

Transistor	Transistor
Elektrische Eigenschaften	Electrical properties
Höchstzulässige Werte	Maximum rated values
V _{CES}	1600 V
I _C	600 A
I _{CRM} t _p = 1 ms	1200 A
P _{tot} t _C = 25°C	3900 W
V _{GE}	20 V
V _{EG}	20 V

Charakteristische Werte	Characteristic values
V _{CE sat} i _{CM} = 600 A, v _{GE} = 15 V, t _{vj} = 25°C	typ. 3,5 V
i _{CM} = 600 A, v _{GE} = 15 V, t _{vj} = 125°C	typ. 4,6 V
v _{GE (th)} v _{CE} = 5 V, i _C = 40 mA, t _{vj} = 25°C	typ. 5,5 V
v _{CE} = v _{GE} , i _C = 40 mA, t _{vj} = 25°C	max. 6,5 V
C _{ies} v _{CE} = 10 V, v _{GE} = 0 V, f _o = 1 MHz, t _{vj} = 25°C	typ. 90 nF
i _{CES} v _{CE} = 1600 V, v _{GE} = 0 V, t _{vj} = 25°C	typ. 8 mA
v _{CE} = 1600 V, v _{GE} = 0 V, t _{vj} = 125°C	typ. 25 mA
i _{GES} v _{GE} = 20 V, t _{vj} = 25°C	typ. 40 µA
v _{GE} = 20 V, t _{vj} = 25°C	max. 400 µA
i _{EGS} v _{EG} = 20 V, t _{vj} = 25°C	typ. 40 µA
v _{EG} = 20 V, t _{vj} = 25°C	max. 400 µA
t _{on} i _{CM} = 600 A, v _{CE} = 800 V, v _{LF} = 15 V, R _G = 10 Ω, t _{vj} = 25°C	typ. 1,1 µs
i _{CM} = 600 A, v _{CE} = 800 V, v _{LF} = 15 V, R _G = 10 Ω, t _{vj} = 125°C	typ. 1,2 µs
t _s i _{CM} = 600 A, v _{CE} = 800 V, v _{LF} = 15 V, v _{LR} = 15 V, R _G = 3,3 Ω, t _{vj} = 25°C	typ. 1,1 µs
i _{CM} = 600 A, v _{CE} = 800 V, v _{LF} = 15 V, v _{LR} = 15 V, R _G = 3,3 Ω, t _{vj} = 125°C	typ. 1,3 µs
t _f i _{CM} = 600 A, v _{CE} = 800 V, v _{LF} = 15 V, v _{LR} = 15 V, R _G = 3,3 Ω, t _{vj} = 25°C	typ. 0,25 µs
i _{CM} = 600 A, v _{CE} = 800 V, v _{LF} = 15 V, v _{LR} = 15 V, R _G = 3,3 Ω, t _{vj} = 125°C	typ. 0,30 µs

Bedingungen für den Kurzschlußschutz	Conditions for protection against short circuits
t _{ig} = 10 µs, v _{LF} = v _{LR} = 15 V, R _{GF} = 10 Ω, R _{GR} = 3,3 Ω, t _{vj} = 125°C,	V _{CC} = 1000 V, V _{CEM} = 1300 V, i _{CMK 1} ≈ 6000 A, i _{CMK 2} ≈ 4500 A,

Unabhängig davon gilt bei abweichenden Bedingungen
with regard to other conditions
V_{CEM} = V_{CES} - 20nH x | di_C/dt |

Thermische Eigenschaften	Thermal properties
R _{thJC} DC, pro Baustein / per module	0,016 °C/W
DC, pro Zweig / per arm	0,032 °C/W
R _{thCK} pro Baustein / per module	0,008 °C/W
pro Zweig / per arm	0,016 °C/W
t _{vj max}	150 °C
t _{vj op}	- 40 / + 150 °C
t _{stg}	- 40 / + 125 °C

