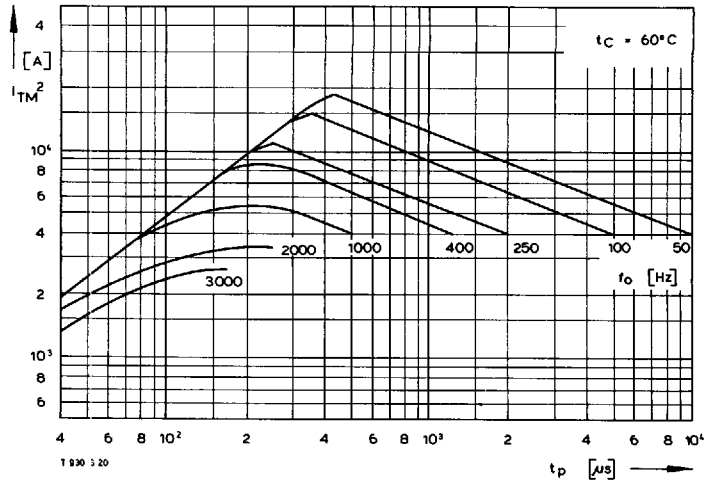
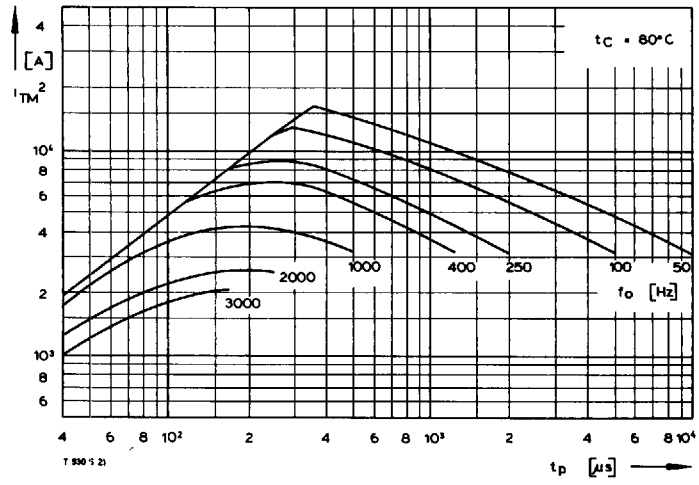
Typenreihe/Type range		1600	1800	2000	
Elektrische Eigenschaften		**Electrical properties**			
Höchstzulässige Werte		Maximum permissible values			
V_{DRM}			1600...2000		V
V_{RRM}			1600...2000		V
I_{TRMSM}				2000	A
I_{TAVM}	t_C = 85°C			930	A
	t_C = 62°C			1274	A
I_{TSM}	t = 10 ms, t_{vj} = 45°C			20,5	kA
	t = 10 ms, t_{vj} = $t_{vj\,max}$			18	kA
$\int i^2dt$	t = 10 ms, t_{vj} = 45°C			2100	kA^2s
	t = 10 ms, t_{vj} = $t_{vj\,max}$			1620	kA^2s
$(di/dt)_{cr}$	nicht per./non rep.			1000	A/µs
	per./rep., i_{TM} = 3,8 kA			250	A/µs
	i_G = 1 A, di_G/dt = 1 A/µs				
$(dv/dt)_{cr}$	v_D = 67% V_{DRM}, t_{vj} = $t_{vj\,max}$		1)	2)	
		B:	50	50	V/µs
		C*:	400	400	V/µs
		L:	400	50	V/µs
		M*:	1000	400	V/µs
Charakteristische Werte		Characteristic values			
v_T	t_{vj} = $t_{vj\,max}$, i_T = 3,5 kA			2,7	V
$V_{(TO)}$	t_{vj} = $t_{vj\,max}$			1,35	V
r_T	t_{vj} = $t_{vj\,max}$			0,33	mΩ
V_{GT}	t_{vj} = 25°C, v_D = 6 V, R_A = 5 Ω			2,2	V
I_{GT}	t_{vj} = 25°C, v_D = 6 V, R_A = 5 Ω			250	mA
	t_{vj} = $t_{vj\,max}$, v_D = 6 V, R_A = 5 Ω			10	mA
I_H	t_{vj} = 25°C, v_D = 6 V, R_A = 5 Ω			300	mA
I_L	t_{vj} = 25°C, v_D = 6 V, R_{GK} ≥ 10 Ω			1,5	A
	i_G = 1 A, di_G/dt = 1 A/µs, t_g = 20 µs				
i_D	t_{vj} = $t_{vj\,max}$, v_D = V_{DRM}			200	mA
i_R	t_{vj} = $t_{vj\,max}$, v_R = V_{RRM}			200	mA
t_{gd}	i_G = 1 A, di_G/dt = 1 A/µs			1,5	µs
t_q	Prüfbedingungen siehe 3.4.3.2/	K:		40	µs
	test conditions see 3.4.3.2	M:		50	µs
		N:		60	µs
Q_s	t_{vj} = $t_{vj\,max}$, i_{TM} = 1300 A, $-di_T/dt$ = 20 A/µs			350	µAs
C_{null}	t_{vj} = 25°C, f = 10 kHz			14	nF

