

Transistor		Transistor	
Elektrische Eigenschaften		Electrical properties	
Höchstzulässige Werte		Maximum rated values	
V_{CES}		1200	V
I_C		300	A
I_{CRM}	$t_p = 1 \text{ ms}$	600	A
P_{tot}	$t_C = 25^\circ\text{C}$	1800	W
V_{GE}		20	V
V_{EG}		20	V

Charakteristische Werte		Characteristic values	
$V_{CE \text{ sat}}$	$i_{CM} = 300 \text{ A}, V_{GE} = 15 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ. 3	V
	$i_{CM} = 300 \text{ A}, V_{GE} = 15 \text{ V}, t_{vj} = 25^\circ\text{C}$	max. 4	V
$V_{GE} \text{ (th)}$	$V_{CE} = 5 \text{ V}, i_C = 300 \text{ mA}, t_{vj} = 25^\circ\text{C}$	min. 3	V
	$V_{CE} = 5 \text{ V}, i_C = 300 \text{ mA}, t_{vj} = 25^\circ\text{C}$	max. 6	V
C_{ies}	$V_{CE} = 10 \text{ V}, V_{GE} = 0 \text{ V}, f_o = 1 \text{ MHz}, t_{vj} = 25^\circ\text{C}$	typ. 36	nF
i_{CES}	$V_{CE} = 1200 \text{ V}, V_{GE} = 0 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ. 1	mA
	$V_{CE} = 1200 \text{ V}, V_{GE} = 0 \text{ V}, t_{vj} = 125^\circ\text{C}$	typ. 6	mA
i_{GES}	$V_{GE} = 20 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ. 3	nA
	$V_{GE} = 20 \text{ V}, t_{vj} = 25^\circ\text{C}$	max. 30	nA
i_{EGS}	$V_{EG} = 20 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ. 3	nA
	$V_{EG} = 20 \text{ V}, t_{vj} = 25^\circ\text{C}$	max. 30	nA
t_{on}	$i_{CM} = 300 \text{ A}, V_{CE} = 600 \text{ V}, V_{LF} = 15 \text{ V}, R_G = 2,7 \Omega, t_{vj} = 25^\circ\text{C}$	typ. 0,4	μs
	$i_{CM} = 300 \text{ A}, V_{CE} = 600 \text{ V}, V_{LF} = 15 \text{ V}, R_G = 2,7 \Omega, t_{vj} = 125^\circ\text{C}$	typ. 0,6	μs
t_s	$i_{CM} = 300 \text{ A}, V_{CE} = 600 \text{ V}, V_{LF} = 15 \text{ V}, V_{LR} = 15 \text{ V}, R_G = 2,7 \Omega, t_{vj} = 25^\circ\text{C}$	typ. 0,6	μs
	$i_{CM} = 300 \text{ A}, V_{CE} = 600 \text{ V}, V_{LF} = 15 \text{ V}, V_{LR} = 15 \text{ V}, R_G = 2,7 \Omega, t_{vj} = 125^\circ\text{C}$	typ. 0,8	μs
t_f	$i_{CM} = 300 \text{ A}, V_{CE} = 600 \text{ V}, V_{LF} = 15 \text{ V}, V_{LR} = 15 \text{ V}, R_G = 2,7 \Omega, t_{vj} = 25^\circ\text{C}$	typ. 0,2	μs
	$i_{CM} = 300 \text{ A}, V_{CE} = 600 \text{ V}, V_{LF} = 15 \text{ V}, V_{LR} = 15 \text{ V}, R_G = 2,7 \Omega, t_{vj} = 125^\circ\text{C}$	typ. 0,3	μs

Bedingungen für den Kurzschlußschutz	Conditions for protection against short circuits
$t_{fg} = 10 \mu\text{s}$	$V_{CC} = 750 \text{ V}$
$V_{LF} = V_{LR} = 15 \text{ V}$	$V_{CEM} = 1000 \text{ V}$
$R_G = 2,7 \Omega$	$i_{CMK1} \approx 3600 \text{ A}$
$t_{vj} = 125^\circ\text{C}$	$i_{CMK2} \approx 2500 \text{ A}$

Thermische Eigenschaften	Thermal properties
R_{thJC}	DC, pro Baustein / per module 0,0345°C/W DC, pro Zweig / per arm 0,0690°C/W
R_{thCK}	pro Baustein / per module 0,0200°C/W pro Zweig / per arm 0,0400°C/W
$t_{vj \text{ max}}$	150 °C
$t_{vj \text{ op}}$	- 40 / + 150 °C
t_{stg}	- 40 / + 125 °C

