechanical properties

Gehäuse, siehe Anlage case, see appendix				Seite 3	
Si - Element mit Druckkontakt Si - pellet with pressure contact				76DN90	
Anpreßkraft clamping force		F		36...52	kN
Gewicht weight		G	typ	1200	g
Kriechstrecke creepage distance				33	mm
Luftstrecke air distance				17	mm
Feuchtklasse humidity classification	DIN 40040			C	
Schwingfestigkeit vibration resistance	f = 50Hz			50	m/s ²

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.



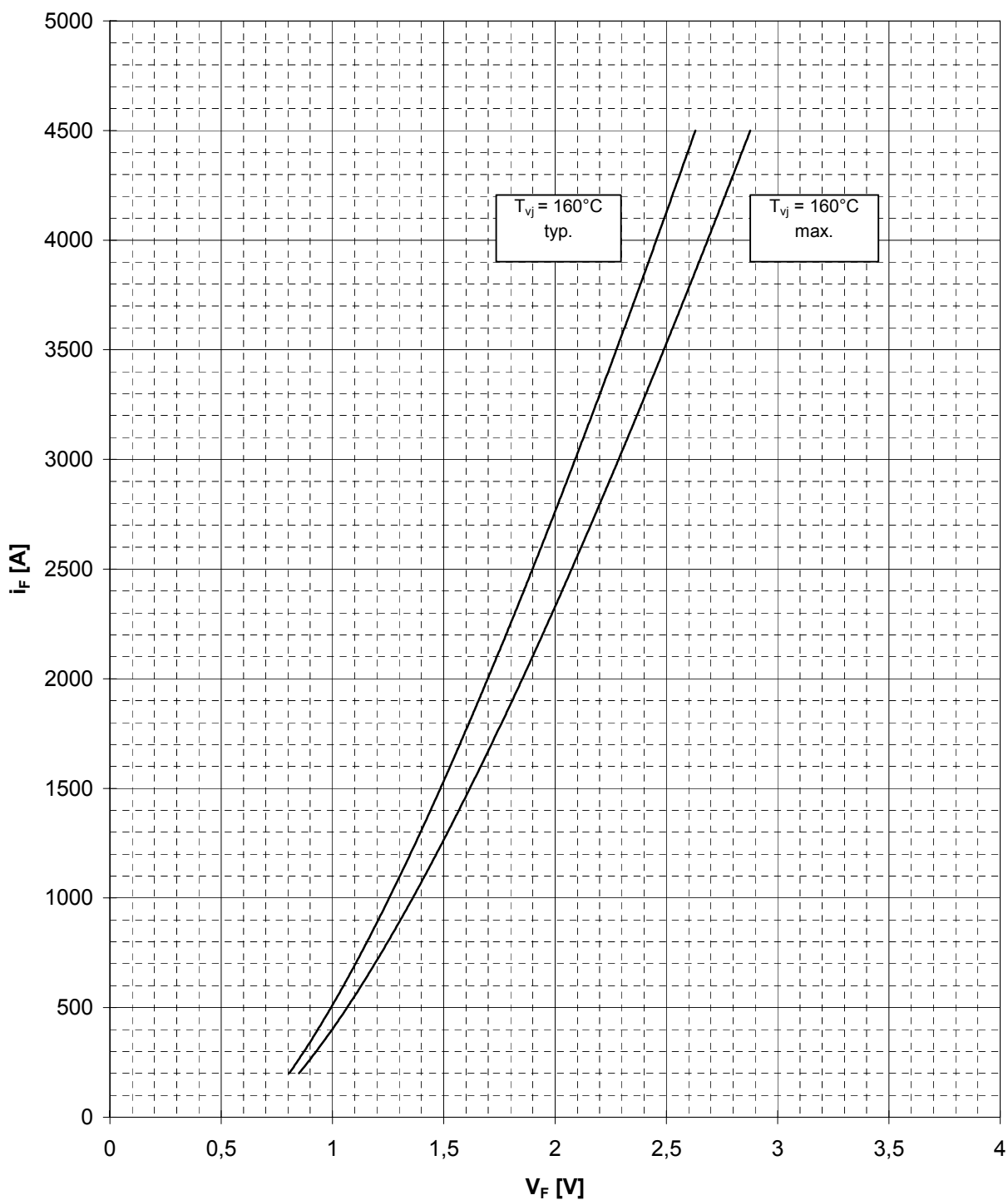
Maßbild /Outline





Durchlaßkennlinie / On-State Characteristics $i_F = f(v_F)$

