

F 400 R 06 KF

EUPEC

52E D ■ 3403297 0000258 108 ■ EUPEC

Transistor		Transistor	
Elektrische Eigenschaften		Electrical properties	
Höchstzulässige Werte		Maximum rated values	
V_{CEs}		600	V
I_C		400	A
I_{CRM}	$t_p = 1 \text{ ms}$	800	A
P_{tot}	$t_C = 25^\circ\text{C}$	1400	W
V_{GE}		20	V
V_{EG}		20	V
Charakteristische Werte		Characteristic values	
$V_{CE \text{ sat}}$	$i_{CM} = 400 \text{ A}, V_{GE} = 15 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ. 3	V
	$i_{CM} = 400 \text{ A}, V_{GE} = 15 \text{ V}, t_{vj} = 25^\circ\text{C}$	max. 4	V
$V_{GE} \text{ (th)}$	$V_{CE} = 5 \text{ V}, i_C = 400 \text{ mA}, t_{vj} = 25^\circ\text{C}$	min. 3	V
	$V_{CE} = 5 \text{ V}, i_C = 400 \text{ mA}, t_{vj} = 25^\circ\text{C}$	max. 6	V
C_{GE}	$V_{CE} = 10 \text{ V}, V_{GE} = 0 \text{ V}$		
	$f_o = 1 \text{ MHz}, t_{vj} = 25^\circ\text{C}$	typ. 33	nF
i_{CES}	$V_{CE} = 600 \text{ V}, V_{GE} = 0 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ. 1	mA
	$V_{CE} = 600 \text{ V}, V_{GE} = 0 \text{ V}, t_{vj} = 125^\circ\text{C}$	typ. 8	mA
i_{GES}	$V_{GE} = 20 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ. 50	nA
	$V_{GE} = 20 \text{ V}, t_{vj} = 25^\circ\text{C}$	max. 500	nA
i_{EGS}	$V_{EG} = 20 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ. 50	nA
	$V_{EG} = 20 \text{ V}, t_{vj} = 25^\circ\text{C}$	max. 500	nA
t_{on}	$i_{CM} = 400 \text{ A}, V_{CE} = 300 \text{ V}, V_{LF} = 15 \text{ V}, R_G = 4,7 \Omega, t_{vj} = 25^\circ\text{C}$	typ. 0,4	μs
	$i_{CM} = 400 \text{ A}, V_{CE} = 300 \text{ V}, V_{LF} = 15 \text{ V}, R_G = 4,7 \Omega, t_{vj} = 125^\circ\text{C}$	typ. 0,5	μs
t_s	$i_{CM} = 400 \text{ A}, V_{CE} = 300 \text{ V}, V_{LF} = 15 \text{ V}, V_{LR} = 15 \text{ V}, R_G = 4,7 \Omega, t_{vj} = 25^\circ\text{C}$	typ. 0,4	μs
	$i_{CM} = 400 \text{ A}, V_{CE} = 300 \text{ V}, V_{LF} = 15 \text{ V}, V_{LR} = 15 \text{ V}, R_G = 4,7 \Omega, t_{vj} = 125^\circ\text{C}$	typ. 0,5	μs
t_f	$i_{CM} = 400 \text{ A}, V_{CE} = 300 \text{ V}, V_{LF} = 15 \text{ V}, V_{LR} = 15 \text{ V}, R_G = 4,7 \Omega, t_{vj} = 25^\circ\text{C}$	typ. 0,15	μs
	$i_{CM} = 400 \text{ A}, V_{CE} = 300 \text{ V}, V_{LF} = 15 \text{ V}, V_{LR} = 15 \text{ V}, R_G = 4,7 \Omega, t_{vj} = 125^\circ\text{C}$	typ. 0,25	μs

Bedingungen für den Kurzschlußschutz	Conditions for protection against short circuits
$t_{fg} = 10 \mu\text{s}, V_{LF} = V_{LR} = 15 \text{ V}, R_G = 4,7 \Omega, t_{vj} = 125^\circ\text{C}$	$V_{CC} = 350 \text{ V}, V_{CEM} = 500 \text{ V}, i_{CMK1} \approx 1500 \text{ A}, i_{CMK2} \approx 1200 \text{ A}$