Thermische Eigenschaften		**Thermal properties**
R_{thJC}	Θ = 180°el, sinus	≤ 0,021°C/W
	DC	≤ 0,02 °C/W
$R_{thJC(A)}$	Θ = 180°el, sinus	≤ 0,036°C/W
	DC	≤ 0,035°C/W
$R_{thJC(K)}$	Θ = 180°el, sinus	≤ 0,048°C/W
	DC	≤ 0,047°C/W
R_{thCK}		0,008°C/W
$t_{vj\,max}$		125°C
$t_{vj\,op}$		– 40°C...+125°C
t_{stg}		– 40°C...+150°C

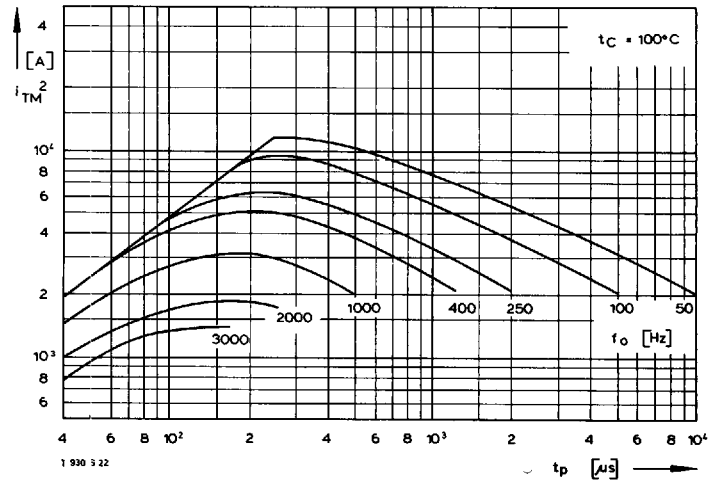
Mechanische Eigenschaften		**Mechanical properties**
G		600 g
M		
F		20...30 kN
		25 mm
Case	DIN 41814–155 B 4	Seite/page 198



Bild/Fig. 1



Bild/Fig. 2

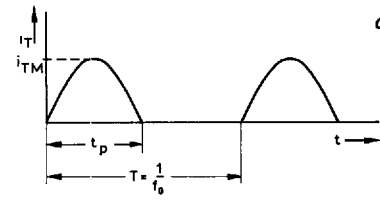


Bild/Fig. 3

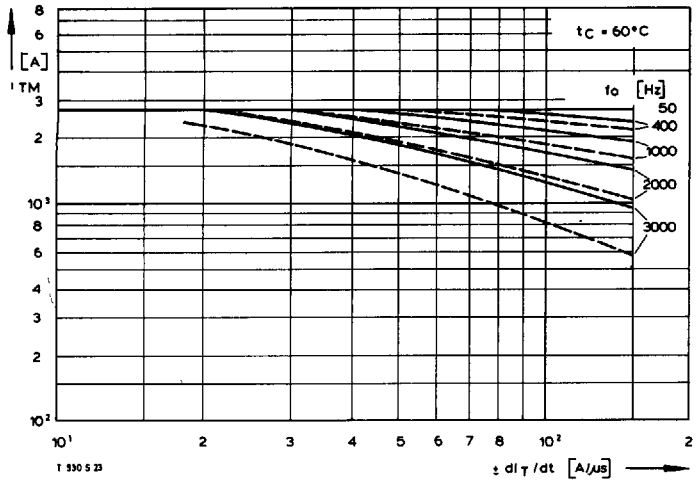
Steuergenerator:
i_G = 1 A, t_a = 1 µs,
RC-Glied: R [Ω] ≥ 0,02 v_{DM} [V],
C ≤ 0,33 µF

pulse generator:
i_G = 1 A, t_a = 1 µs,
RC network: R [Ω] ≥ 0.02 v_{DM} [V],
C ≤ 0.33 µF

