

T-39-31

Transistor		Transistor	
Elektrische Eigenschaften		Electrical properties	
Höchstzulässige Werte		Maximum rated values	
V _{CES}		1000	V
I _C		75	A
I _{CRM}	t _p = 1 ms	150	A
P _{tot}	t _C = 25°C	625	W
V _{GE}		20	V
V _{EG}		20	V
Charakteristische Werte		Characteristic values	
V _{CE sat}	i _{CM} = 75 A, v _{GE} = 15 V, t _{vj} = 25°C	typ.	3,5 V
	i _{CM} = 75 A, v _{GE} = 15 V, t _{vj} = 25°C	max.	5 V
V _{GE (th)}	v _{CE} = 5 V, i _C = 75 mA, t _{vj} = 25°C	min.	3 V
	v _{CE} = 5 V, i _C = 75 mA, t _{vj} = 25°C	max.	6 V
C _{GE}	v _{CE} = 10 V, v _{GE} = 0 V, f _o = 1 MHz, t _{vj} = 25°C	typ.	9,5 nF
	v _{CE} = 1000 V, v _{GE} = 0 V, t _{vj} = 25°C	typ.	0,3 mA
i _{CES}	v _{CE} = 1000 V, v _{GE} = 0 V, t _{vj} = 125°C	typ.	2 mA
	v _{GE} = 20 V, t _{vj} = 25°C	typ.	50 nA
i _{GES}	v _{GE} = 20 V, t _{vj} = 25°C	max.	500 nA
	v _{EG} = 20 V, t _{vj} = 25°C	typ.	50 nA
i _{EGS}	v _{EG} = 20 V, t _{vj} = 25°C	max.	500 nA
t _{on}	i _{CM} = 75 A, v _{CE} = 600 V, v _{LF} = 15 V, R _G = 16 Ω, t _{vj} = 25°C	typ.	0,5 μs
	i _{CM} = 75 A, v _{CE} = 600 V, v _{LF} = 15 V, R _G = 16 Ω, t _{vj} = 125°C	typ.	0,6 μs
t _s	i _{CM} = 75 A, v _{CE} = 600 V, v _{LF} = 15 V, v _{LR} = 15 V, R _G = 16 Ω, t _{vj} = 25°C	typ.	0,6 μs
	i _{CM} = 75 A, v _{CE} = 600 V, v _{LF} = 15 V, v _{LR} = 15 V, R _G = 16 Ω, t _{vj} = 125°C	typ.	0,8 μs
t _f	i _{CM} = 75 A, v _{CE} = 600 V, v _{LF} = 15 V, v _{LR} = 15 V, R _G = 16 Ω, t _{vj} = 25°C	typ.	0,3 μs
	i _{CM} = 75 A, v _{CE} = 600 V, v _{LF} = 15 V, v _{LR} = 15 V, R _G = 16 Ω, t _{vj} = 125°C	typ.	0,5 μs

Bedingungen für den Kurzschlußschutz	Conditions for protection against short circuits
t _{fg} = 10 μs, v _{LF} = v _{LR} = 15 V, R _G = 16 Ω, t _{vj} = 125°C,	V _{CC} = 750 V, V _{CEM} = 850 V, i _{CMK1} ≈ 1100 A, i _{CMK2} ≈ 650 A

Thermische Eigenschaften		Thermal properties	
R _{thJC}	DC, pro Baustein / per module	0,1	°C/W
	DC, pro Zweig / per arm	0,2	°C/W
R _{thCK}	pro Baustein / per module	0,05	°C/W
	pro Zweig / per arm	0,1	°C/W
t _{vjmax}		150	°C
t _{vjop}		-40 / + 150	°C
t _{stg}		-40 / + 125	°C