Thermische Eigenschaften		Thermal properties	
R_{thJC}	DC, pro Baustein / per module	0,09	$^\circ\text{C/W}$
R_{thCK}	pro Baustein / per module	0,03	$^\circ\text{C/W}$
t_{vjmax}		150	$^\circ\text{C}$
t_{vjop}		-40 / +150	$^\circ\text{C}$
t_{stg}		-40 / +125	$^\circ\text{C}$

Inversdiode		Inverse diode	
Elektrische Eigenschaften		Electrical properties	
Höchstzulässige Werte		Maximum rated values	
$I_F \text{ (max)}$		400	A
I_{FRM}	$t_p = 1 \text{ ms}$	800	A

Charakteristische Werte		Characteristic values	
V_F	$i_F = 400 \text{ A}, V_{GE} = 0 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ. 2	V
	$i_F = 400 \text{ A}, V_{GE} = 0 \text{ V}, t_{vj} = 25^\circ\text{C}$	max. 2,7	V
I_{RM}	$i_{FM} = 400 \text{ A}, -di_F/dt = 300 \text{ A}/\mu\text{s}$		
	$V_{EG} = 10 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ. 32	A
	$i_{FM} = 400 \text{ A}, -di_F/dt = 300 \text{ A}/\mu\text{s}$		
	$V_{EG} = 10 \text{ V}, t_{vj} = 125^\circ\text{C}$	typ. 60	A
Q_r	$i_{FM} = 400 \text{ A}, -di_F/dt = 300 \text{ A}/\mu\text{s}$		
	$V_{EG} = 10 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ. 9	μAs
	$i_{FM} = 400 \text{ A}, -di_F/dt = 300 \text{ A}/\mu\text{s}$		
	$V_{EG} = 10 \text{ V}, t_{vj} = 125^\circ\text{C}$	typ. 25	μAs

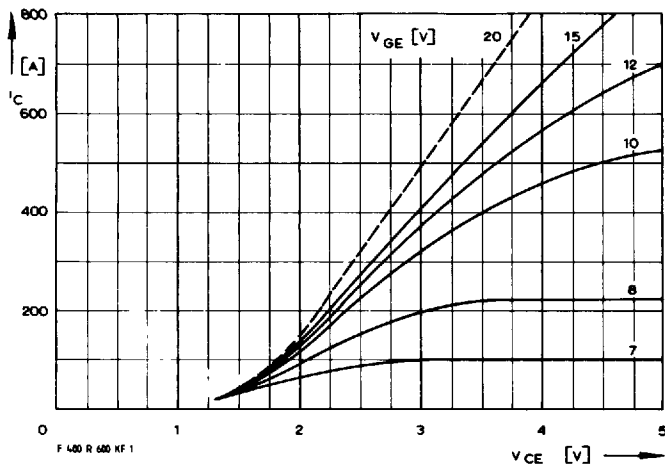
Thermische Eigenschaften		Thermal properties	
R_{thJC}	DC, pro Baustein / per module	0,25	$^\circ\text{C/W}$
	DC, pro Zweig / per arm		$^\circ\text{C/W}$
R_{thCK}	pro Baustein / per module	0,03	$^\circ\text{C/W}$
	pro Zweig / per arm		$^\circ\text{C/W}$
t_{vjmax}		125	$^\circ\text{C}$
t_{vjop}		-40 / +125	$^\circ\text{C}$
t_{stg}		-40 / +125	$^\circ\text{C}$

Innere Isolation		Internal insulation	
Isoliermaterial: AlN		Insulating material: AlN	
V_{ISOL}	RMS	2,5	kV