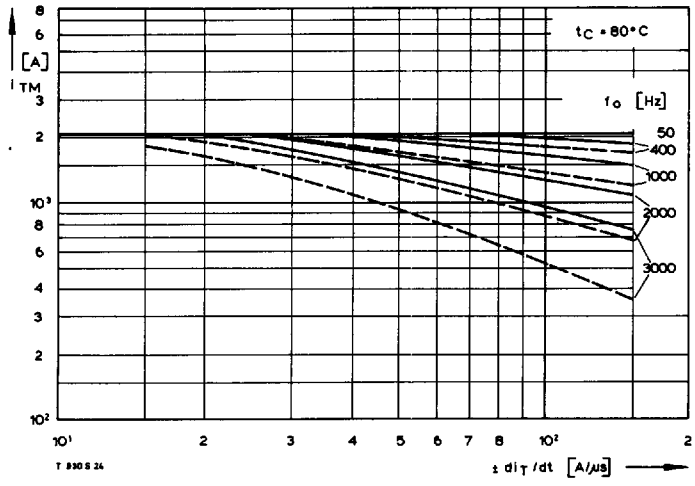
dv_D/dt ≤ 600 V/µs



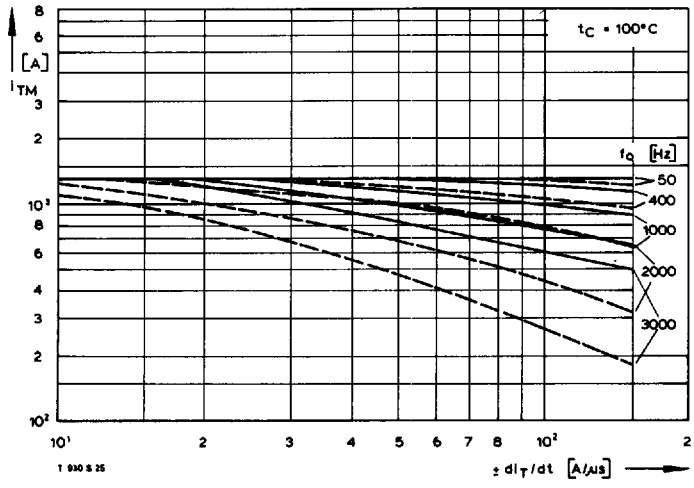
* Für größere Stückzahlen bitte Liefertermin erfragen/
Delivery for larger quantities on request
1) Werte nach DIN 41787 (ohne vorausgehende Kommutierung)/
Values to DIN 41787 (without prior commutation)
2) Unmittelbar nach der Freiwerdezeit/Immediately after turn-off time