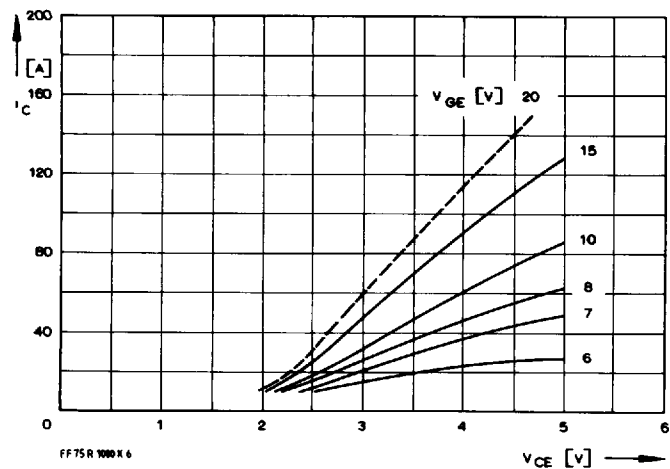
Inversdiode		Inverse diode	
Elektrische Eigenschaften		Electrical properties	
Höchstzulässige Werte		Maximum rated values	
I _{F (max)}		75	A
I _{FRM}	t _p = 1 ms	150	A

Charakteristische Werte		Characteristic values	
V _F	i _F = 75 A, v _{GE} = 0 V, t _{vj} = 25°C	typ.	2 V
	i _F = 75 A, v _{GE} = 0 V, t _{vj} = 25°C	max.	3 V
I _{RM}	i _{FM} = 75 A, -di _F /dt = 100 A/μs		
	v _{EG} = 10 V, t _{vj} = 25°C	typ.	19 A
Q _r	i _{FM} = 75 A, -di _F /dt = 100 A/μs		
	v _{EG} = 10 V, t _{vj} = 125°C	typ.	30 A
	i _{FM} = 75 A, -di _F /dt = 100 A/μs		
	v _{EG} = 10 V, t _{vj} = 25°C	typ.	4,5 μAs
	i _{FM} = 75 A, -di _F /dt = 100 A/μs		
	v _{EG} = 10 V, t _{vj} = 125°C	typ.	9 μAs

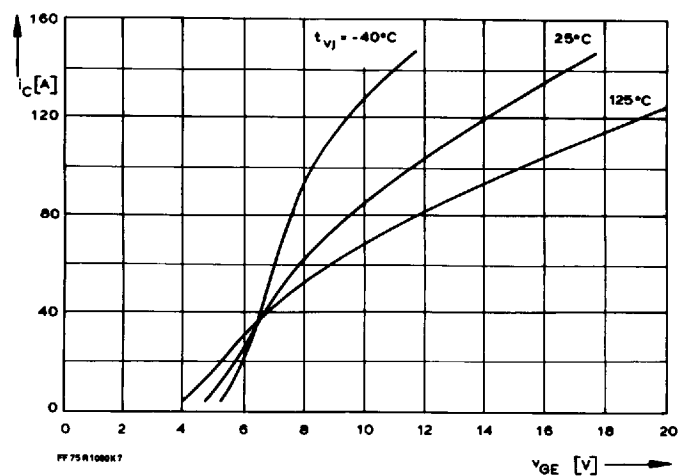
Thermische Eigenschaften		Thermal properties	
R _{thJC}	DC, pro Baustein / per module	0,4	°C/W
	DC, pro Zweig / per arm	0,8	°C/W
R _{thCK}	pro Baustein / per module	0,05	°C/W
	pro Zweig / per arm	0,1	°C/W
t _{vjmax}		125	°C
t _{vjop}		-40 / + 125	°C
t _{stg}		-40 / + 125	°C

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

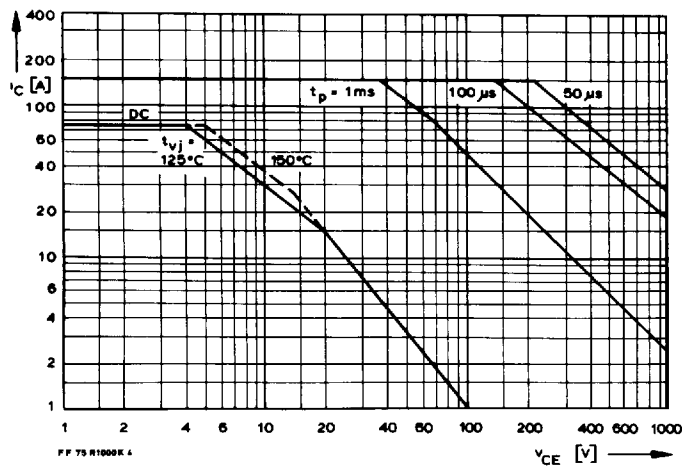
Mechanische Eigenschaften		Mechanical properties	
G		255	g
M1		3	Nm
M2		3	Nm