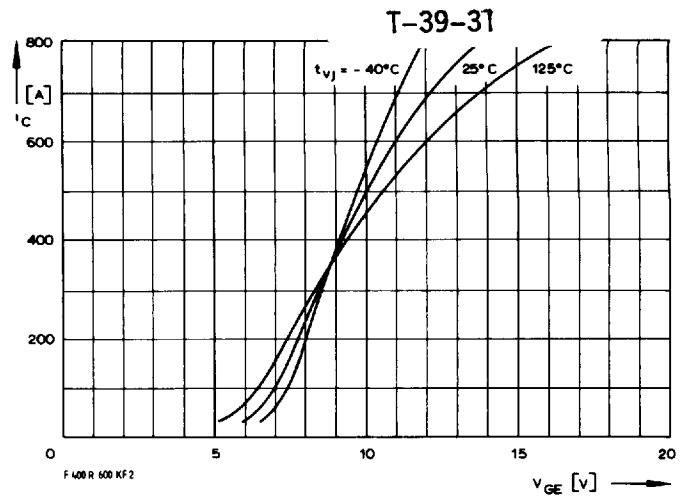
Mechanische Eigenschaften		Mechanical properties	
G		465	g
M1		3	Nm
M2	terminals M4 / M6	2 Nm / 3 Nm	

Maßbild¹⁾ Seite 123, Nr. 5 outline¹⁾ page 123, no. 5

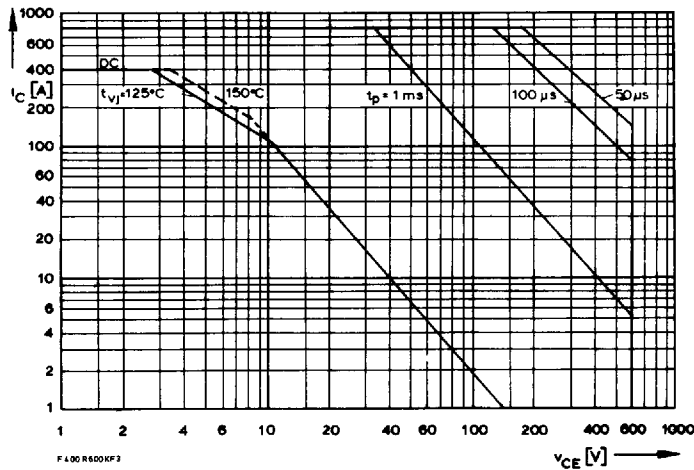
¹⁾ Auch mit umgekehrter Anordnung der Anschlüsse von Kollektor und Emitter lieferbar:
 Typenbezeichnung **F 400 R 06 KF-C**
 Also available with inverted position of collector and emitter terminals:
 type designation **F 400 R 06 KF-C**



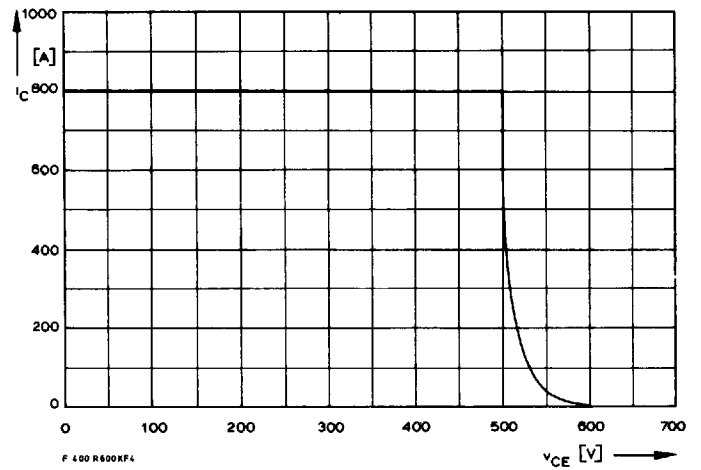
1 Kollektor-Emitter-Spannung im Sättigungsbereich (typisch).
Collector-emitter-voltage in saturation region (typical).
 $t_{vj} = 25^\circ\text{C}$



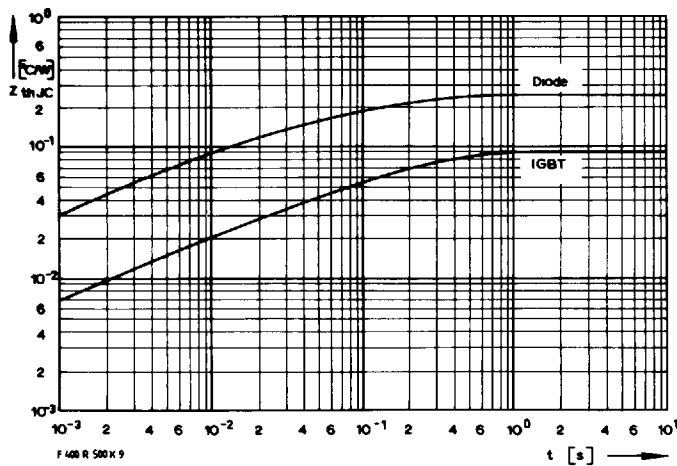
2 Übertragungscharakteristik (typisch).
Transfer characteristic (typical).
 $V_{CE} = 5\text{ V}$



