

Transistor	Transistor
Elektrische Eigenschaften	Electrical properties
Höchstzulässige Werte	Maximum rated values
V_{CES}	1200 V
I_C	50 A
I_{CRM} $t_p = 1$ ms	100 A
P_{tot} $t_C = 25^\circ\text{C}$	400 W
V_{GE}	20 V
V_{EG}	20 V

Charakteristische Werte	Characteristic values
$V_{CE\ sat}$	$I_{CM} = 50$ A, $V_{GE} = 15$ V, $t_{vj} = 25^\circ\text{C}$ typ. 3 V
	$I_{CM} = 50$ A, $V_{GE} = 15$ V, $t_{vj} = 25^\circ\text{C}$ max. 4 V
$V_{GE\ (th)}$	$V_{CE} = 5$ V, $I_C = 50$ mA, $t_{vj} = 25^\circ\text{C}$ min. 3 V
	$V_{CE} = 5$ V, $I_C = 50$ mA, $t_{vj} = 25^\circ\text{C}$ max. 6 V
C_{ies}	$V_{CE} = 10$ V, $V_{GE} = 0$ V, $f_o = 1$ MHz, $t_{vj} = 25^\circ\text{C}$ typ. 6 nF
I_{CES}	$V_{CE} = 1200$ V, $V_{GE} = 0$ V, $t_{vj} = 25^\circ\text{C}$ typ. 0,3 mA
	$V_{CE} = 1200$ V, $V_{GE} = 0$ V, $t_{vj} = 125^\circ\text{C}$ typ. 2 mA
I_{GES}	$V_{GE} = 20$ V, $t_{vj} = 25^\circ\text{C}$ typ. 1 μA
	$V_{GE} = 20$ V, $t_{vj} = 25^\circ\text{C}$ max. 10 μA
I_{EGS}	$V_{EG} = 20$ V, $t_{vj} = 25^\circ\text{C}$ typ. 1 μA
	$V_{EG} = 20$ V, $t_{vj} = 25^\circ\text{C}$ max. 10 μA
t_{on}	$I_{CM} = 50$ A, $V_{CE} = 600$ V, $V_{LF} = 15$ V, $R_G = 24\ \Omega$, $t_{vj} = 25^\circ\text{C}$ typ. 0,4 μs
	$I_{CM} = 50$ A, $V_{CE} = 600$ V, $V_{LF} = 15$ V, $R_G = 24\ \Omega$, $t_{vj} = 125^\circ\text{C}$ typ. 0,5 μs
t_s	$I_{CM} = 50$ A, $V_{CE} = 600$ V, $V_{LF} = 15$ V, $V_{LR} = 15$ V, $R_G = 24\ \Omega$, $t_{vj} = 25^\circ\text{C}$ typ. 0,5 μs
	$I_{CM} = 50$ A, $V_{CE} = 600$ V, $V_{LF} = 15$ V, $V_{LR} = 15$ V, $R_G = 24\ \Omega$, $t_{vj} = 125^\circ\text{C}$ typ. 0,6 μs
t_f	$I_{CM} = 50$ A, $V_{CE} = 600$ V, $V_{LF} = 15$ V, $V_{LR} = 15$ V, $R_G = 24\ \Omega$, $t_{vj} = 25^\circ\text{C}$ typ. 0,2 μs
	$I_{CM} = 50$ A, $V_{CE} = 600$ V, $V_{LF} = 15$ V, $V_{LR} = 15$ V, $R_G = 24\ \Omega$, $t_{vj} = 125^\circ\text{C}$ typ. 0,25 μs

Bedingungen für den Kurzschlußschutz	Conditions for protection against short circuits
$t_{fg} = 10\ \mu\text{s}$, $V_{LF} = V_{LR} = 15$ V, $R_G = 24\ \Omega$, $t_{vj} = 125^\circ\text{C}$,	$V_{CC} = 750$ V, $V_{CEM} = 1000$ V, $i_{CMK\ 1} \approx 600$ A, $i_{CMK\ 2} \approx 400$ A,

Thermische Eigenschaften	Thermal properties
R_{thJC}	DC, pro Baustein / per module 0,155 $^\circ\text{C/W}$
	DC, pro Zweig / per arm 0,31 $^\circ\text{C/W}$
R_{thCK}	pro Baustein / per module 0,06 $^\circ\text{C/W}$
	pro Zweig / per arm 0,12 $^\circ\text{C/W}$

$t_{vj\ max}$	150 $^\circ\text{C}$
$t_{vj\ op}$	- 40 / + 150 $^\circ\text{C}$
t_{stg}	- 40 / + 125 $^\circ\text{C}$