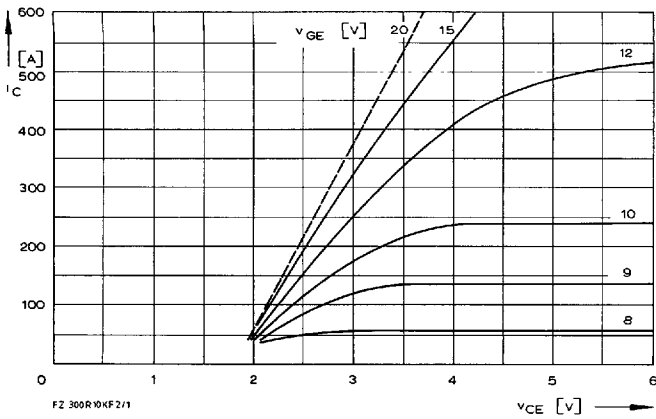
Inversdiode	Inverse diode
Elektrische Eigenschaften	Electrical properties
Höchstzulässige Werte	Maximum rated values
$I_{F(max)}$	300 A
I_{FRM}	$t_p = 1 \text{ ms}$ 600 A

Charakteristische Werte	Characteristic values
V_F	$i_F = 300 \text{ A}, V_{GE} = 0 \text{ V}, t_{vj} = 25^\circ\text{C}$ typ. 1,8 V $i_F = 300 \text{ A}, V_{GE} = 0 \text{ V}, t_{vj} = 25^\circ\text{C}$ max. 3 V
I_{RM}	$i_{FM} = 300 \text{ A}, -di_F/dt = 300 \text{ A}/\mu\text{s}$ $V_{EG} = 10 \text{ V}, t_{vj} = 25^\circ\text{C}$ typ. 24 A $i_{FM} = 300 \text{ A}, -di_F/dt = 300 \text{ A}/\mu\text{s}$ $V_{EG} = 10 \text{ V}, t_{vj} = 125^\circ\text{C}$ typ. 46 A
Q_r	$i_{FM} = 300 \text{ A}, -di_F/dt = 300 \text{ A}/\mu\text{s}$ $V_{EG} = 10 \text{ V}, t_{vj} = 25^\circ\text{C}$ typ. 3,5 μAs $i_{FM} = 300 \text{ A}, -di_F/dt = 300 \text{ A}/\mu\text{s}$ $V_{EG} = 10 \text{ V}, t_{vj} = 125^\circ\text{C}$ typ. 13 μAs

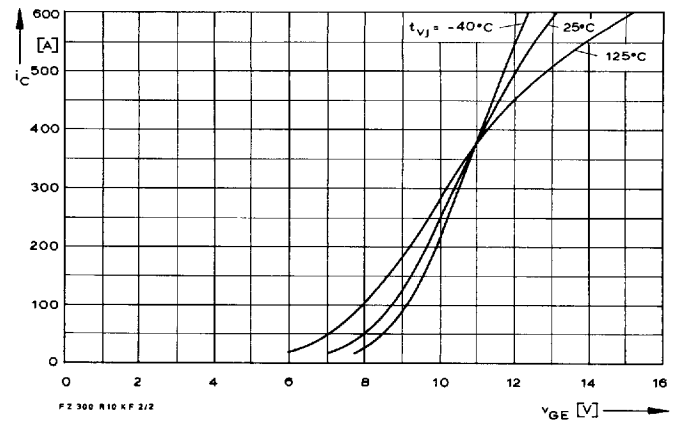
Thermische Eigenschaften	Thermal properties
R_{thJC}	DC, pro Baustein / per module 0,125 °C/W DC, pro Zweig / per arm 0,250 °C/W
R_{thCK}	pro Baustein / per module 0,020 °C/W pro Zweig / per arm 0,040 °C/W
$t_{vj \text{ max}}$	125 °C
$t_{vj \text{ op}}$	- 40 / + 125 °C
t_{stg}	- 40 / + 125 °C