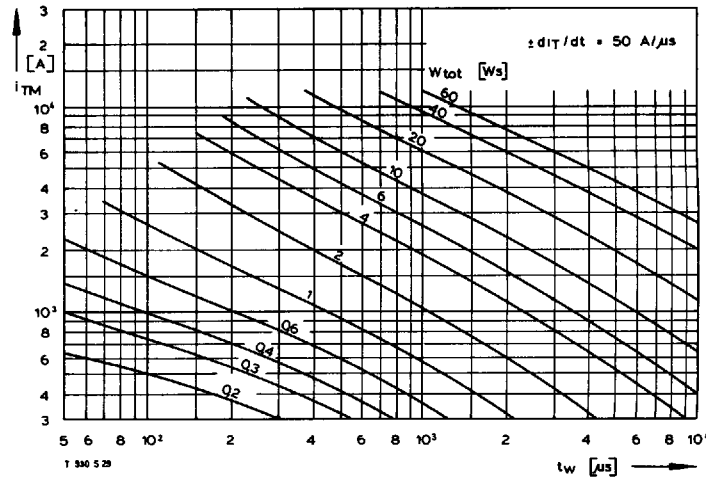
Bild/Fig. 4



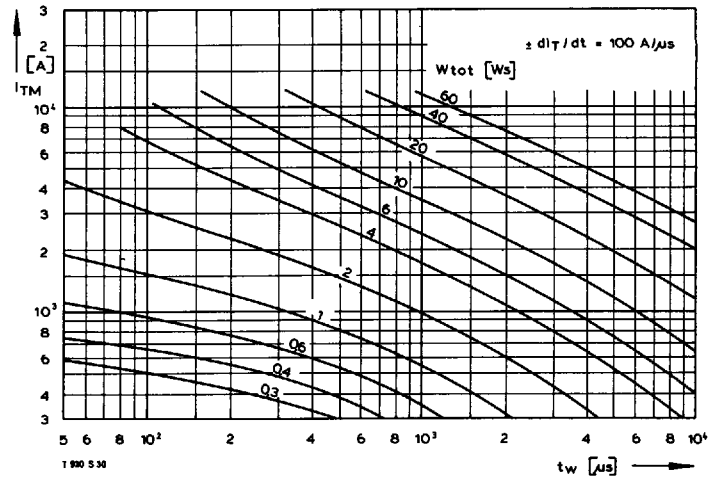
Bild/Fig. 5



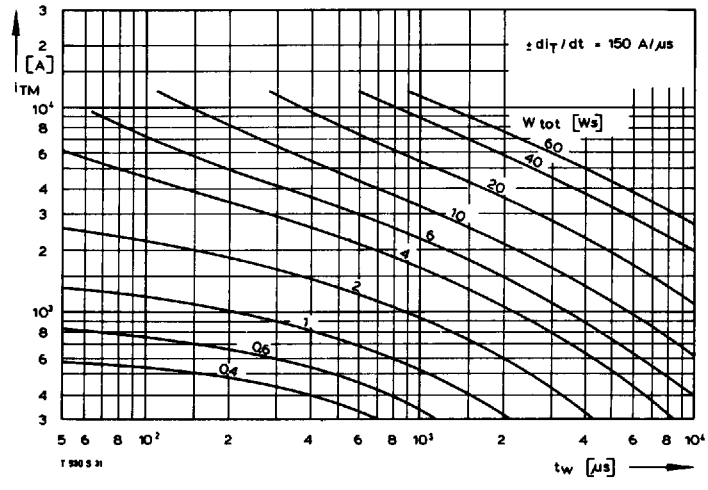
Bild/Fig. 6



Bild/Fig. 7



Bild/Fig. 8

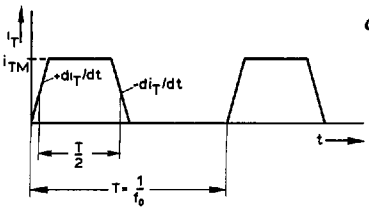


Bild/Fig. 9

Steuergenerator:
i_G = 1 A, t_a = 1 µs,
RC-Glied: R [Ω] ≥ 0,02 v_{DM} [V],
C ≤ 0,47 µF

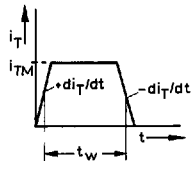
pulse generator:
i_G = 1 A, t_a = 1 µs,
RC network: R [Ω] ≥ 0.02 v_{DM} [V],
C ≤ 0.47 µF

