

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
$V_{GE} \text{ (th)}$	$V_{CE} = 5 \text{ V}, i_C = 80 \text{ mA}, t_{vj} = 25^\circ\text{C}$ 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
i_{CES}	$V_{CE} = 1200 \text{ V}, V_{GE} = 0 \text{ V}, t_{vj} = 25^\circ\text{C}$ typ.	5	mA
	$V_{CE} = 1200 \text{ V}, V_{GE} = 0 \text{ V}, t_{vj} = 125^\circ\text{C}$ typ.	20	mA
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	μs
	$i_{CM} = 1,2 \text{ kA}, V_{CE} = 600 \text{ V}, V_{LF} = 15 \text{ V}, R_G = 1,8 \Omega, t_{vj} = 125^\circ\text{C}$ typ.	0,8	μs
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	μs
	$i_{CM} = 1,2 \text{ kA}, V_{CE} = 600 \text{ V}, V_{LF} = 15 \text{ V}, V_{LR} = 15 \text{ V}, R_G = 1,8 \Omega, t_{vj} = 125^\circ\text{C}$ typ.	1,0	μs
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	μs
	$i_{CM} = 1,2 \text{ kA}, V_{CE} = 600 \text{ V}, V_{LF} = 15 \text{ V}, V_{LR} = 15 \text{ V}, R_G = 1,8 \Omega, t_{vj} = 125^\circ\text{C}$ typ.	0,30	μs

Bedingungen für den Kurzschlußschutz	Conditions for protection against short circuits
$t_{fg} = 10 \mu\text{s}, V_{LF} = V_{LR} = 15 \text{ V}, R_G = 1,8 \Omega, t_{vj} = 125^\circ\text{C}$	$V_{CC} = 750 \text{ V}, V_{CEM} = 900 \text{ V}, i_{CMK1} \approx 12000 \text{ A}, i_{CMK2} \approx 9000 \text{ A}$

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

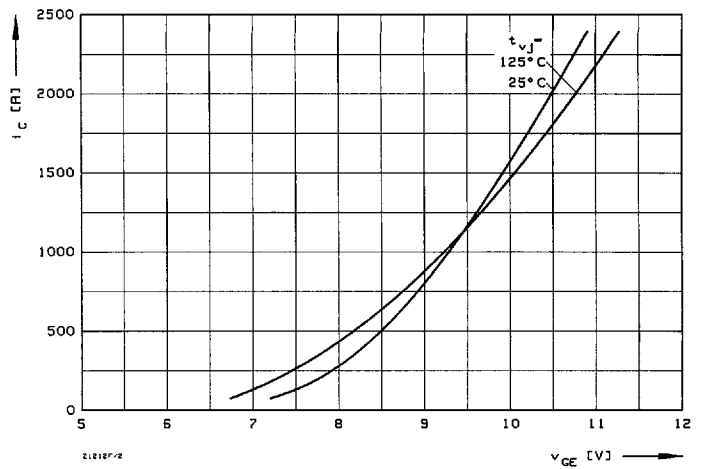
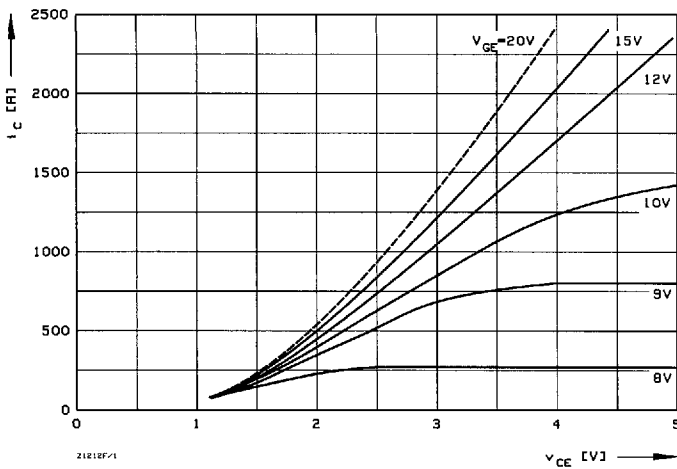
Charakteristische Werte		Characteristic values	
V_F	$i_F = 1,2 \text{ kA}, V_{GE} = 0 \text{ V}, t_{vj} = 25^\circ\text{C}$ typ.	2,5	V
	$i_F = 1,2 \text{ kA}, V_{GE} = 0 \text{ V}, t_{vj} = 125^\circ\text{C}$ typ.	2,1	V
I_{RM}	$i_{FM} = 1,2 \text{ kA}, -di_F/dt = 1,2 \text{ kA}/\mu\text{s}, V_{EG} =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

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: Al_2O_3 V_{ISOL} RMS (f=50 Hz, t=1 min)	Insulating material: Al_2O_3 3,4 kV