Inversdiode	Inverse diode
Elektrische Eigenschaften	Electrical properties

Höchstzulässige Werte	Maximum rated values
$I_{F(max)}$	50 A
I_{FRM} $t_p = 1$ ms	100 A

Charakteristische Werte	Characteristic values
V_F	$I_F = 50$ A, $V_{GE} = 0$ V, $t_{vj} = 25^\circ\text{C}$ typ. 1,8 V
	$I_F = 50$ A, $V_{GE} = 0$ V, $t_{vj} = 25^\circ\text{C}$ max. 2,5 V
I_{RM}	$I_{FM} = 50$ A, $-di_F/dt = 100$ A/ μs $V_{EG} = 10$ V, $t_{vj} = 25^\circ\text{C}$ typ. 7 A
	$I_{FM} = 50$ A, $-di_F/dt = 100$ A/ μs $V_{EG} = 10$ V, $t_{vj} = 125^\circ\text{C}$ typ. 15 A
Q_r	$I_{FM} = 50$ A, $-di_F/dt = 100$ A/ μs $V_{EG} = 10$ V, $t_{vj} = 25^\circ\text{C}$ typ. 1 μAs
	$I_{FM} = 50$ A, $-di_F/dt = 100$ A/ μs $V_{EG} = 10$ V, $t_{vj} = 125^\circ\text{C}$ typ. 3,5 μAs

Thermische Eigenschaften	Thermal properties
R_{thJC}	DC, pro Baustein / per module 0,5 $^\circ\text{C/W}$
	DC, pro Zweig / per arm 1,0 $^\circ\text{C/W}$
R_{thCK}	pro Baustein / per module 0,06 $^\circ\text{C/W}$
	pro Zweig / per arm 0,12 $^\circ\text{C/W}$

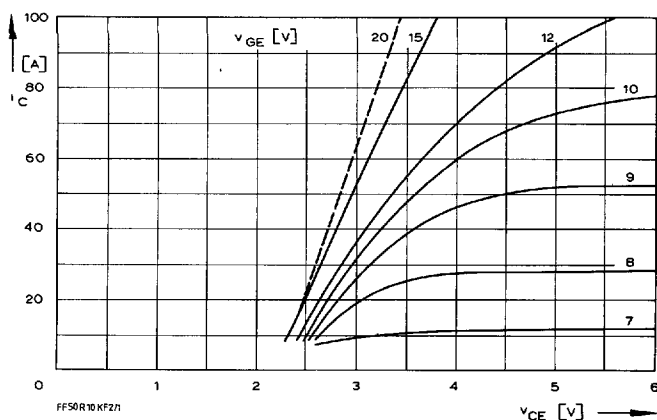
$t_{vj\ max}$	125 $^\circ\text{C}$
$t_{vj\ op}$	- 40 / + 125 $^\circ\text{C}$
t_{stg}	- 40 / + 125 $^\circ\text{C}$

Innere Isolation	Internal insulation
Isoliermaterial: Al N	Insulating material: Al N
V_{ISOL} RMS (f=50 Hz, t=1 min)	2,5 kV

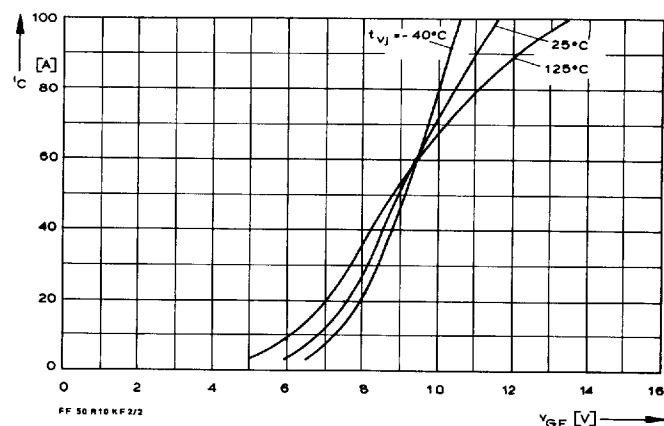
Mechanische Eigenschaften	Mechanical properties
G	205 g
M 1	3 Nm
M 2	3 Nm

