

Transistor	Transistor
Elektrische Eigenschaften	Electrical properties
Höchstzulässige Werte	Maximum rated values
V _{CES}	1200 V
I _C	1200 A
I _{CRM} t _p = 1 ms	2400 A
P _{tot} t _C = 25°C	7800 W
V _{GE}	20 V
V _{EG}	20 V

Charakteristische Werte	Characteristic values
V _{CE sat}	i _{CM} = 1,2 kA, v _{GE} = 15 V, t _{vj} = 25°C typ. 3,0 V
	i _{CM} = 1,2 kA, v _{GE} = 15 V, t _{vj} = 125°C max. 3,8 V
V _{GE (th)}	v _{CE} = 5 V, i _C = 80 mA, t _{vj} = 25°C min. 4,5 V
	v _{CE} = 5 V, i _C = 80 mA, t _{vj} = 25°C max. 6,5 V
C _{ies}	v _{CE} = 25 V, v _{GE} = 0 V, f _o = 1 MHz, t _{vj} = 25°C typ. 180 nF
i _{CES}	v _{CE} = 1200 V, v _{GE} = 0 V, t _{vj} = 25°C typ. 5 mA
	v _{CE} = 1200 V, v _{GE} = 0 V, t _{vj} = 125°C typ. 20 mA
i _{GES}	v _{GE} = 20 V, t _{vj} = 25°C, typ. 40 nA
	v _{GE} = 20 V, t _{vj} = 25°C, max. 400 nA
i _{EGS}	v _{EG} = 20 V, t _{vj} = 25°C, typ. 40 nA
	v _{EG} = 20 V, t _{vj} = 25°C, max. 400 nA
t _{on}	i _{CM} = 1,2 kA, v _{CE} = 600 V, v _{LF} = 15 V, R _G = 1,8 Ω, t _{vj} = 25°C typ. 0,7 μs
	i _{CM} = 1,2 kA, v _{CE} = 600 V, v _{LF} = 15 V, R _G = 1,8 Ω, t _{vj} = 125°C typ. 0,8 μs
t _s	i _{CM} = 1,2 kA, v _{CE} = 600 V, v _{LF} = 15 V, v _{LR} = 15 V, R _G = 1,8 Ω, t _{vj} = 25°C typ. 0,9 μs
	i _{CM} = 1,2 kA, v _{CE} = 600 V, v _{LF} = 15 V, v _{LR} = 15 V, R _G = 1,8 Ω, t _{vj} = 125°C typ. 1,0 μs
t _f	i _{CM} = 1,2 kA, v _{CE} = 600 V, v _{LF} = 15 V, v _{LR} = 15 V, R _G = 1,8 Ω, t _{vj} = 25°C typ. 0,25 μs
	i _{CM} = 1,2 kA, v _{CE} = 600 V, v _{LF} = 15 V, v _{LR} = 15 V, R _G = 1,8 Ω, t _{vj} = 125°C typ. 0,30 μs

Bedingungen für den Kurzschlußschutz	Conditions for protection against short circuits
t _{fg} = 10 μs,	V _{CC} = 750 V,
v _{LF} = v _{LR} = 15 V,	v _{CEM} = 900 V,
R _G = 1,8 Ω,	i _{CMK 1} ≈ 12000 A,
t _{vj} = 125°C,	i _{CMK 2} ≈ 9000 A,

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

Thermische Eigenschaften	Thermal properties
R _{thJC}	DC, pro Baustein / per module 0,016 °C/W
R _{thCK}	pro Baustein / per module 0,008 °C/W
t _{vj max}	150 °C
t _{vj op}	- 40 / + 150 °C
t _{stg}	- 40 / + 125 °C