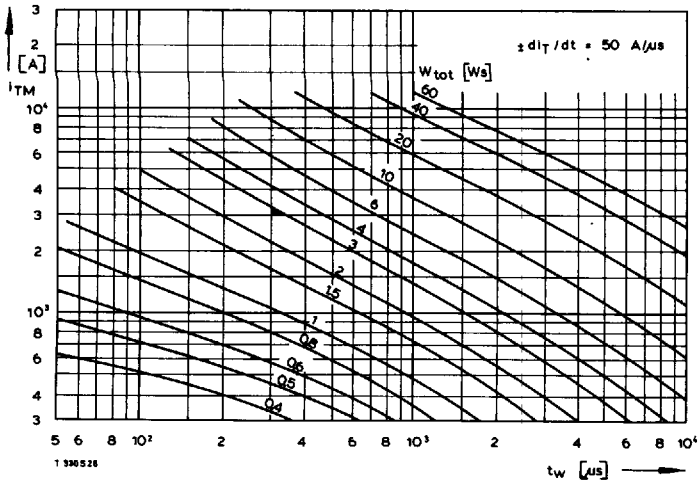
dv_D/dt ≤ 600 V/µs



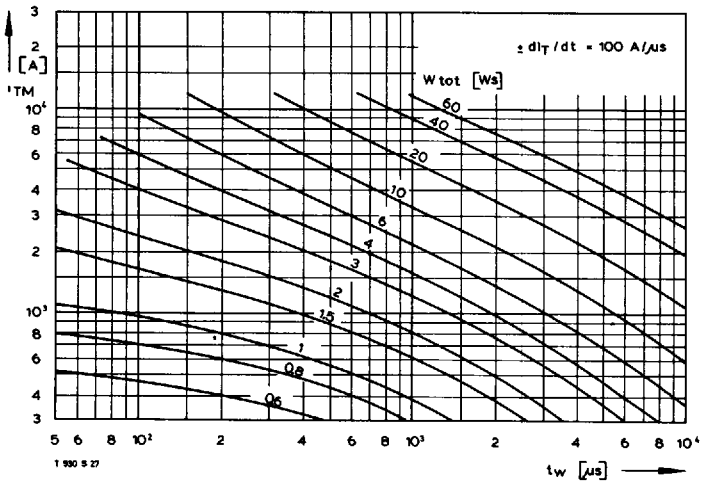
Steuergenerator:
i_G = 1 A, t_a = 1 µs,
RC-Glied: R [Ω] ≥ 0,02 v_{DM} [V],
C ≤ 0,47 µF

pulse generator:
i_G = 1 A, t_a = 1 µs,
RC network: R [Ω] ≥ 0.02 v_{DM} [V],
C ≤ 0.47 µF

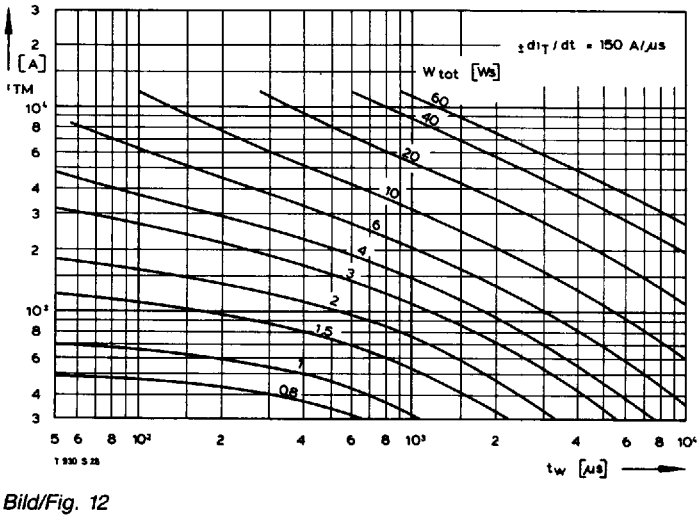




Bild/Fig. 10

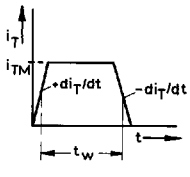


Bild/Fig. 11



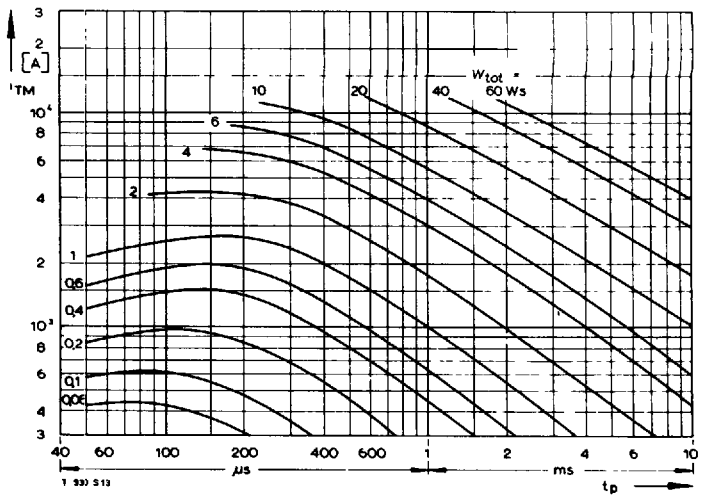
Bild/Fig. 12

Steuergenerator:
i_G = 1 A, t_a = 1 µs,
RC-Glied: R [Ω] ≥ 0,02 v_{DM} [V],
C ≤ 0,47 µF