Limiting and typical on-state characteristic



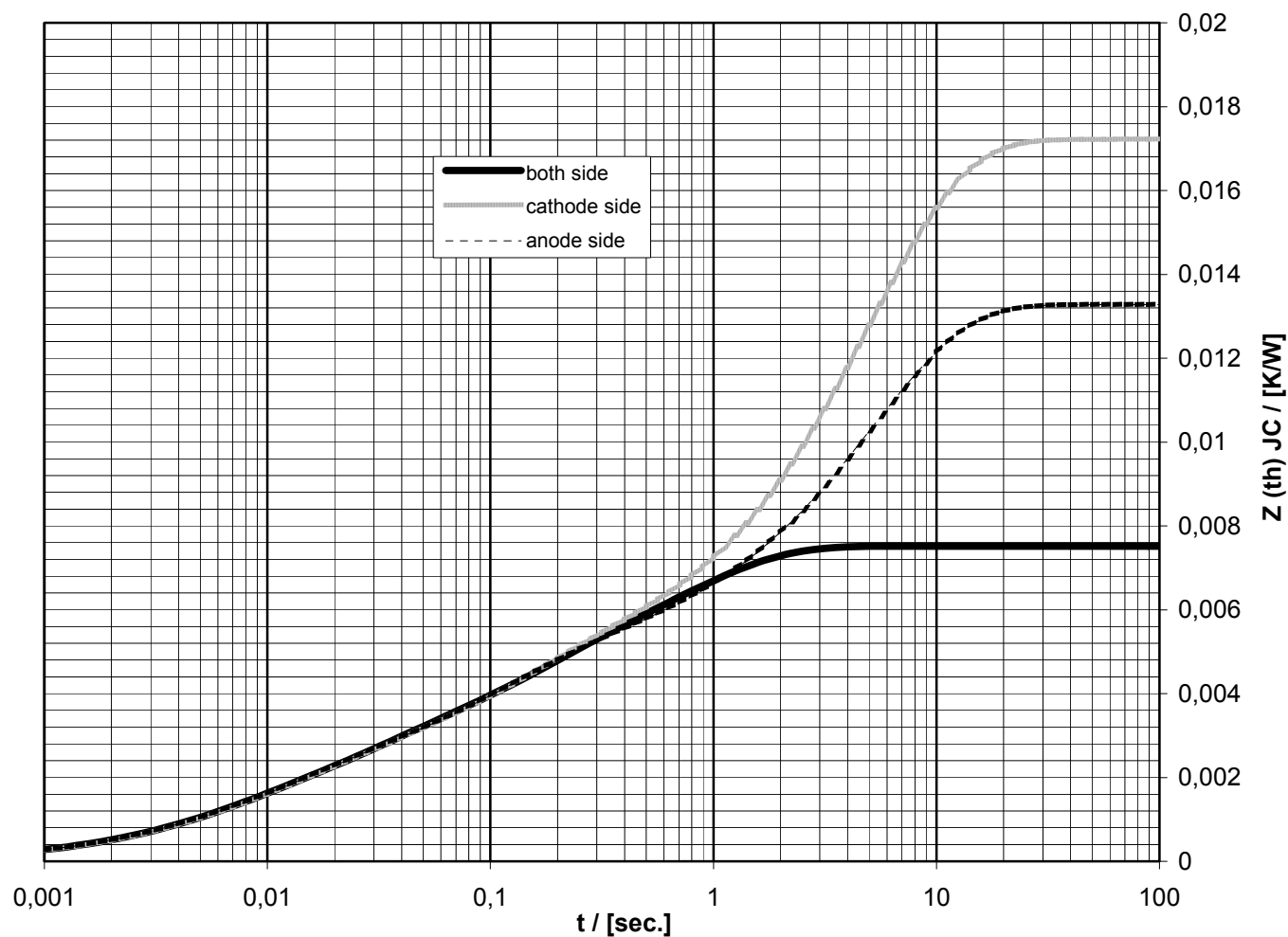


Transienter innerer Wärmewiderstand Transient thermal impedance $Z_{(th) JC} = f(t)$

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

	Double side cooled		Cathode side cooled		Anode side cooled	
	r [K/W]	[s]	r [K/W]	[s]	r [K/W]	[s]
1	0,00296	0,78008	0,01212	4,97289	0,00802	5,11029
2	0,00200	0,13092	0,00040	0,48885	0,00081	0,35916
3	0,00154	0,02165	0,00244	0,12071	0,00238	0,09623
4	0,00098	0,00514	0,00155	0,01530	0,00160	0,01197
5	0,00003	0,00104	0,00071	0,00427	0,00046	0,00332
Σ	0,0075	-	0,0172	-	0,0133	-

