

Transistor		Transistor	
Elektrische Eigenschaften		Electrical properties	
Höchstzulässige Werte		Maximum rated values	
V_{CE}		1200	V
I_C		600	A
I_{CRM}	$t_p = 1 \text{ ms}$	1200	A
P_{tot}	$t_C = 25^\circ\text{C}$	3600	W
V_{GE}		20	V
V_{EG}		20	V

Charakteristische Werte		Characteristic values	
$V_{CE \text{ sat}}$	$i_{CM} = 600 \text{ A}, V_{GE} = 15 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ.	3 V
	$i_{CM} = 600 \text{ A}, V_{GE} = 15 \text{ V}, t_{vj} = 25^\circ\text{C}$	max.	4 V
$V_{GE (th)}$	$V_{CE} = 5 \text{ V}, i_C = 600 \text{ mA}, t_{vj} = 25^\circ\text{C}$	min.	3 V
	$V_{CE} = 5 \text{ V}, i_C = 600 \text{ mA}, t_{vj} = 25^\circ\text{C}$	max.	8 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.	72 nF
i_{CES}	$V_{CE} = 1200 \text{ V}, V_{GE} = 0 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ.	3 mA
	$V_{CE} = 1200 \text{ V}, V_{GE} = 0 \text{ V}, t_{vj} = 125^\circ\text{C}$	typ.	15 mA
i_{GES}	$V_{GE} = 20 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ.	6 μA
	$V_{GE} = 20 \text{ V}, t_{vj} = 25^\circ\text{C}$	max.	60 μA
i_{EGS}	$V_{EG} = 20 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ.	6 μA
	$V_{EG} = 20 \text{ V}, t_{vj} = 25^\circ\text{C}$	max.	60 μA
t_{on}	$i_{CM} = 600 \text{ A}, V_{CE} = 600 \text{ V}, V_{LF} = 15 \text{ V}, R_G = 2 \Omega, t_{vj} = 25^\circ\text{C}$	typ.	0,4 μs
	$i_{CM} = 600 \text{ A}, V_{CE} = 600 \text{ V}, V_{LF} = 15 \text{ V}, R_G = 2 \Omega, t_{vj} = 125^\circ\text{C}$	typ.	0,6 μs
t_s	$i_{CM} = 600 \text{ A}, V_{CE} = 600 \text{ V}, V_{LF} = 15 \text{ V}, V_{LR} = 15 \text{ V}, R_G = 2 \Omega, t_{vj} = 25^\circ\text{C}$	typ.	0,6 μs
	$i_{CM} = 600 \text{ A}, V_{CE} = 600 \text{ V}, V_{LF} = 15 \text{ V}, V_{LR} = 15 \text{ V}, R_G = 2 \Omega, t_{vj} = 125^\circ\text{C}$	typ.	0,8 μs
t_f	$i_{CM} = 600 \text{ A}, V_{CE} = 600 \text{ V}, V_{LF} = 15 \text{ V}, V_{LR} = 15 \text{ V}, R_G = 2 \Omega, t_{vj} = 25^\circ\text{C}$	typ.	0,2 μs
	$i_{CM} = 600 \text{ A}, V_{CE} = 600 \text{ V}, V_{LF} = 15 \text{ V}, V_{LR} = 15 \text{ V}, R_G = 2 \Omega, t_{vj} = 125^\circ\text{C}$	typ.	0,3 μs

Bedingungen für den Kurzschlußschutz	Conditions for protection against short circuits
$t_{fg} = 10 \mu\text{s}, V_{LF} = V_{LR} = 15 \text{ V}, R_G = 2 \Omega, t_{vj} = 125^\circ\text{C}$	$V_{CC} = 750 \text{ V}, V_{CEM} = 1000 \text{ V}, i_{CMK1} \approx 6800 \text{ A}, i_{CMK2} \approx 4700 \text{ A}$

Thermische Eigenschaften		Thermal properties	
R_{thJC}	DC, pro Baustein / per module	0,035	$^\circ\text{C/W}$
R_{thCK}	pro Baustein / per module		$^\circ\text{C/W}$
$t_{vj \text{ max}}$		150	$^\circ\text{C}$
$t_{vj \text{ op}}$		- 40 / + 150	$^\circ\text{C}$
t_{stg}		- 40 / + 125	$^\circ\text{C}$