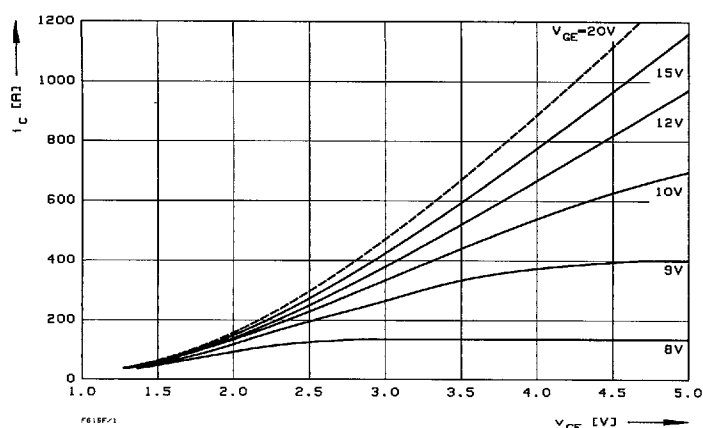
Inversdiode	Inverse diode
Elektrische Eigenschaften	Electrical properties
Höchstzulässige Werte	Maximum rated values
I _{F(max)}	600 A
I _{FRM} t _p = 1 ms	1200 A

Charakteristische Werte	Characteristic values
v _F i _F = 600 A, v _{GE} = 0 V, t _{vj} = 25°C	typ. 4,2 V
i _F = 600 A, v _{GE} = 0 V, t _{vj} = 125°C	typ. 3,8 V
I _{RM} i _{FM} = 600 A, -di _F /dt = 600 A/µs	typ. 110 A
v _{EG} = 10 V, t _{vj} = 25°C	typ. 170 A
i _{FM} = 600 A, -di _F /dt = 600 A/µs	typ. 170 A
v _{EG} = 10 V, t _{vj} = 125°C	typ. 35 µAs
i _{FM} = 600 A, -di _F /dt = 600 A/µs	typ. 110 µAs
v _{EG} = 10 V, t _{vj} = 125°C	

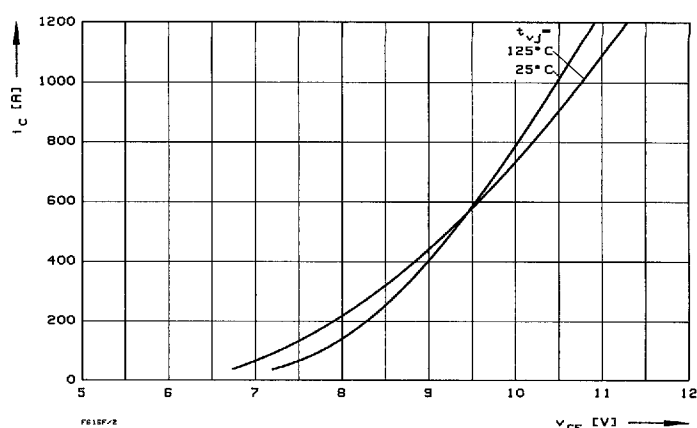
Thermische Eigenschaften	Thermal properties
R _{thJC} DC, pro Baustein / per module	0,040 °C/W
DC, pro Zweig / per arm	0,080 °C/W
R _{thCK} pro Baustein / per module	0,008 °C/W
pro Zweig / per arm	0,016 °C/W
t _{vj max}	150 °C
t _{vj op}	- 40 / + 125 °C
t _{stg}	- 40 / + 125 °C

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

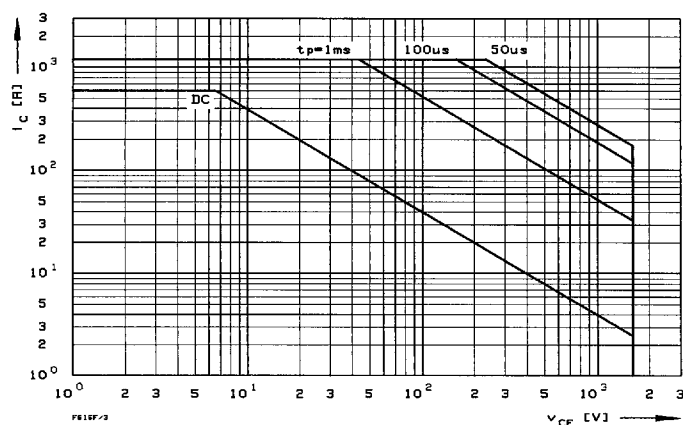
Mechanische Eigenschaften	Mechanical properties
G	ca. 1500 g
M 1	3 Nm
M 2	terminals M 4 / M 8 2 Nm / 8 ... 10 Nm
Maßbild	outline
Seite 185, Nr. 16	page 185, no. 16