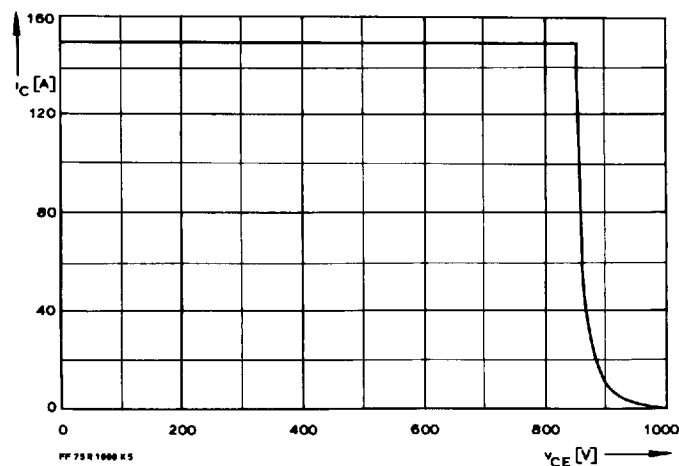
1 Kollektor-Emitter-Spannung im Sättigungsbereich (typisch).
Collector-emitter-voltage in saturation region (typical).
 $t_{vj} = 25^{\circ}\text{C}$



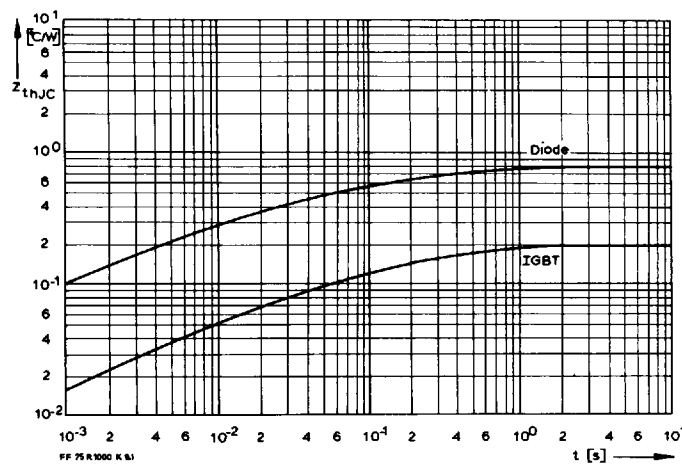
2 Übertragungscharakteristik (typisch).
Transfer characteristic (typical).
 $V_{CE} = 5\text{ V}$



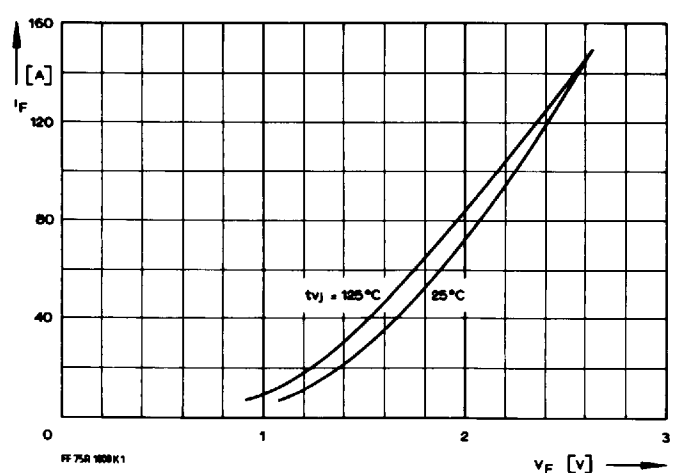
3 Erlaubter Arbeitsbereich in Vorwärtsrichtung (Einzelimpuls, nicht periodisch).
Forward biased safe operating area (single pulse, non repetitive).
 $t_C = 25^{\circ}\text{C}$



4 Erlaubter Arbeitsbereich in Rückwärtsrichtung.
Reverse biased safe operating area.
 $t_{vj} = 125^{\circ}\text{C}$, $V_{LF} = V_{LR} = 15\text{ V}$, $R_G = 16\text{ }\Omega$