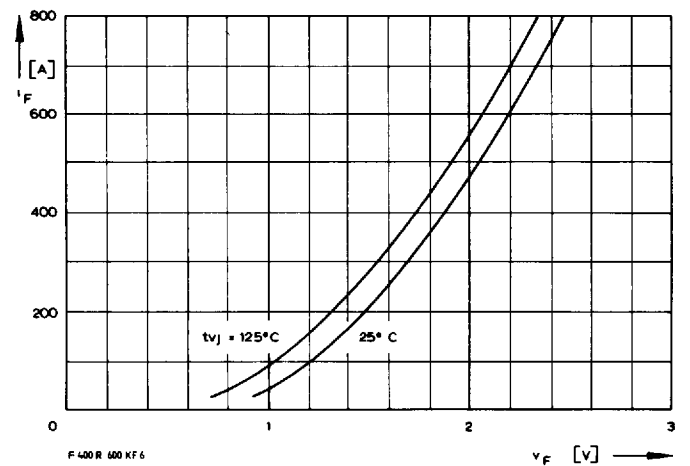
3 Erlaubter Arbeitsbereich in Vorwärtsrichtung (Einzelimpuls, nicht periodisch).
Forward biased safe operating area (single pulse, non repetitive).
 $t_C = 25^\circ\text{C}$



4 Erlaubter Arbeitsbereich in Rückwärtsrichtung.
Reverse biased safe operating area.
 $t_{vj} = 125^\circ\text{C}$, $V_{LF} = V_{LR} = 15\text{ V}$, $R_G = 4,7\ \Omega$



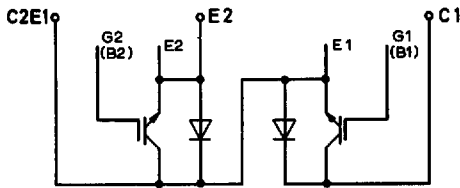
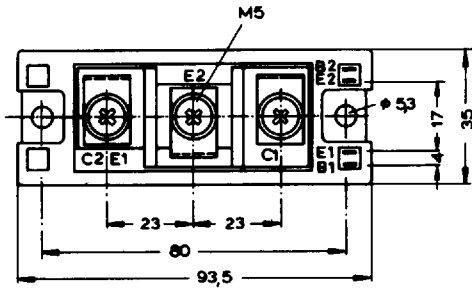
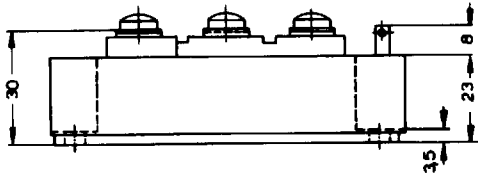
5 Transienter innerer Warmewiderstand je Zweig (DC).
Transient thermal impedance per arm (DC).



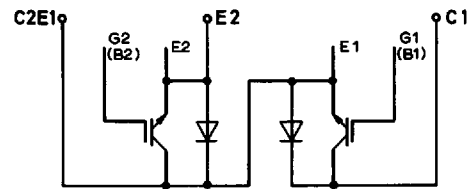
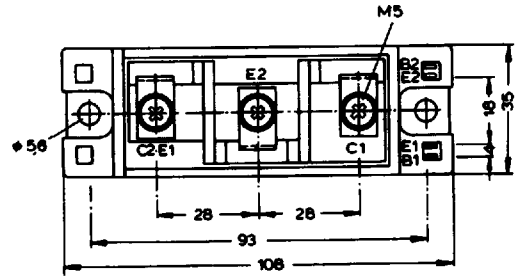
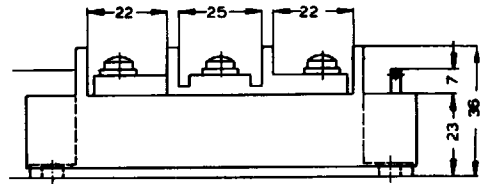
6 Durchlaßkennlinie der Inversdiode (typisch).
Forward characteristic of the inverse diode (typical).
 $V_{GE} = 0\text{ V}$

