

Transistor		Transistor	
Elektrische Eigenschaften		Electrical properties	
Höchstzulässige Werte		Maximum rated values	
$V_{CES}$		1200	V
$I_C$		1200	A
$I_{CRM}$	$t_p = 1 \text{ ms}$	2400	A
$P_{tot}$	$t_C = 25^\circ\text{C}$	7800	W
$V_{GE}$		20	V
$V_{EG}$		20	V

Charakteristische Werte		Characteristic values	
$V_{CE \text{ sat}}$	$i_{CM} = 1,2 \text{ kA}, V_{GE} = 15 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ.	3,0 V
	$i_{CM} = 1,2 \text{ kA}, V_{GE} = 15 \text{ V}, t_{vj} = 125^\circ\text{C}$	max.	3,8 V
$V_{GE (th)}$	$V_{CE} = 5 \text{ V}, i_C = 80 \text{ mA}, t_{vj} = 25^\circ\text{C}$	min.	4,5 V
	$V_{CE} = 5 \text{ V}, i_C = 80 \text{ mA}, t_{vj} = 25^\circ\text{C}$	max.	6,5 V
$C_{ies}$	$V_{CE} = 25 \text{ V}, V_{GE} = 0 \text{ V}, f_o = 1 \text{ MHz}, t_{vj} = 25^\circ\text{C}$	typ.	180 nF
	$V_{CE} = 1200 \text{ V}, V_{GE} = 0 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ.	5 mA
$i_{CES}$	$V_{CE} = 1200 \text{ V}, V_{GE} = 0 \text{ V}, t_{vj} = 125^\circ\text{C}$	typ.	20 mA
	$V_{CE} = 1200 \text{ V}, V_{GE} = 0 \text{ V}, t_{vj} = 125^\circ\text{C}$	typ.	40 nA
$i_{GES}$	$V_{GE} = 20 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ.	40 nA
	$V_{GE} = 20 \text{ V}, t_{vj} = 25^\circ\text{C}$	max.	400 nA
$i_{EGS}$	$V_{EG} = 20 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ.	40 nA
	$V_{EG} = 20 \text{ V}, t_{vj} = 25^\circ\text{C}$	max.	400 nA
$t_{on}$	$i_{CM} = 1,2 \text{ kA}, V_{CE} = 600 \text{ V}, V_{LF} = 15 \text{ V}, R_G = 1,8 \Omega, t_{vj} = 25^\circ\text{C}$	typ.	0,7 $\mu\text{s}$
	$i_{CM} = 1,2 \text{ kA}, V_{CE} = 600 \text{ V}, V_{LF} = 15 \text{ V}, R_G = 1,8 \Omega, t_{vj} = 125^\circ\text{C}$	typ.	0,8 $\mu\text{s}$
$t_s$	$i_{CM} = 1,2 \text{ kA}, V_{CE} = 600 \text{ V}, V_{LF} = 15 \text{ V}, V_{LR} = 15 \text{ V}, R_G = 1,8 \Omega, t_{vj} = 25^\circ\text{C}$	typ.	0,9 $\mu\text{s}$
	$i_{CM} = 1,2 \text{ kA}, V_{CE} = 600 \text{ V}, V_{LF} = 15 \text{ V}, V_{LR} = 15 \text{ V}, R_G = 1,8 \Omega, t_{vj} = 125^\circ\text{C}$	typ.	1,0 $\mu\text{s}$
$t_f$	$i_{CM} = 1,2 \text{ kA}, V_{CE} = 600 \text{ V}, V_{LF} = 15 \text{ V}, V_{LR} = 15 \text{ V}, R_G = 1,8 \Omega, t_{vj} = 25^\circ\text{C}$	typ.	0,25 $\mu\text{s}$
	$i_{CM} = 1,2 \text{ kA}, V_{CE} = 600 \text{ V}, V_{LF} = 15 \text{ V}, V_{LR} = 15 \text{ V}, R_G = 1,8 \Omega, t_{vj} = 125^\circ\text{C}$	typ.	0,30 $\mu\text{s}$

Bedingungen für den Kurzschlußschutz	Conditions for protection against short circuits
$t_{fg} = 10 \mu\text{s}$	$V_{CC} = 750 \text{ V}$
$V_{LF} = V_{LR} = 15 \text{ V}$	$V_{CEM} = 900 \text{ V}$
$R_G = 1,8 \Omega$	$i_{CMK 1} \approx 12000 \text{ A}$
$t_{vj} = 125^\circ\text{C}$	$i_{CMK 2} \approx 9000 \text{ A}$

Unabhängig davon gilt bei abweichenden Bedingungen  
with regard to other conditions  
 $V_{CEM} = V_{CES} - 15nH \times |di_C/dt|$