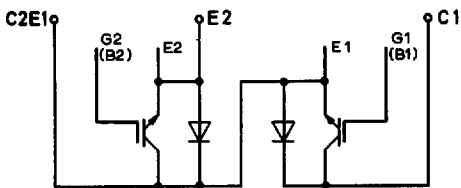
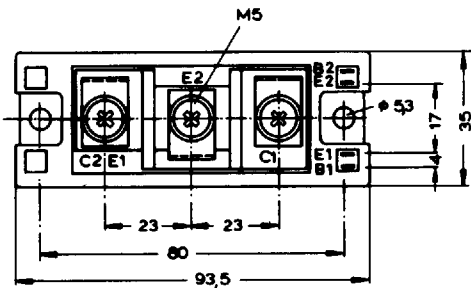
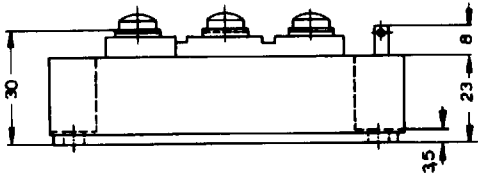
5 Transienter innerer Wärmewiderstand je Zweig (DC).
Transient thermal impedance per arm (DC).



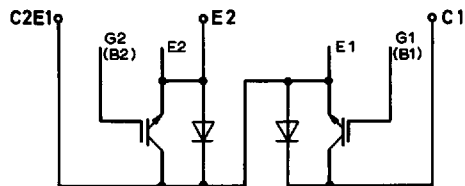
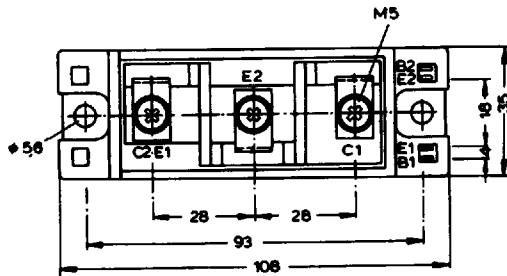
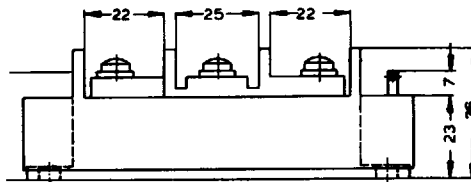
6 Durchlaßkennlinie der Inversdiode (typisch).
Forward characteristic of the inverse diode (typical).
 $V_{GE} = 0\text{ V}$

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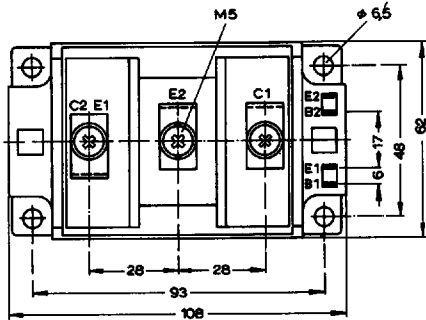
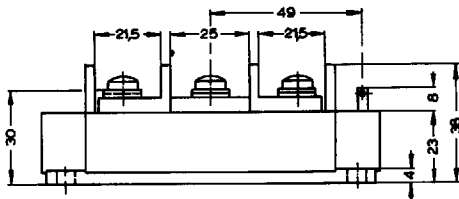
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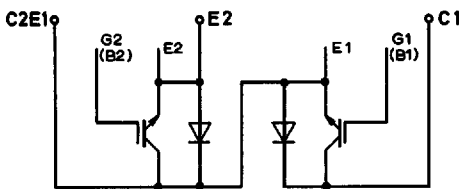
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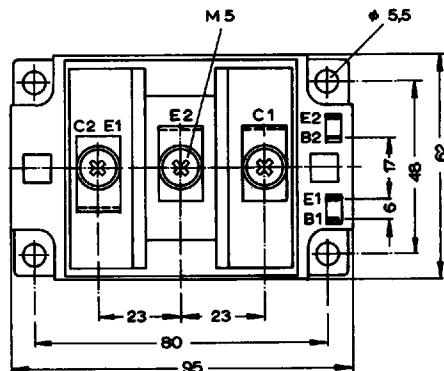
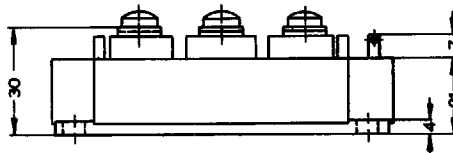


