

Transistor	Transistor
Elektrische Eigenschaften	Electrical properties
Höchstzulässige Werte	Maximum rated values
V _{CES}	1200 V
I _C	150 A
I _{CRM} t _p = 1 ms	300 A
P _{tot} t _C = 25°C	1140 W
V _{GE}	20 V
V _{EG}	20 V

Charakteristische Werte	Characteristic values
V _{CE sat}	i _{CM} = 150 A, v _{GE} = 15 V, t _{vj} = 25°C typ. 3 V
	i _{CM} = 150 A, v _{GE} = 15 V, t _{vj} = 25°C max. 4 V
V _{GE (th)}	v _{CE} = 5 V, i _C = 150 mA, t _{vj} = 25°C min. 3 V
	v _{CE} = 5 V, i _C = 150 mA, t _{vj} = 25°C max. 6 V
C _{ies}	v _{CE} = 10 V, v _{GE} = 0 V, f _o = 1 MHz, t _{vj} = 25°C typ. 21 nF
i _{CES}	v _{CE} = 1200 V, v _{GE} = 0 V, t _{vj} = 25°C typ. 0,5 mA
	v _{CE} = 1200 V, v _{GE} = 0 V, t _{vj} = 125°C typ. 4 mA
i _{GES}	v _{GE} = 20 V, t _{vj} = 25°C typ. 50 nA
	v _{GE} = 20 V, t _{vj} = 25°C max. 500 nA
i _{EGS}	v _{EG} = 20 V, t _{vj} = 25°C typ. 50 nA
	v _{EG} = 20 V, t _{vj} = 25°C max. 500 nA
t _{on}	i _{CM} = 150 A, v _{CE} = 600 V, v _{LF} = 15 V, R _G = 5,6 Ω, t _{vj} = 25°C typ. 0,4 μs
	i _{CM} = 150 A, v _{CE} = 600 V, v _{LF} = 15 V, R _G = 5,6 Ω, t _{vj} = 125°C typ. 0,6 μs
t _s	i _{CM} = 150 A, v _{CE} = 600 V, v _{LF} = 15 V, v _{LR} = 15 V, R _G = 5,6 Ω, t _{vj} = 25°C typ. 0,7 μs
	i _{CM} = 150 A, v _{CE} = 600 V, v _{LF} = 15 V, v _{LR} = 15 V, R _G = 5,6 Ω, t _{vj} = 125°C typ. 0,8 μs
t _f	i _{CM} = 150 A, v _{CE} = 600 V, v _{LF} = 15 V, v _{LR} = 15 V, R _G = 5,6 Ω, t _{vj} = 25°C typ. 0,2 μs
	i _{CM} = 150 A, v _{CE} = 600 V, v _{LF} = 15 V, v _{LR} = 15 V, R _G = 5,6 Ω, t _{vj} = 125°C typ. 0,25 μs

Bedingungen für den Kurzschlußschutz	Conditions for protection against short circuits
t _{ig} = 10 μs,	V _{CC} = 750 V,
v _{LF} = v _{LR} = 15 V,	v _{CEM} = 1000 V,
R _G = 5,6 Ω,	i _{CMK 1} ≈ 1800 A,
t _{vj} = 125°C,	i _{CMK 2} ≈ 1200 A,

1) Auch als Chopper-Modul lieferbar:
Typenbezeichnung
DF 150 R 12 KF-A
FD 150 R 12 KF-K

Also available as Chopper-Module:
type designation
DF 150 R 12 KF-A
FD 150 R 12 KF-K

Thermische Eigenschaften	Thermal properties
R _{thJC}	DC, pro Baustein / per module 0,055 °C/W
	DC, pro Zweig / per arm 0,11 °C/W
R _{thCK}	pro Baustein / per module 0,03 °C/W
	pro Zweig / per arm 0,06 °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)}	150 A
I _{FRM} t _p = 1 ms	300 A