Thermische Eigenschaften	Thermal properties
$R_{thJC}$ DC, pro Baustein / per module	0,016 $^\circ\text{C/W}$
$R_{thCK}$ pro Baustein / per module	0,008 $^\circ\text{C/W}$
$t_{vj \text{ max}}$	150 $^\circ\text{C}$
$t_{vj \text{ op}}$	- 40 / + 150 $^\circ\text{C}$
$t_{stg}$	- 40 / + 125 $^\circ\text{C}$

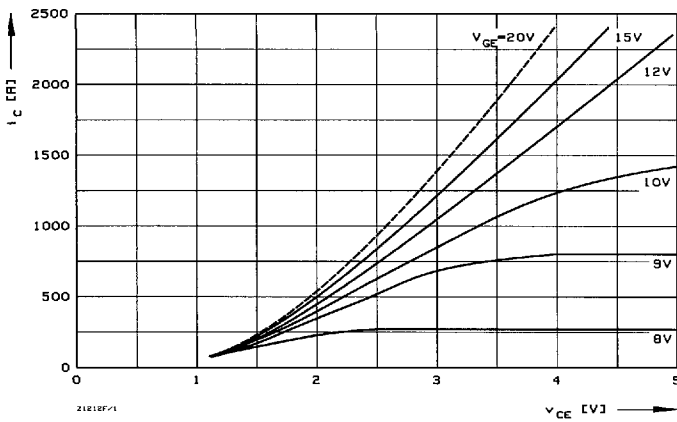
Inversdiode	Inverse diode
Elektrische Eigenschaften	Electrical properties
Höchstzulässige Werte	Maximum rated values
$I_{F(max)}$	1200 A
$I_{FRM}$ $t_p = 1 \text{ ms}$	2400 A

Charakteristische Werte	Characteristic values	
$V_F$	$i_F = 1,2 \text{ kA}, V_{GE} = 0 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ. 2,5 V
	$i_F = 1,2 \text{ kA}, V_{GE} = 0 \text{ V}, t_{vj} = 125^\circ\text{C}$	typ. 2,1 V
$I_{RM}$	$i_{FM} = 1,2 \text{ kA}, -di_F/dt = 1,2 \text{ kA}/\mu\text{s}$	typ. 135 A
	$V_{EG} = 10 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ. 330 A
$Q_r$	$i_{FM} = 1,2 \text{ kA}, -di_F/dt = 1,2 \text{ kA}/\mu\text{s}$	typ. 330 A
	$V_{EG} = 10 \text{ V}, t_{vj} = 125^\circ\text{C}$	typ. 19 $\mu\text{As}$
$Q_r$	$i_{FM} = 1,2 \text{ kA}, -di_F/dt = 1,2 \text{ kA}/\mu\text{s}$	typ. 85 $\mu\text{As}$
	$V_{EG} = 10 \text{ V}, t_{vj} = 125^\circ\text{C}$	

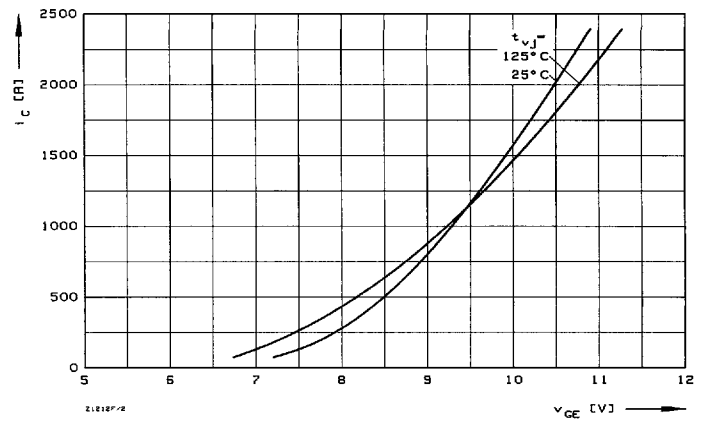
Thermische Eigenschaften	Thermal properties
$R_{thJC}$ DC, pro Baustein / per module	0,040 $^\circ\text{C/W}$
$R_{thCK}$ pro Baustein / per module	0,008 $^\circ\text{C/W}$
$t_{vj \text{ max}}$	150 $^\circ\text{C}$
$t_{vj \text{ op}}$	- 40 / + 125 $^\circ\text{C}$
$t_{stg}$	- 40 / + 125 $^\circ\text{C}$

Innere Isolation	Internal insulation
Isoliermaterial: $\text{Al}_2\text{O}_3$	Insulating material: $\text{Al}_2\text{O}_3$
$V_{ISOL}$ RMS (f=50 Hz, t=1 min)	3,4 kV