Inversdiode	Inverse diode
Elektrische Eigenschaften	Electrical properties

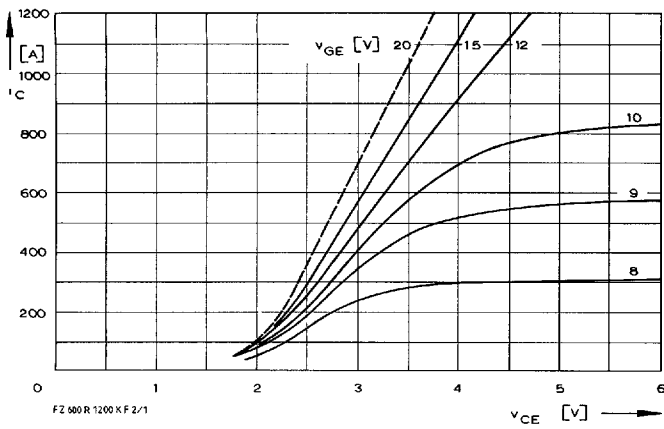
Höchstzulässige Werte	Maximum rated values
$I_{F(max)}$	600 A
I_{FRM}	1200 A

Charakteristische Werte	Characteristic values
V_F	$i_F = 600 \text{ A}, V_{GE} = 0 \text{ V}, t_{vj} = 25^\circ\text{C}$ typ. 2,3 V
	$i_F = 600 \text{ A}, V_{GE} = 0 \text{ V}, t_{vj} = 25^\circ\text{C}$ max. 3,2 V
I_{RM}	$i_{FM} = 600 \text{ A}, -di_F/dt = 1 \text{ kA}/\mu\text{s}$ typ. 110 A
	$V_{GE} = 10 \text{ V}, t_{vj} = 25^\circ\text{C}$ typ. 200 A
Q_r	$i_{FM} = 600 \text{ A}, -di_F/dt = 1 \text{ kA}/\mu\text{s}$ typ. 12 μAs
	$V_{GE} = 10 \text{ V}, t_{vj} = 25^\circ\text{C}$ typ. 40 μAs
	$i_{FM} = 600 \text{ A}, -di_F/dt = 1 \text{ kA}/\mu\text{s}$ typ. 40 μAs
	$V_{GE} = 10 \text{ V}, t_{vj} = 125^\circ\text{C}$

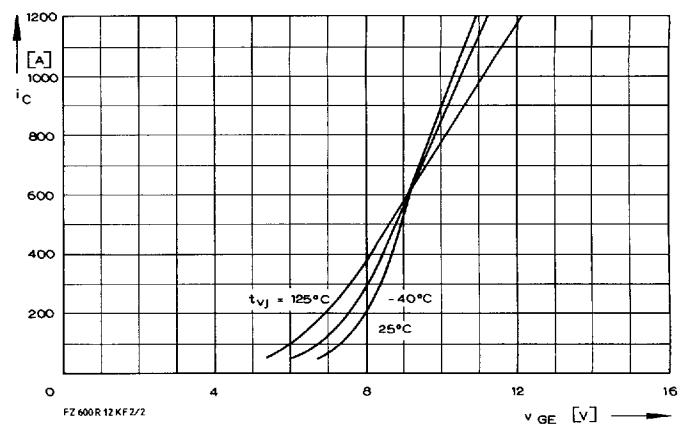
Thermische Eigenschaften		Thermal properties	
R_{thJC}	DC, pro Baustein / per module	0,125	$^\circ\text{C/W}$
R_{thCK}	pro Baustein / per module		$^\circ\text{C/W}$
$t_{vj \text{ max}}$		125	$^\circ\text{C}$
$t_{vj \text{ op}}$		- 40 / + 125	$^\circ\text{C}$
t_{stg}		- 40 / + 125	$^\circ\text{C}$

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

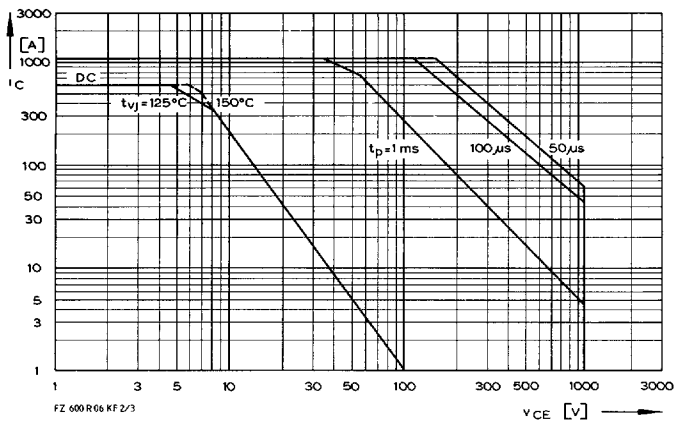
Mechanische Eigenschaften	Mechanical properties
G	540 g
M 1	3 Nm
M 2	terminals M 4 / M 6 2 Nm / 3 Nm
Maßbild	outline
Seite 185, Nr. 15	page 185, no. 15