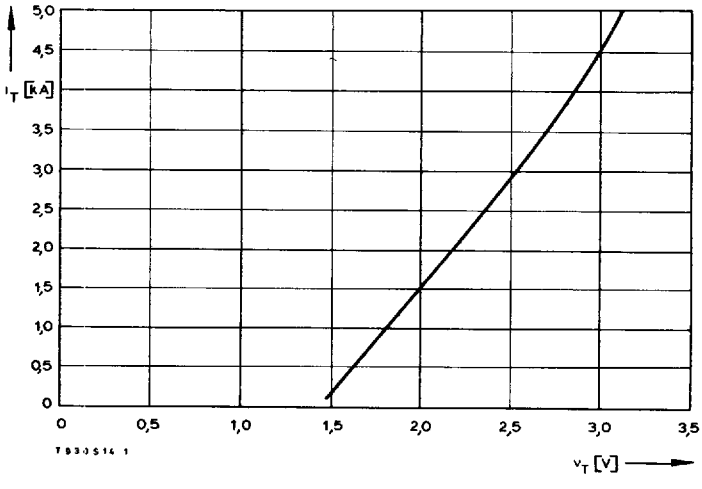


pulse generator:
i_G = 1 A, t_a = 1 µs,
RC network: R [Ω] ≥ 0.02 v_{DM} [V],
C ≤ 0.47 µF