52E D ■ 3403297 0000298 894 ■ UPEC

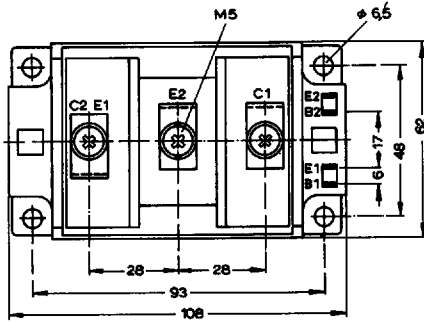
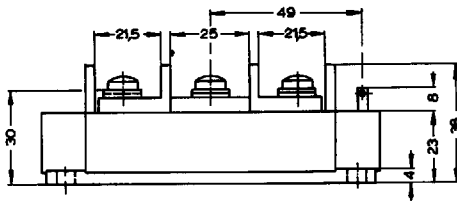
EUPEC



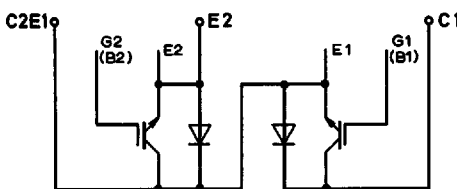
1



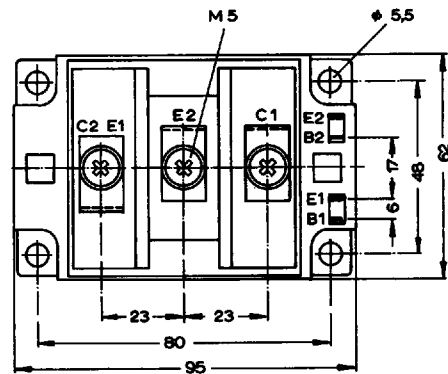
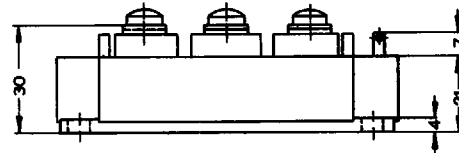
2