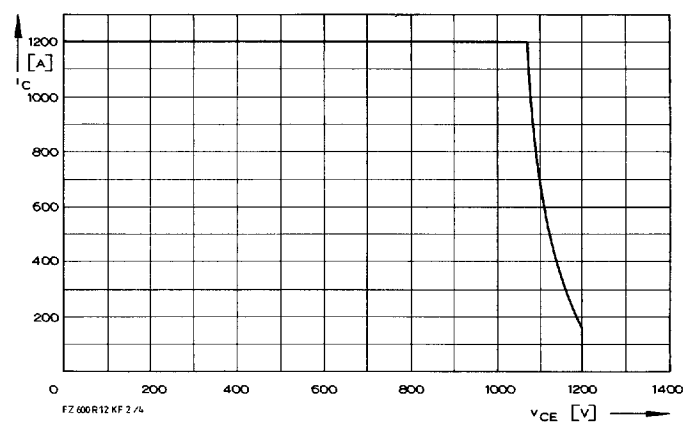
1 Kollektor-Emitter-Spannung im Sättigungsbereich (typisch).
Collector-emitter-voltage in saturation region (typical).
 $t_{vj} = 25^\circ\text{C}$



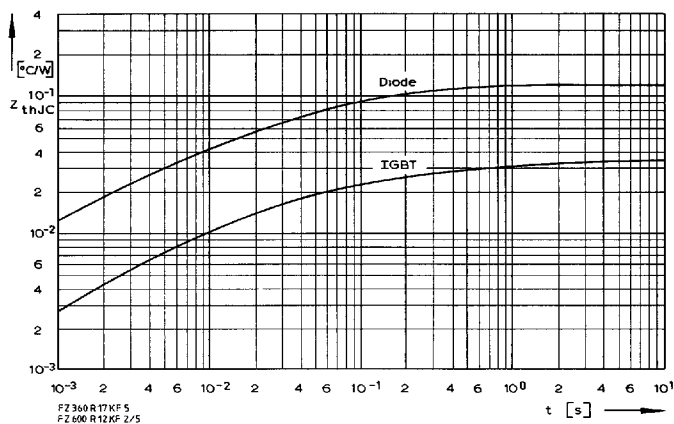
2 Übertragungscharakteristik (typisch).
Transfer characteristic (typical).
 $v_{CE} = 20\text{ V}$



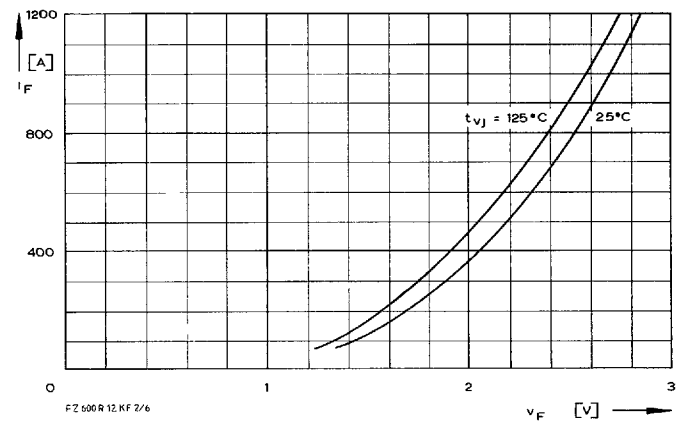
3 Vorwärts-Arbeitsbereich FBSOA (Einzelimpuls, nicht periodisch).
Forward biased safe operating area (single pulse, non repetitive).
 $t_C = 25^\circ\text{C}$



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



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



6 Durchlaßkennlinie der Inversdiode (typisch).
Forward characteristic of the inverse diode (typical)
 $t_{vj} = 25^\circ\text{C}$, $t_{vj} = 125^\circ\text{C}$