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

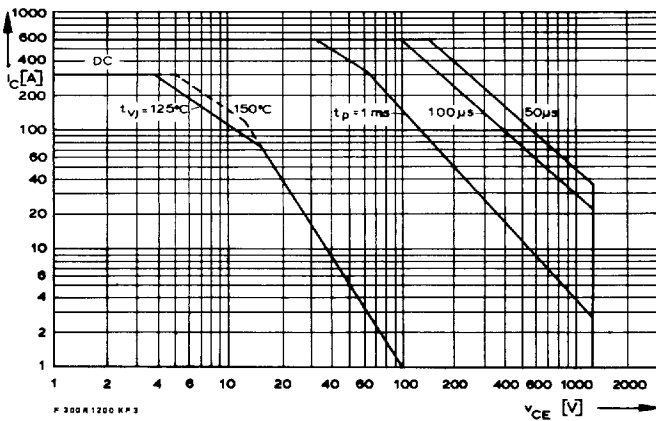
Mechanische Eigenschaften	Mechanical properties
G	540 g
M 1	3 Nm
M 2	3 Nm
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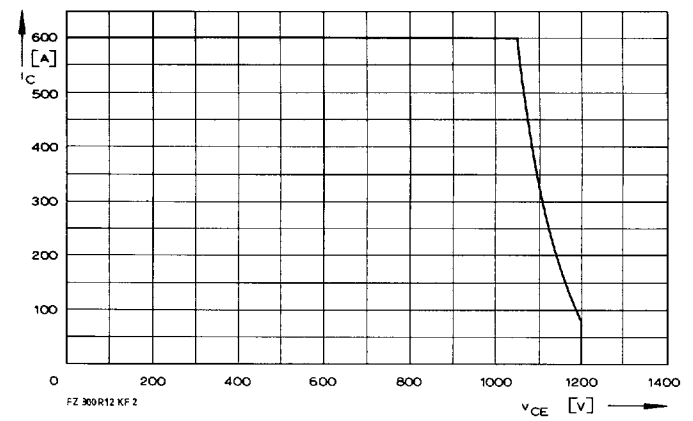
1 Kollektor-Emitter-Spannung im Sättigungsbereich (typisch).
Collector-emitter-voltage in saturation region (typical).
 $t_{vj} = 25^\circ\text{C}$



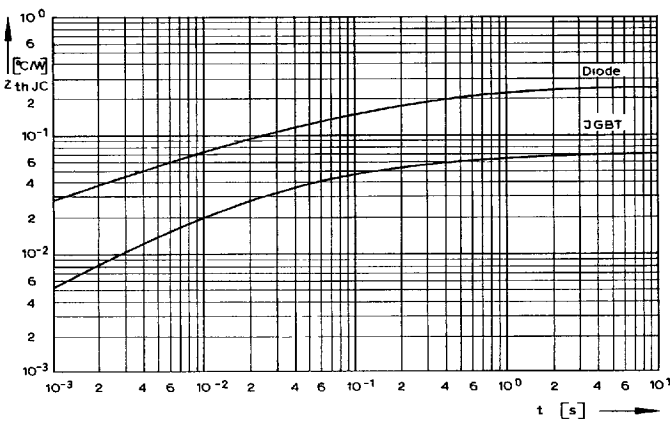
2 Übertragungscharakteristik (typisch).
Transfer characteristic (typical).
 $v_{CE} = 5\text{ V}$



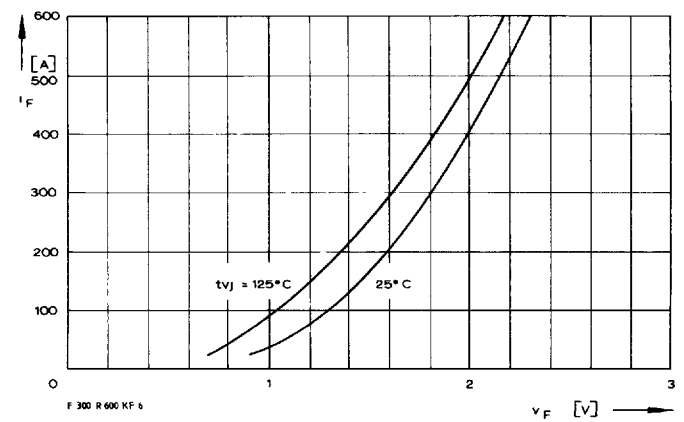
3 Vorwärts-Arbeitsbereich FBSOA (Einzelimpuls, nicht periodisch).
Forward biased safe operating area (single pulse, non repetitive).
 $t_c = 25^\circ\text{C}$



4 Rückwärts-Arbeitsbereich RBSOA.
Reverse biased safe operating area.
 $t_{vj} = 125^\circ\text{C}$, $v_{LF} = v_{LR} = 15\text{ V}$, $R_G = 2,7\ \Omega$



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).
 $v_{GE} = 0\text{ V}$