$Z_{th} = f(t)$
without heat sink



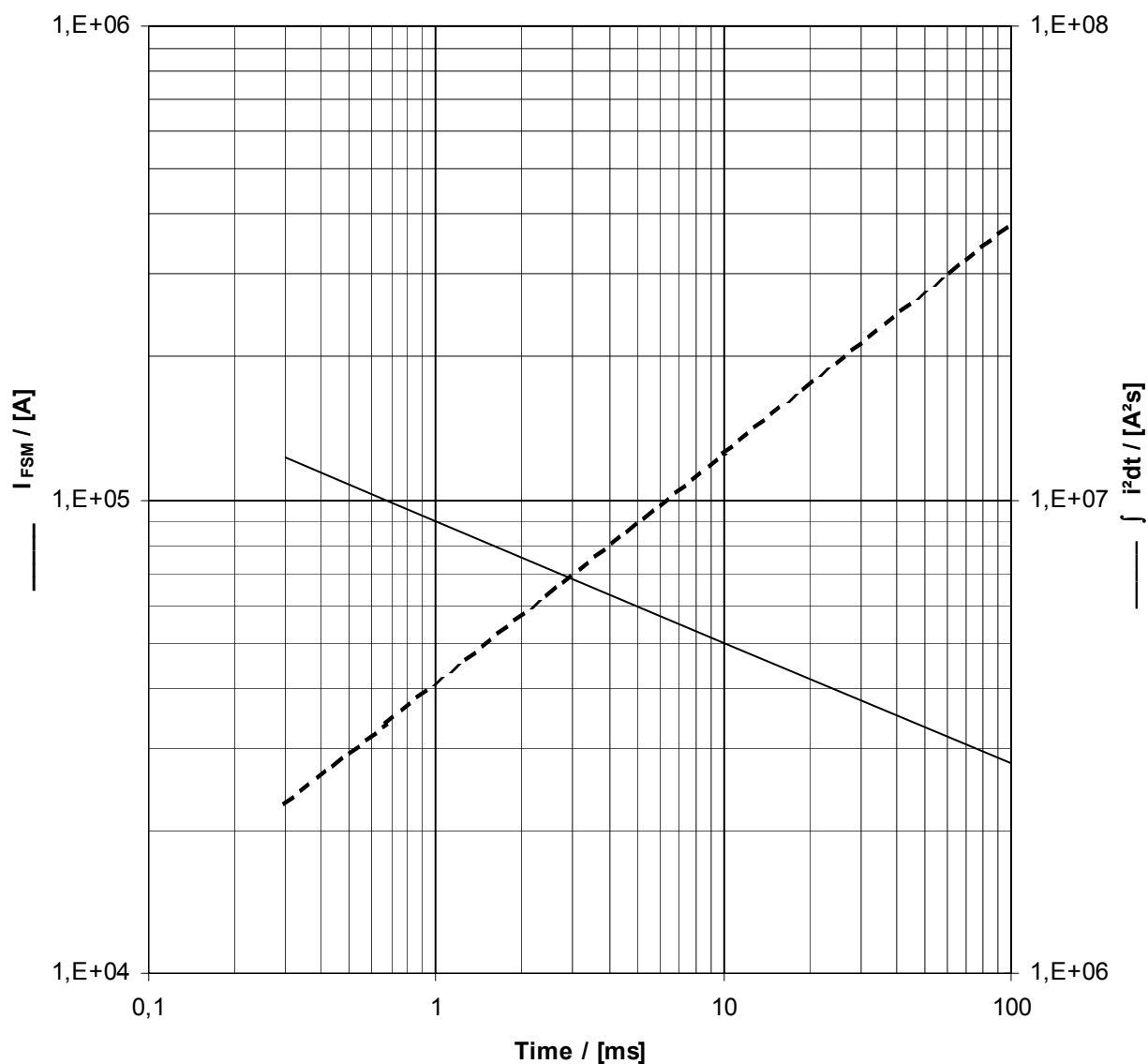


Stoßstrom / Grenzlastintegral Charakteristik

Surge Current / I^2t value Characteristics

$$I_{FSM} = f(t_p) / \int i^2 dt = f(t_p)$$

Sine half-wave, $T_{vj}=160^\circ\text{C}$, $v_R=0$

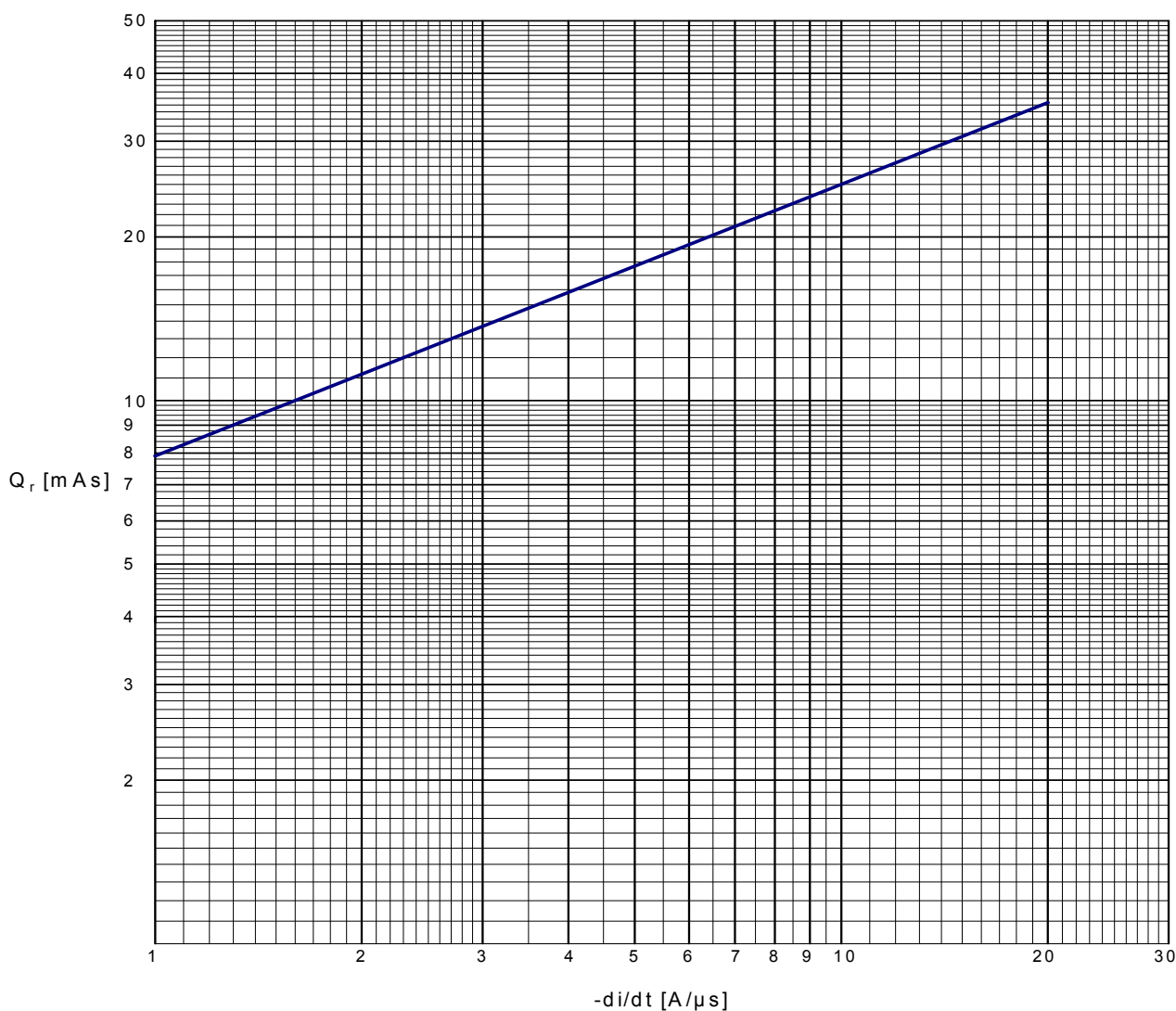




Sperrverzögerungsladung / recovered charge

$$Q_r = f (- di/dt)$$

$T_{vj} = 160^{\circ}\text{C}$, $I_{TM} = 1000\text{A}$, $v_R = 1000\text{V}$, $v_{RM} = 1600\text{V}$, $C = 1\mu\text{F}$, $R = 22\Omega$



**Rückstromspitze / reverse recovery current**

$$I_{RM} = f(-di/dt)$$

$T_{vj} = 160^{\circ}\text{C}$, $I_{TM} = 1000\text{A}$, $v_R = 1000\text{V}$, $v_{RM} = 1600\text{V}$, $C = 1\mu\text{F}$, $R = 22\Omega$