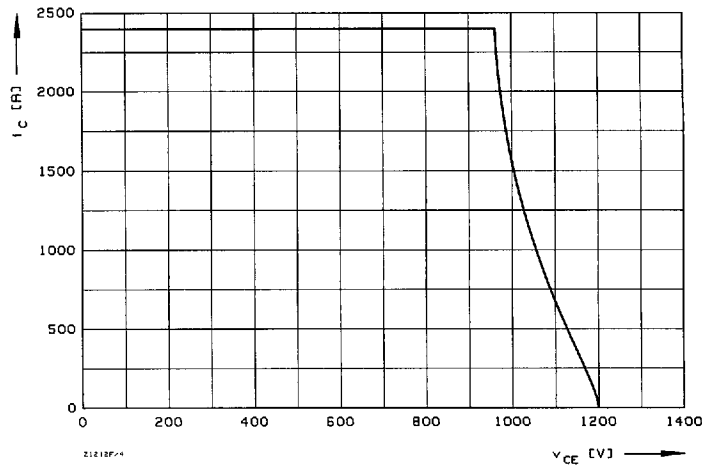
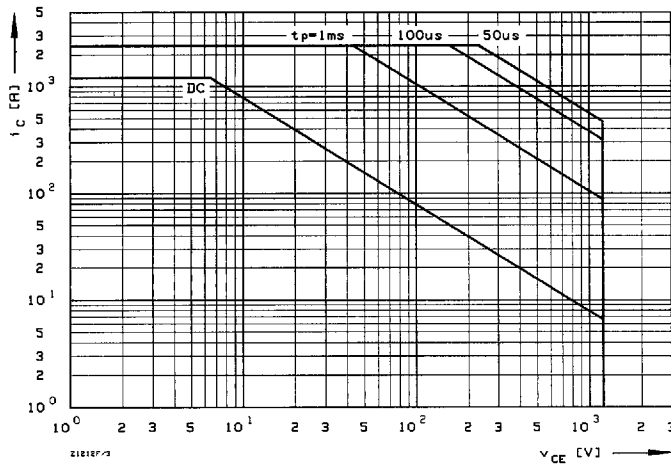
Mechanische Eigenschaften		Mechanical properties	
G		1500	g
M 1		3	Nm
M 2	terminals M 4 / M 8	2 Nm / 8 ... 10	Nm

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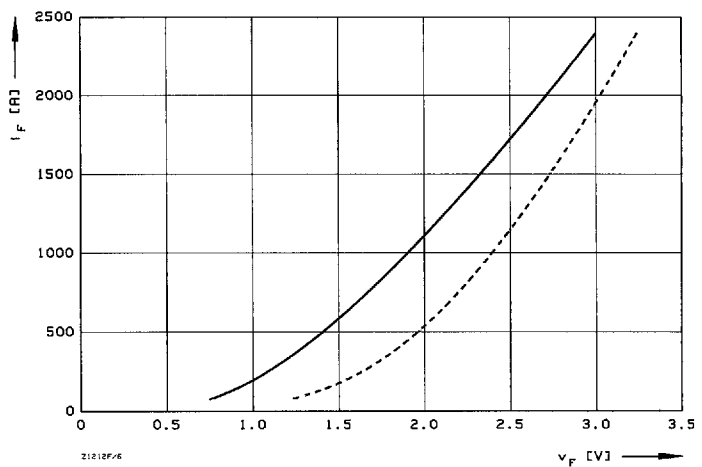
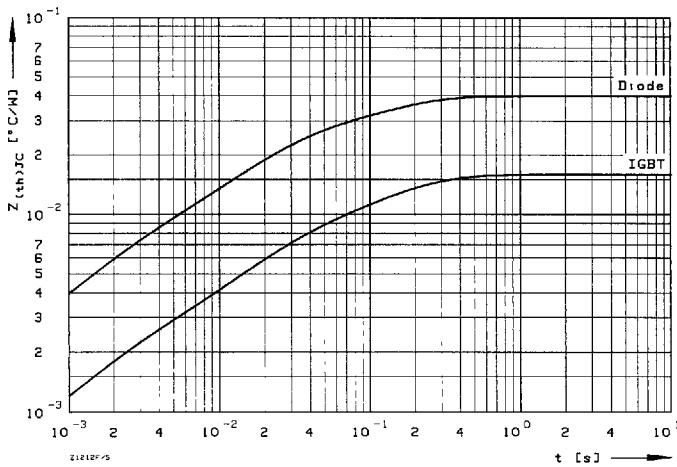
1 Kollektor-Emitter-Spannung im Sättigungsbereich (typisch).
Collector-emitter-voltage in saturation region (typical).
 $t_{vj} = 25^\circ\text{C}$

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