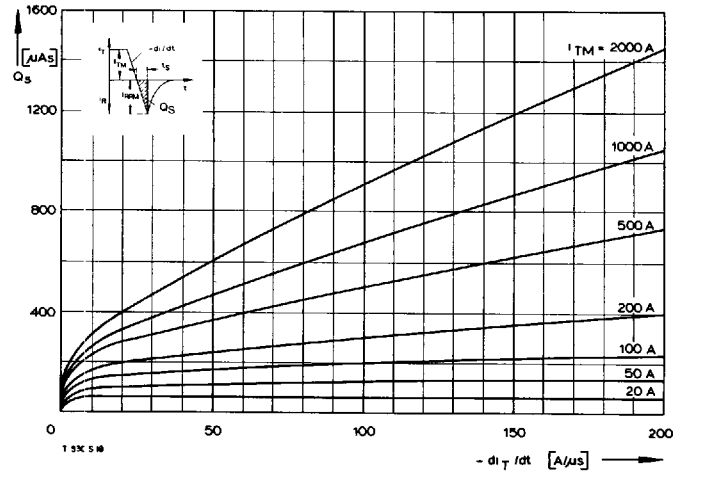
dv_R/dt ≤ 700 V/µs



Bild/Fig 13

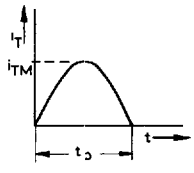


Bild/Fig. 14

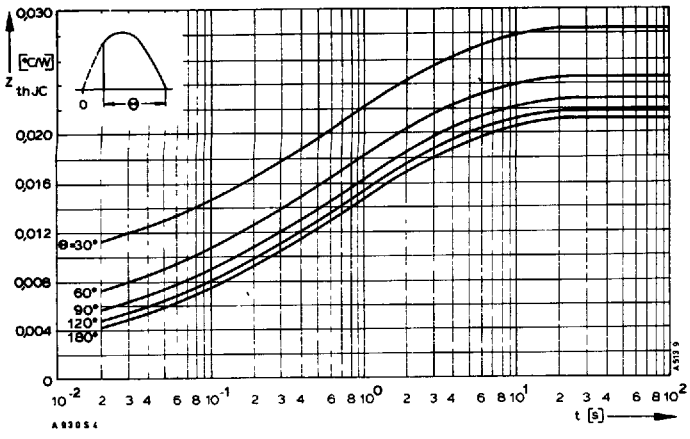


Bild/Fig. 15

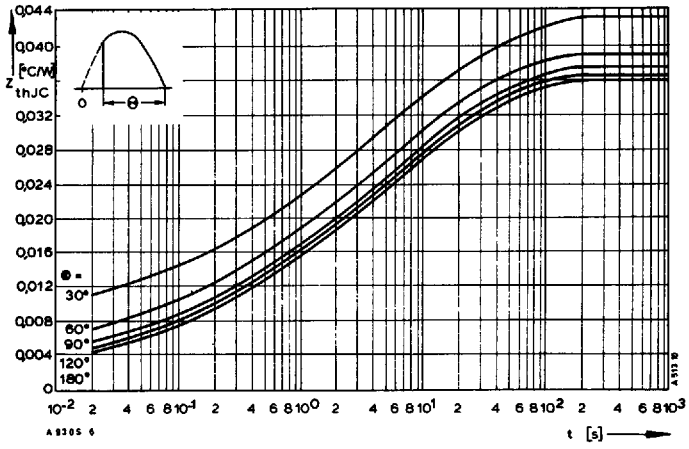
(zu Bild/to Fig. 13)
Steuergenerator:
i_G = 1 A, t_a = 1 µs,
RC-Glied: R [Ω] ≥ 0,02 v_{DM} [V],
C ≤ 0,33 µF



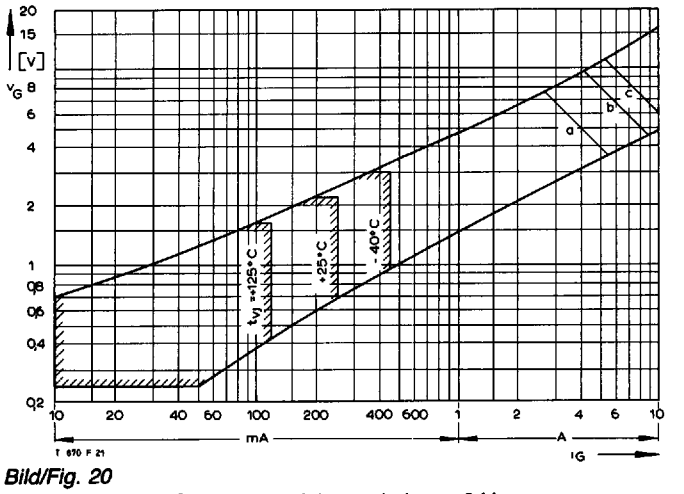
pulse generator:
i_G = 1 A, t_a = 1 µs,
RC network: R [Ω] ≥ 0.02 v_{DM} [V],
C ≤ 0.33 µF



Bild/Fig. 16
Transienter innerer Wärmewiderstand $Z_{(th)JC}$ für beidseitige Kühlung
Transient thermal impedance, junction to case, $Z_{(th)JC}$ for two-sided cooling

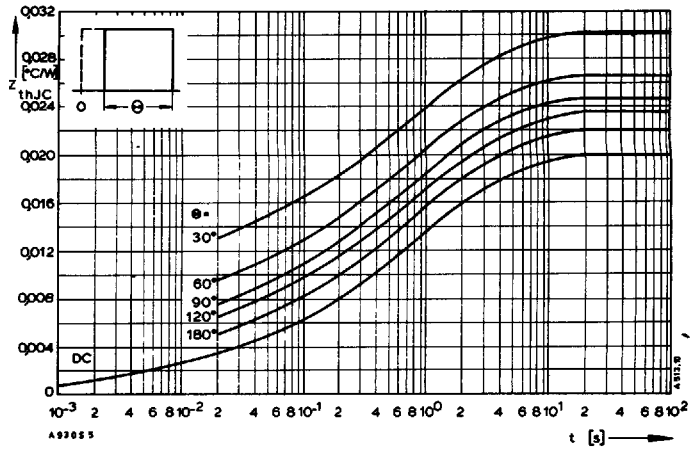


Bild/Fig. 17
Transienter innerer Wärmewiderstand $Z_{(th)JC}$ für anodenseitige Kühlung
Transient thermal impedance, junction to case, $Z_{(th)JC}$ for anode-sided cooling