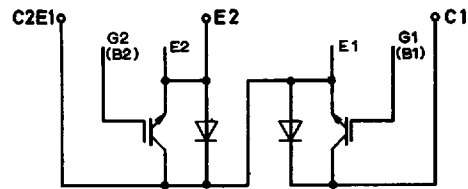
FF 100 R 1000 K



3

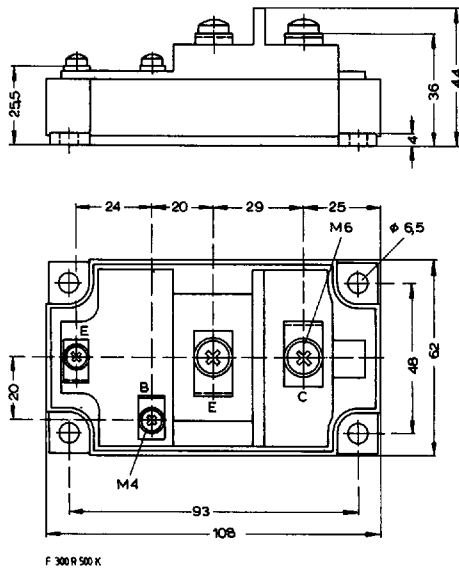


FF 150 R 500 K

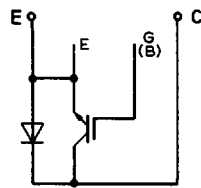


4

T-91-20

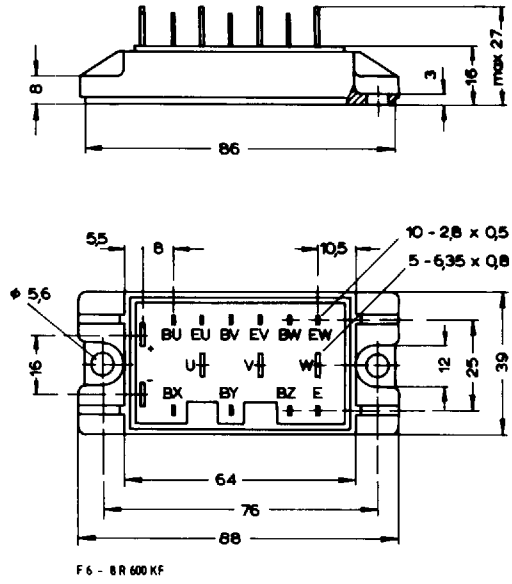


F 300 R 500 K

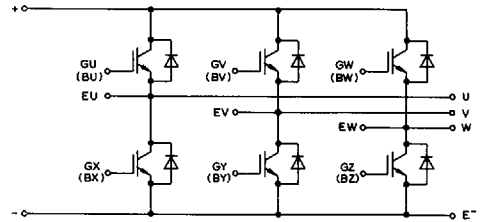


1)

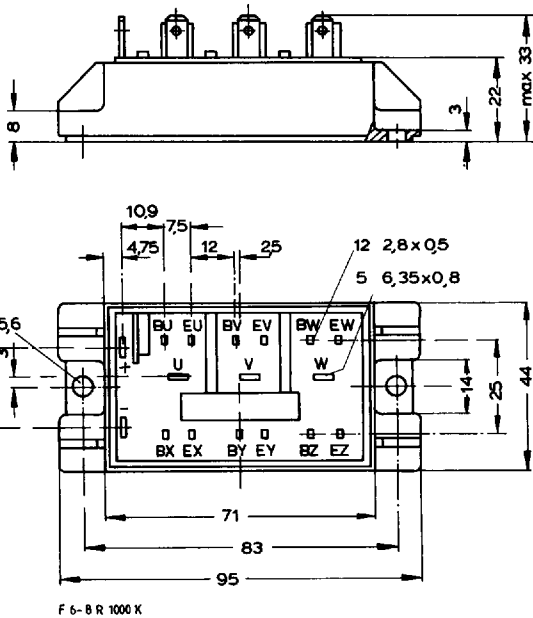
5



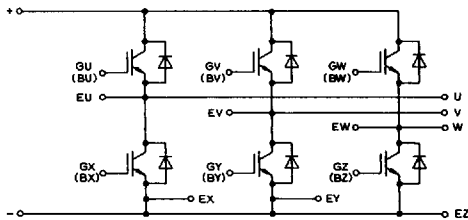
F 6 - 8 R 600 KF



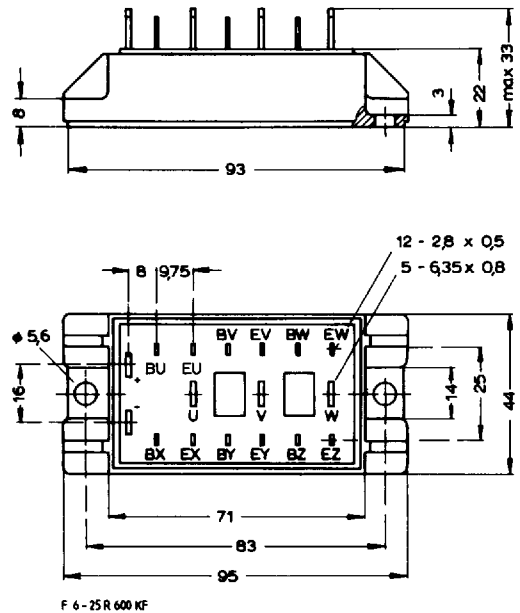
6



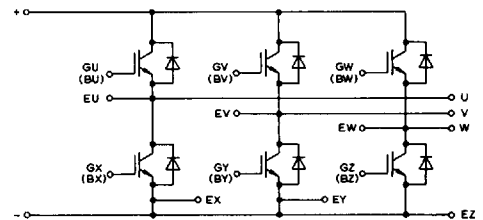
F 6 - 8 R 1000 K



7



F 6 - 25 R 600 KF



8