FF 100 R 1000 K

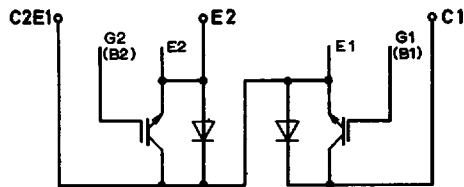


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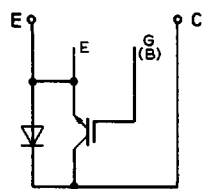
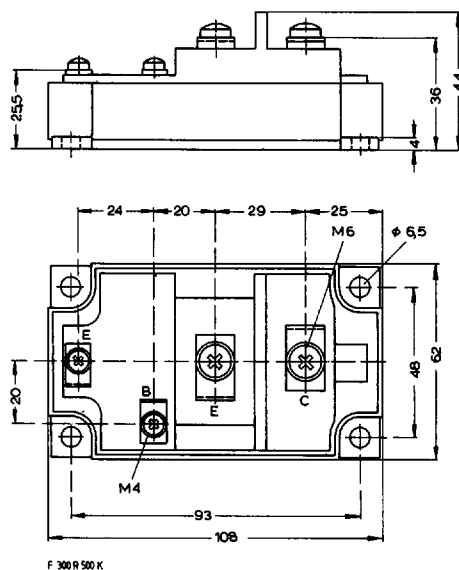
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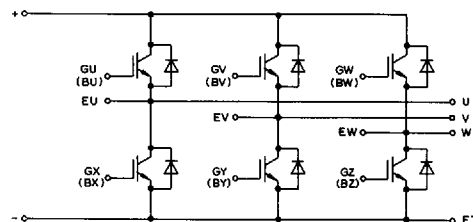
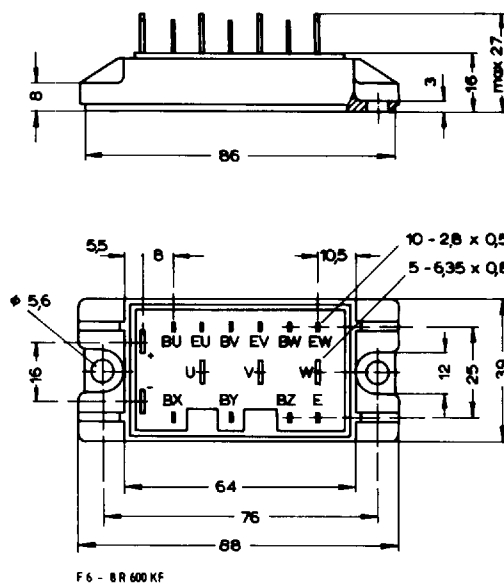
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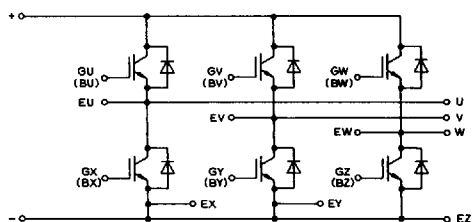
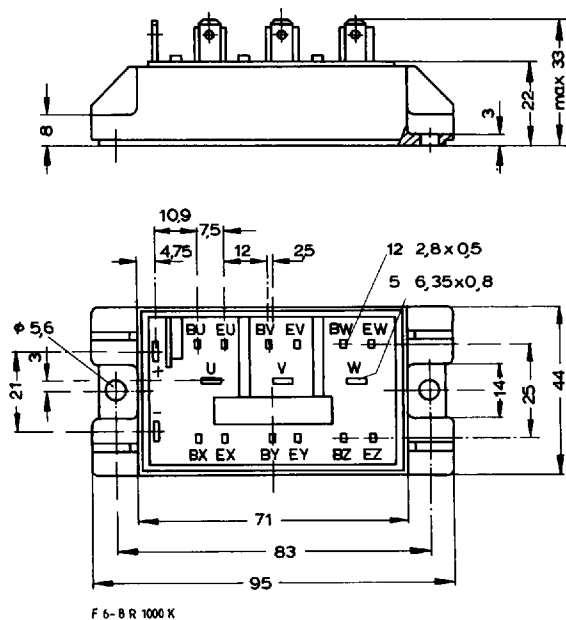