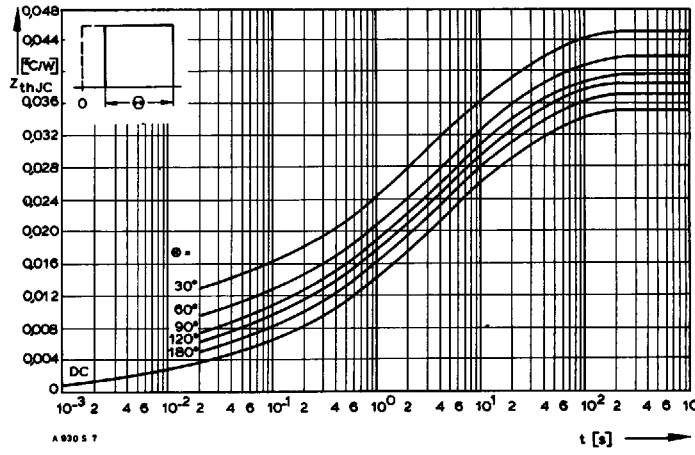


Bild/Fig. 20
Zündbereich und Spitzensteuerleistung bei $v_D \geq 6$ V.
Gate characteristic and peak gate power dissipation at $v_D \geq 6$ V.

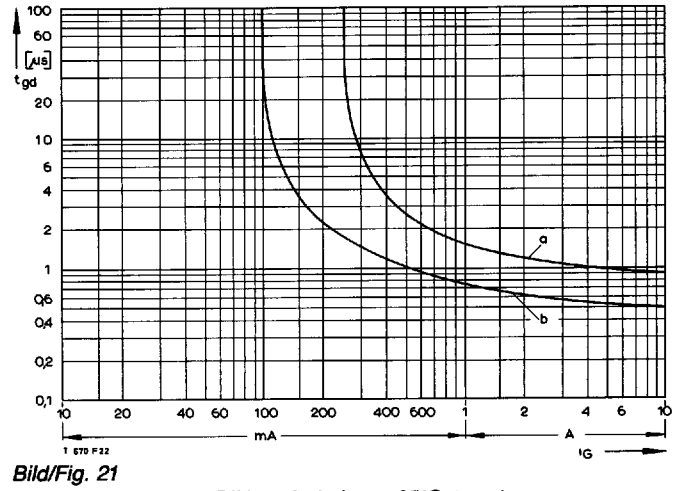
Parameter:		*a*	*b*	*c*
Steuerimpulsdauer/Pulse duration t_g	*[ms]*	*10*	*1*	*0,5*
Höchstzulässige Spitzensteuerleistung/ Maximum allowable peak gate power	*[W]*	*20*	*40*	*60*



Bild/Fig. 18
Transienter innerer Wärmewiderstand $Z_{(th)JC}$ für beidseitige Kühlung
Transient thermal impedance, junction to case, $Z_{(th)JC}$ for two-sided cooling



Bild/Fig. 19
Transienter innerer Wärmewiderstand $Z_{(th)JC}$ für anodenseitige Kühlung
Transient thermal impedance, junction to case, $Z_{(th)JC}$ for anode-sided cooling



Bild/Fig. 21
Zündverzug t_{gd} nach DIN 41787 bei t_{vj} = 25°C, t_a = 1 µs.
Gate controlled delay time t_{gd} to DIN 41787 at t_{vj} = 25°C, t_a = 1 µs.
a – äußerster Verlauf/limiting characteristic
b – typischer Verlauf/typical characteristic

Tabelle 1 – Größen des thermischen Ersatzschaltbildes, Konstantstrom

	i	1	2	3	4	5	6	7
Z_{thJC}	R_{thi} [°C/W]	0,00114	0,00224	0,00487	0,00749	0,00426		
	τ_i [s]	0,0014	0,015	0,17	1,05	5,1		
$Z_{thJC(A)}$	R_{thi} [°C/W]	0,00106	0,00239	0,004	0,00725	0,0116	0,0087	
	τ_i [s]	0,0013	0,015	0,16	0,9	5,8	44	
$Z_{thJC(K)}$	R_{thi} [°C/W]	0,00106	0,00245	0,00499	0,0116	0,0127	0,0142	
	τ_i [s]	0,0013	0,0150	0,19	1,7	10,2	53,5	