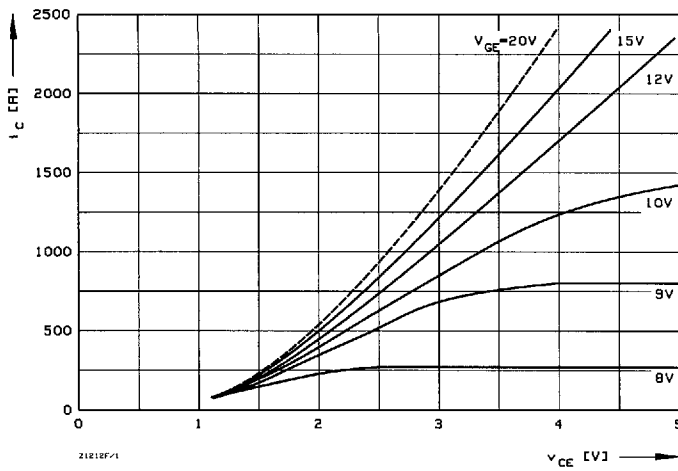
Inversdiode	Inverse diode
Elektrische Eigenschaften	Electrical properties
Höchstzulässige Werte	Maximum rated values
I _{F(max)}	1200 A
I _{FRM} t _p = 1 ms	2400 A

Charakteristische Werte	Characteristic values
v _F	i _F = 1,2 kA, v _{GE} = 0 V, t _{vj} = 25°C typ. 2,5 V
	i _F = 1,2 kA, v _{GE} = 0 V, t _{vj} = 125°C typ. 2,1 V
I _{RM}	i _{FM} = 1,2 kA, -di _F /dt = 1,2 kA/μs v _{EG} = 10 V, t _{vj} = 25°C typ. 135 A
	i _{FM} = 1,2 kA, -di _F /dt = 1,2 kA/μs v _{EG} = 10 V, t _{vj} = 125°C typ. 330 A
Q _r	i _{FM} = 1,2 kA, -di _F /dt = 1,2 kA/μs v _{EG} = 10 V, t _{vj} = 25°C typ. 19 μAs
	i _{FM} = 1,2 kA, -di _F /dt = 1,2 kA/μs v _{EG} = 10 V, t _{vj} = 125°C typ. 85 μAs

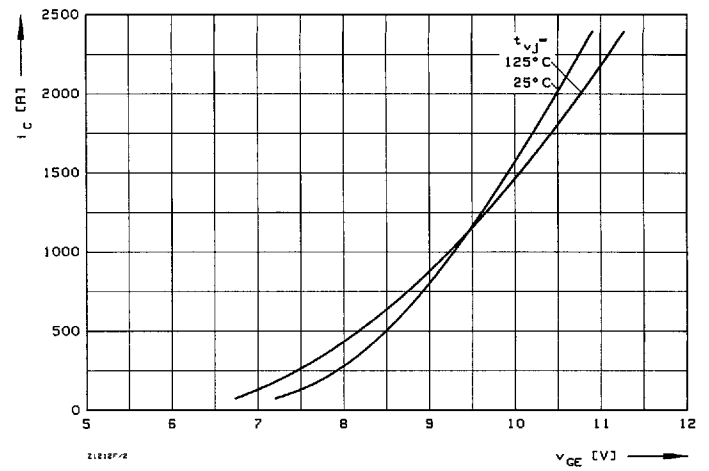
Thermische Eigenschaften	Thermal properties
R _{thJC}	DC, pro Baustein / per module 0,040 °C/W
R _{thCK}	pro Baustein / per module 0,008 °C/W
t _{vj max}	150 °C
t _{vj op}	- 40 / + 125 °C
t _{stg}	- 40 / + 125 °C

Innere Isolation	Internal insulation
Isoliermaterial: Al ₂ O ₃	Insulating material: Al ₂ O ₃
V _{ISOL} RMS (f=50 Hz, t=1 min)	3,4 kV