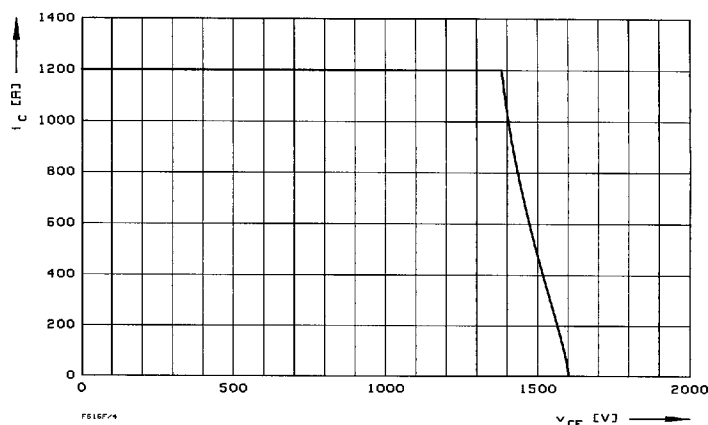
1 Kollektor-Emitter-Spannung im Sättigungsbereich (typisch).
Collector-emitter-voltage in saturation region (typical).
 $t_{vj} = 25^\circ\text{C}$



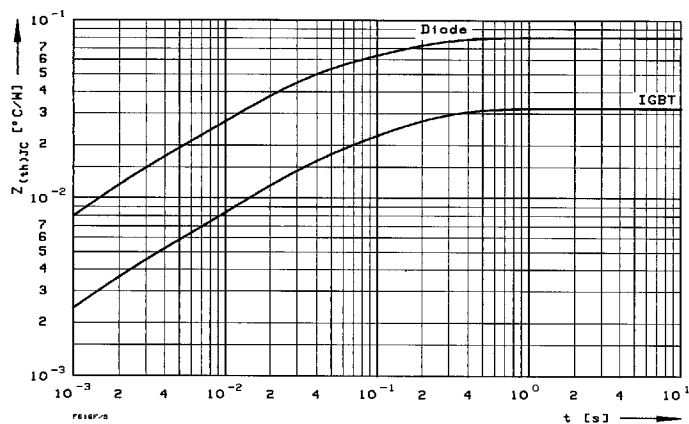
2 Übertragungscharakteristik (typisch).
Transfer characteristic (typical).
 $V_{CE} = 20\text{ V}$



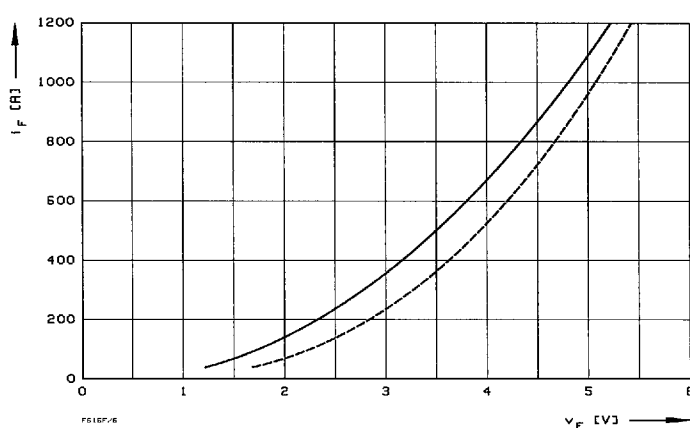
3 Vorwärts-Arbeitsbereich FBSOA (Ezelimpuls, nicht periodisch).
Forward biased safe operating area (single pulse, non repetitive)
 $t_{vj} = 150^\circ\text{C}$, $t_c = 25^\circ\text{C}$



4 Rückwärts-Arbeitsbereich RBSOA.
Reverse biased safe operating area.
 $t_{vj} = 125^\circ\text{C}$, $V_{LF} = V_{LR} = 15\text{ V}$, $R_{GF} = 10\ \Omega$, $R_{GR} = 3,3\ \Omega$



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