Charakteristische Werte	Characteristic values
V _F	i _F = 150 A, v _{GE} = 0 V, t _{vj} = 25°C typ. 2 V
	i _F = 150 A, v _{GE} = 0 V, t _{vj} = 25°C max. 3 V
I _{RM}	i _{FM} = 150 A, -di _F /dt = 200 A/μs v _{EG} = 10 V, t _{vj} = 25°C typ. 20 A
	i _{FM} = 150 A, -di _F /dt = 200 A/μs v _{EG} = 10 V, t _{vj} = 125°C typ. 40 A
Q _r	i _{FM} = 150 A, -di _F /dt = 200 A/μs v _{EG} = 10 V, t _{vj} = 25°C typ. 2,8 μAs
	i _{FM} = 150 A, -di _F /dt = 200 A/μs v _{EG} = 10 V, t _{vj} = 125°C typ. 9 μAs

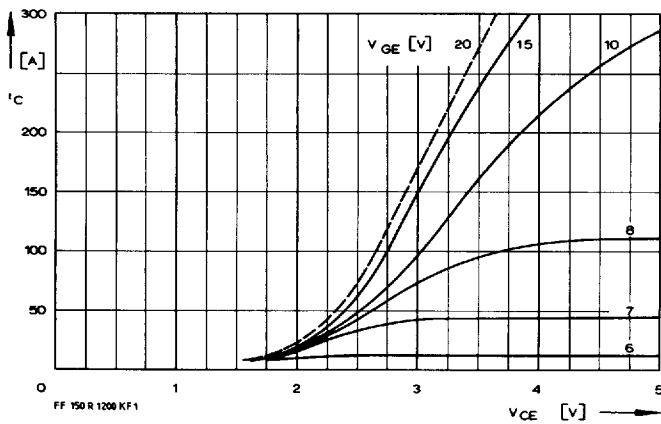
Thermische Eigenschaften	Thermal properties
R _{thJC}	DC, pro Baustein / per module 0,2 °C/W
	DC, pro Zweig / per arm 0,4 °C/W
R _{thCK}	pro Baustein / per module 0,03 °C/W
	pro Zweig / per arm 0,06 °C/W
t _{vj max}	125 °C
t _{vj op}	- 40 / + 125 °C
t _{stg}	- 40 / + 125 °C

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

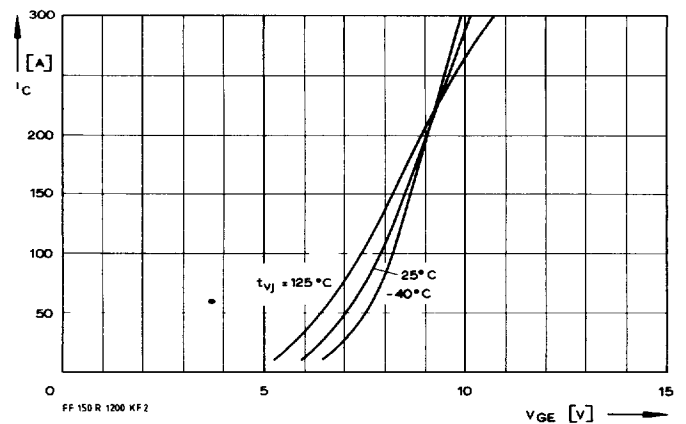
Mechanische Eigenschaften	Mechanical properties
G	445 g
M 1	3 Nm
M 2	3 Nm