Maßbild
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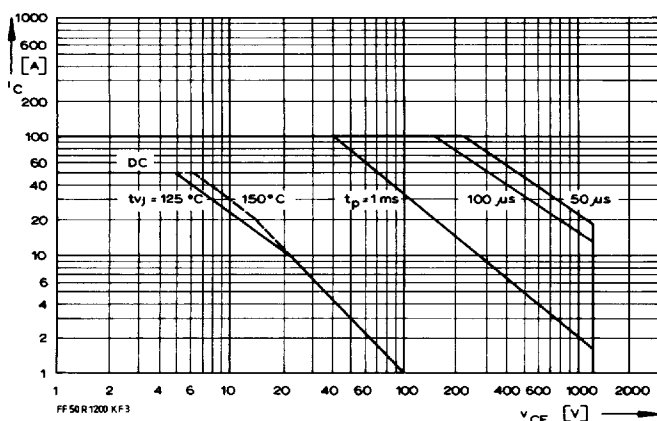
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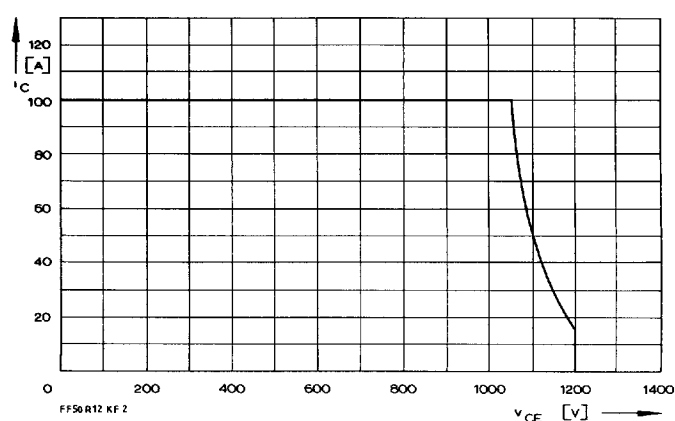
1 Kollektor-Emitter-Spannung im Sättigungsbereich (typisch).
Collector-emitter-voltage in saturation region (typical).
 $t_{vj} = 25^\circ\text{C}$



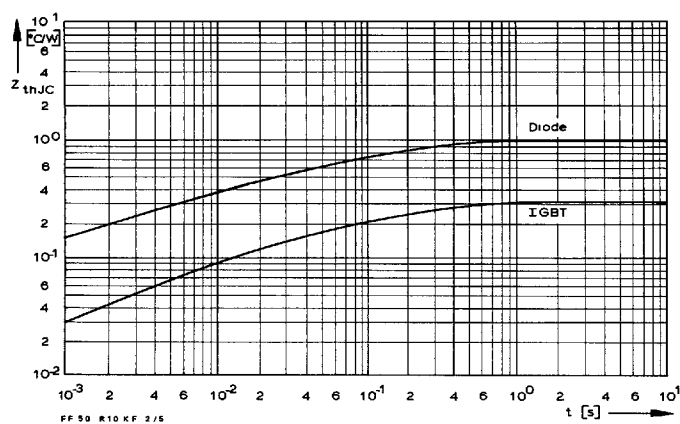
2 Übertragungscharakteristik (typisch).
Transfer characteristic (typical).
 $V_{CE} = 5\text{ V}$



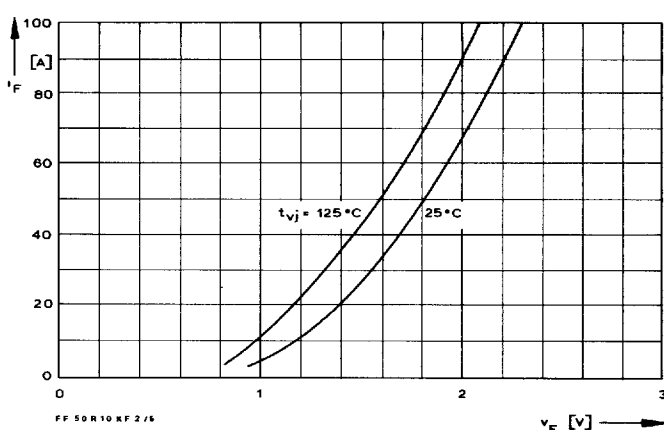
3 Vorwärts-Arbeitsbereich FBSOA (Einzelimpuls, nicht periodisch).
Forward biased safe operating area (single pulse, non repetitive).
 $t_C = 25^\circ\text{C}$



4 Rückwärts-Arbeitsbereich RBSOA.
Reverse biased safe operating area.
 $t_{vj} = 125^\circ\text{C}$, $V_{LF} = V_{LR} = 15\text{ V}$, $R_G = 24\ \Omega$



5 Transienter innerer Wärmewiderstand je Zweig (DC).
Transient thermal impedance per arm (DC)



6 Durchlaßkennlinie der Inversdiode (typisch).
Forward characteristic of the inverse diode (typical).
 $V_{GE} = 0\text{ V}$