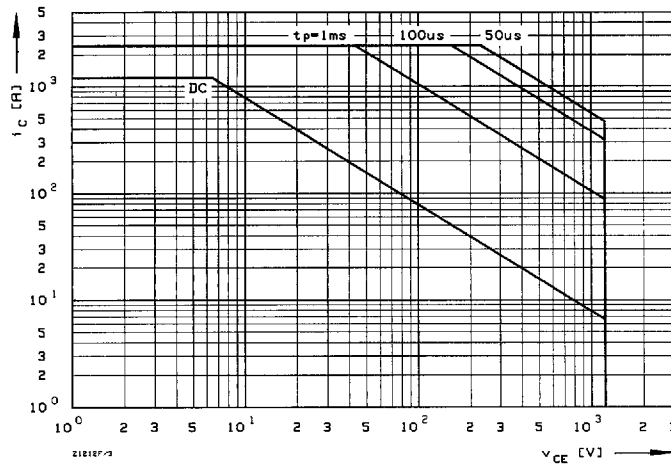
Mechanische Eigenschaften	Mechanical properties
G	1500 g
M 1	3 Nm
M 2	terminals M 4 / M 8 2 Nm / 8 ... 10 Nm
Maßbild	outline
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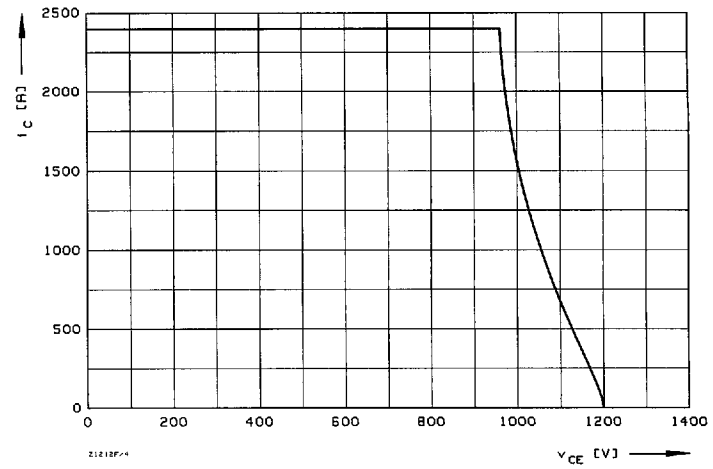
1 Kollektor-Emitter-Spannung im Sättigungsbereich (typisch).
Collector-emitter-voltage in saturation region (typical).
 $t_{vj} = 25^\circ\text{C}$



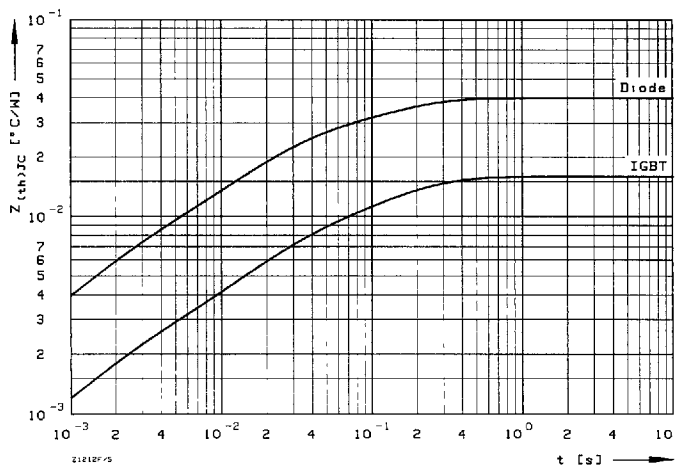
2 Übertragungscharakteristik (typisch).
Transfer characteristic (typical).
 $V_{CE} = 20\text{ V}$



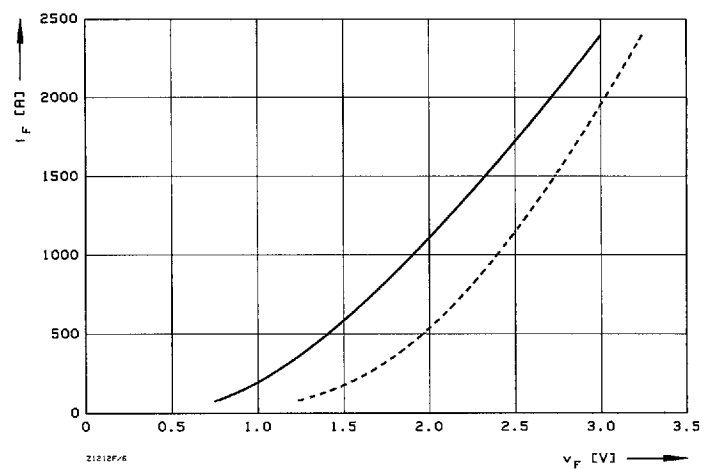
3 Vorwärts-Arbeitsbereich FBSOA (Einzelimpuls, nicht periodisch).
Forward biased safe operating area (single pulse, non repetitive).
 $t_C = 25^\circ\text{C}$



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