Maßbild¹⁾
Seite 182, Nr. 3

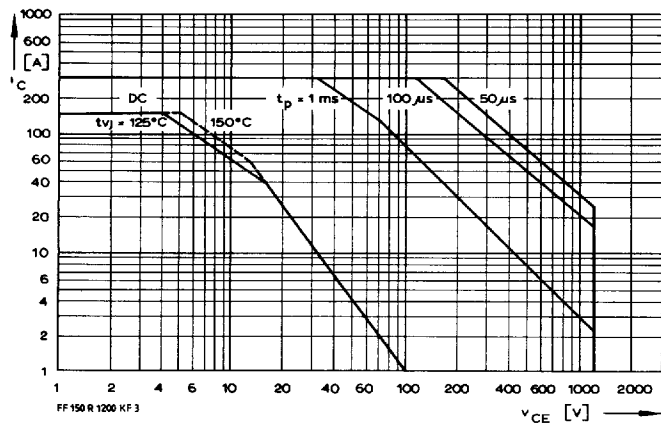
outline¹⁾
page 182, no. 3



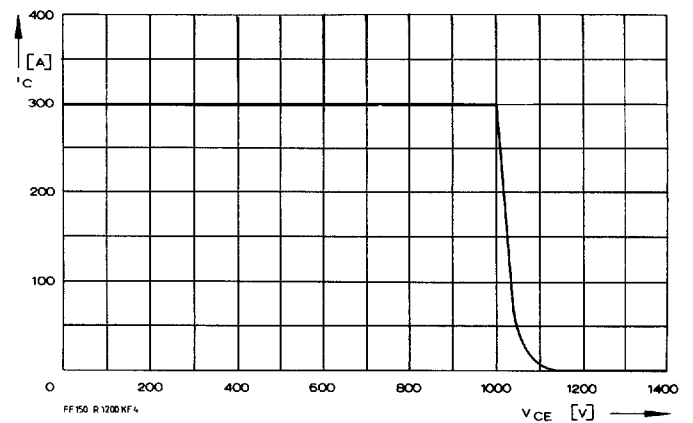
1 Kollektor-Emitter-Spannung im Sättigungsbereich (typisch).
Collector-emitter-voltage in saturation region (typical).
 $t_{vj} = 25^\circ\text{C}$



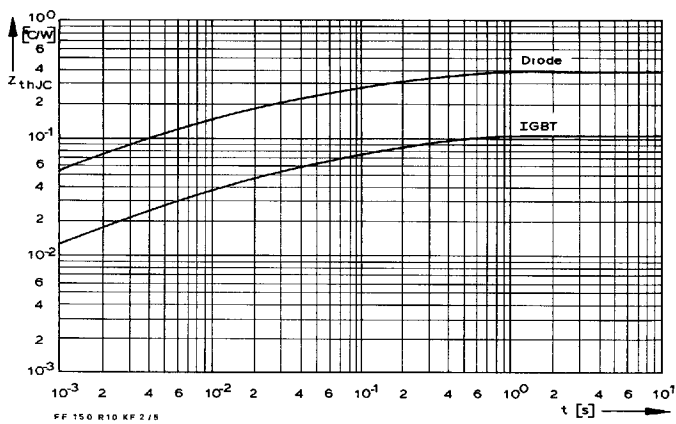
2 Übertragungscharakteristik (typisch).
Transfer characteristic (typical).
 $V_{CE} = 5\text{ V}$



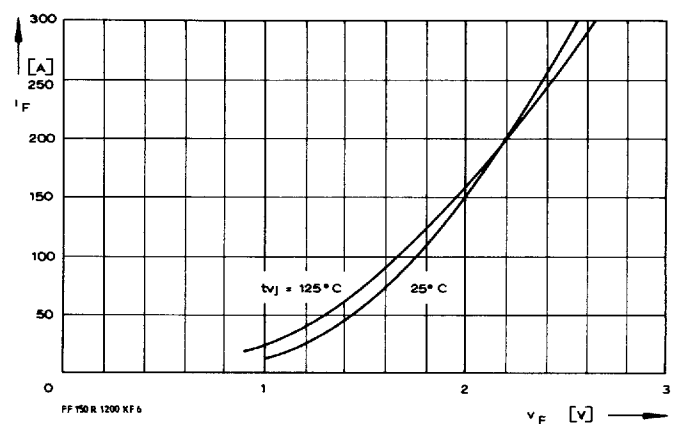
3 Vorwärts-Arbeitsbereich FBSOA (Einzelimpuls, nicht periodisch).
Forward biased safe operating area (single pulse, non repetitive).
 $t_C = 25^\circ\text{C}$



4 Rückwärts-Arbeitsbereich RBSOA.
Reverse biased safe operating area.
 $t_{vj} = 125^\circ\text{C}$, $V_{LF} = V_{LR} = 15\text{ V}$, $R_G = 5,6\ \Omega$



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).
 $V_{GE} = 0\text{ V}$