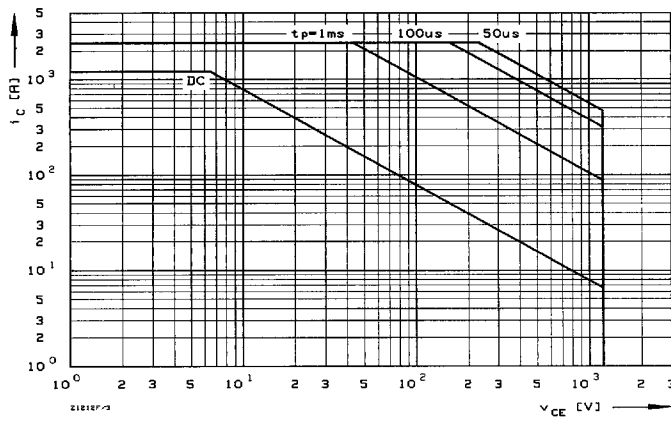
Mechanische Eigenschaften	Mechanical properties
G	1500 g
M 1	3 Nm
M 2	terminals M 4 / M 8 2 Nm / 8 ... 10 Nm
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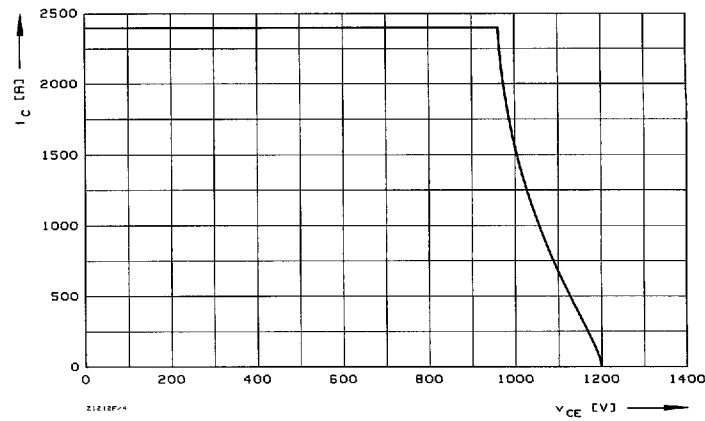
1 Kollektor-Emitter-Spannung im Sättigungsbereich (typisch).  
Collector-emitter-voltage in saturation region (typical).  
 $t_{vj} = 25^\circ\text{C}$



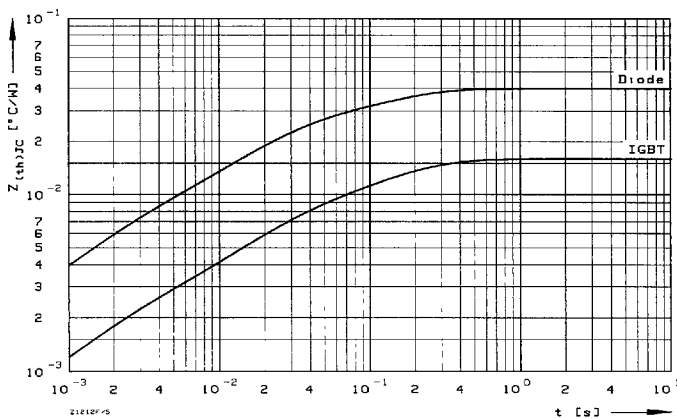
2 Übertragungscharakteristik (typisch).  
Transfer characteristic (typical).  
 $V_{CE} = 20\text{ V}$



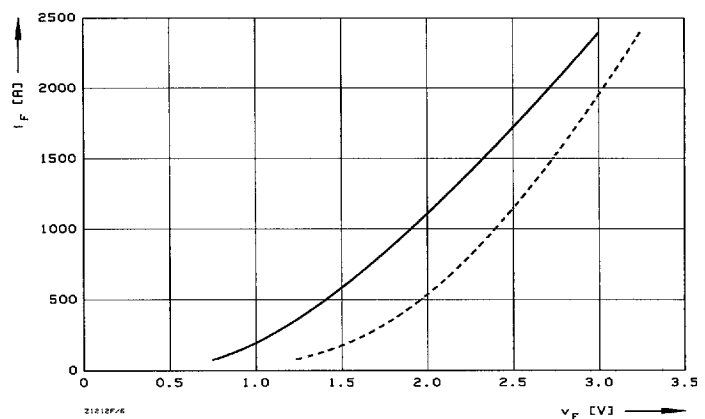
3 Vorwärts-Arbeitsbereich FBSOA (Einzelimpuls, nicht periodisch).  
Forward biased safe operating area (single pulse, non repetitive).  
 $t_C = 25^\circ\text{C}$



4 Rückwärts-Arbeitsbereich RBSOA.  
Reverse biased safe operating area.  
 $t_{vj} = 125^\circ\text{C}$ ,  $V_{LF} = V_{LR} = 15\text{ V}$ ,  $R_G = 1,8\ \Omega$



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).  
---  $t_{vj} = 25^\circ\text{C}$ , —  $t_{vj} = 125^\circ\text{C}$ ,  $V_{GE} = 0\text{ V}$