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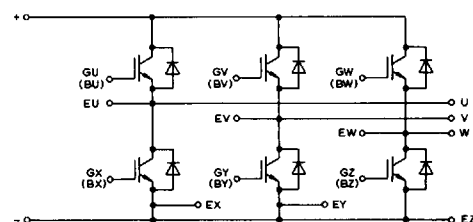
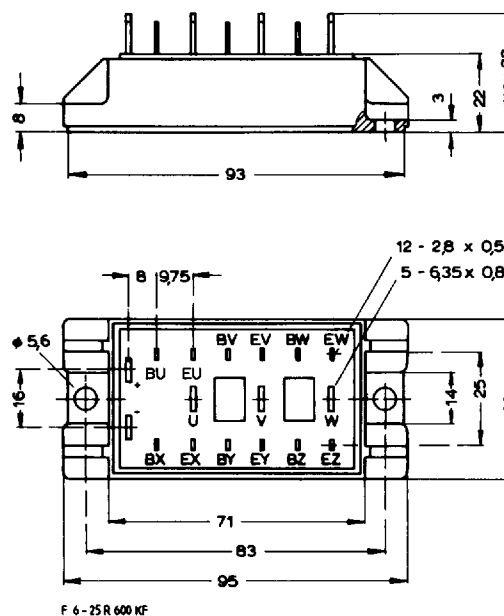
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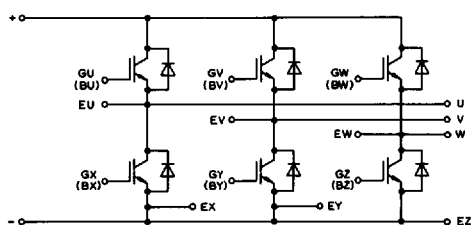
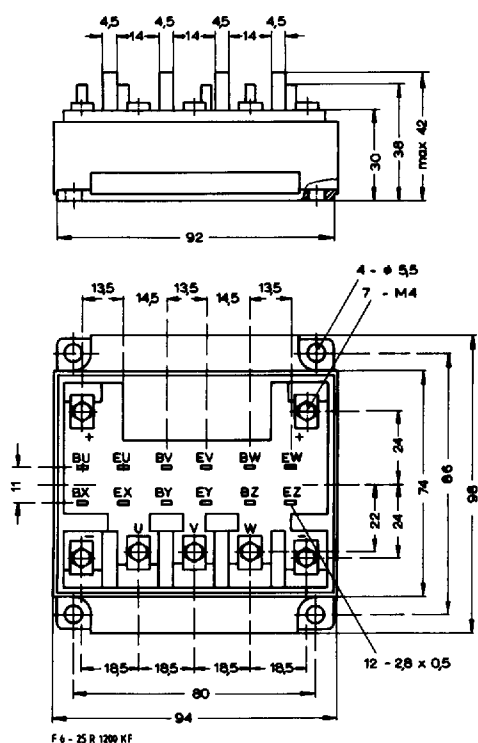
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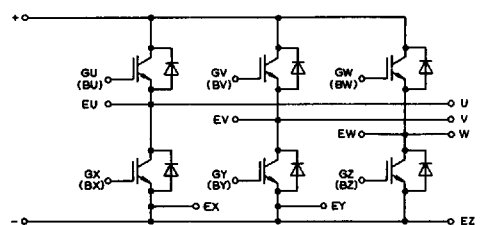
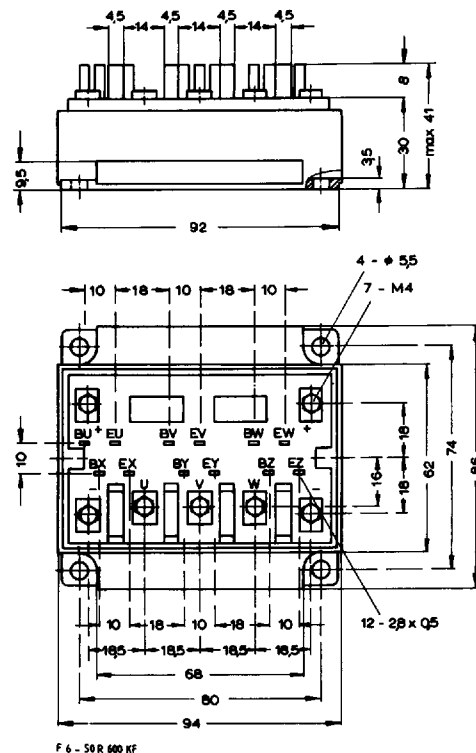
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