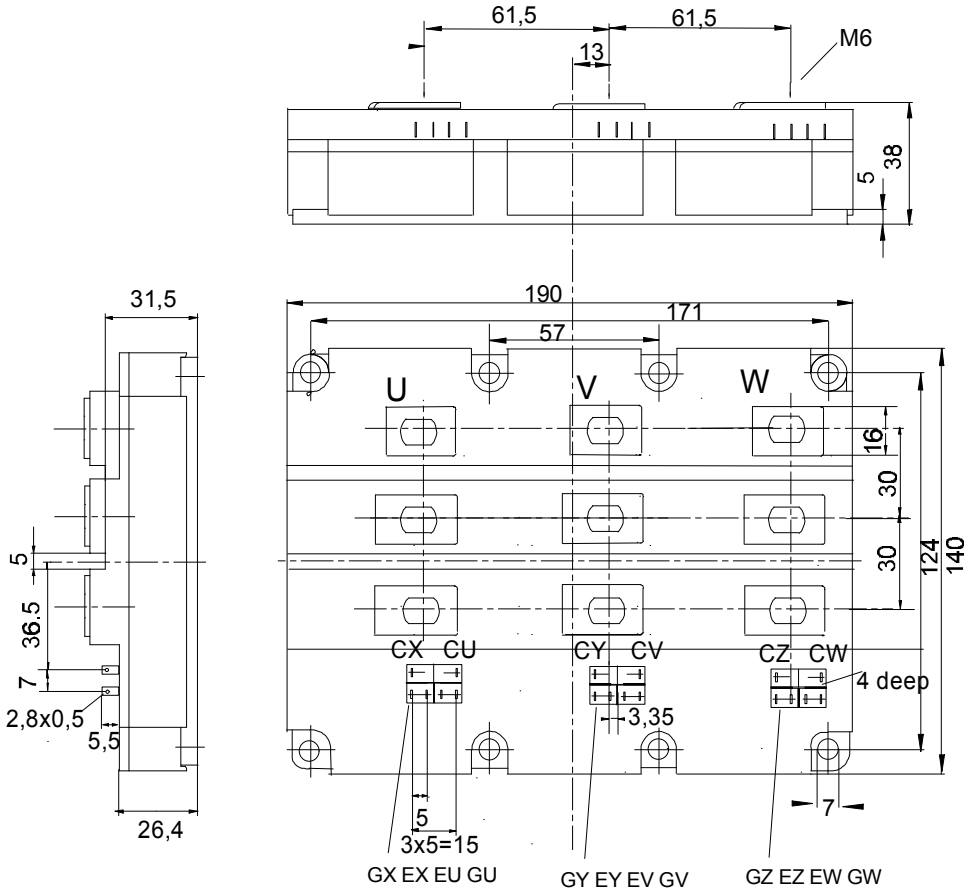
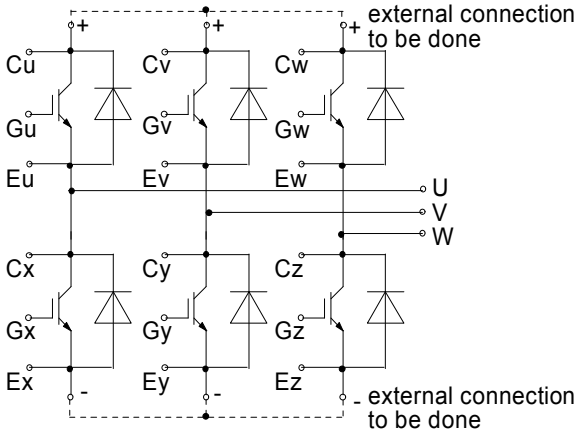
European Power-
Semiconductor and
Electronics Company
GmbH + Co. KG

Marketing Information
FS 300 R 12 KF4





VWK, May 1996

Höchstzulässige Werte / Maximum rated values

Elektrische Eigenschaften / Electrical properties

Kollektor-Emitter-Sperrspannung	collector-emitter voltage		V_{CES}			1200 V
Kollektor-Dauergleichstrom	DC-collector current		I_C			300 A
Periodischer Kollektor Spitzenstrom	repetitive peak collector current	t_p=1 ms	I_{CRM}			600 A
Gesamt-Verlustleistung	total power dissipation	t_C=25°C, Transistor /transistor	P_{tot}			2000 W
Gate-Emitter-Spitzenspannung	gate-emitter peak voltage		V_{GE}			+/- 20 V
Dauergleichstrom	DC forward current		I_F			300 A
Periodischer Spitzenstrom	repetitive peak forw. current	t_p=1ms	I_{FRM}			600 A
Isolations-Prüfspannung	insulation test voltage	RMS, f=50 Hz, t= 1 min.	V_{ISOL}			2,5 kV
Charakteristische Werte / Characteristic values: Transistor				min.	typ.	max.
Kollektor-Emitter Sättigungsspannung	collector-emitter saturation voltage	i_C=300A, v_{GE}=15V, t_{vj}=25°C	$v_{CE\ sat}$	-	2,7	3,2 V
		i_C=300A, v_{GE}=15V, t_{vj}=125°C		-	3,3	3,9 V
Gate-Schwellenspannung	gate threshold voltage	i_C=12mA, v_{CE}=v_{GE}, t_{vj}=25°C	$v_{GE(th)}$	4,5	5,5	6,5 V
Eingangskapazität	input capacity	f_O=1MHz,t_{vj}=25°C,v_{CE}=25V,v_{GE}=0V	C_{ies}	-	22	- nF
Kollektor-Emitter Reststrom	collector-emitter cut-off current	v_{CE}=1200V, v_{GE}=0V, t_{vj}=25°C	i_{CES}	-	-	5 mA
		v_{CE}=1200V, v_{GE}=0V, t_{vj}=125°C		-	-	50 mA
Gate-Emitter Reststrom	gate leakage current	v_{CE}=0V, v_{GE}=20V, t_{vj}=25°C	i_{GES}	-	-	400 nA
Emitter-Gate Reststrom	gate leakage current	v_{CE}=0V, v_{EG}=20V, t_{vj}=25°C	i_{EGS}	-	-	400 nA
Einschaltzeit (induktive Last)	turn-on time (inductive load)	i_C=300A,v_{CE}=600V	t_{on}			
		v_L= ±15V,R_G=6,8Ω t_{vj}=25°C		-	0,35	- µs
		v_L= ±15V,R_G=6,8Ω t_{vj}=125°C		-	0,45	- µs
Speicherzeit (induktive Last)	storage time (inductive load)	i_C=300A,v_{CE}=600V	t_s			
		v_L= ±15V,R_G=6,8Ω t_{vj}=25°C		-	0,9	- µs
		v_L= ±15V,R_G=6,8Ω t_{vj}=125°C		-	1,0	- µs
Fallzeit (induktive Last)	fall time (inductive load)	i_C=300A,v_{CE}=600V	t_f			
		v_L= ±15V,R_G=6,8Ω t_{vj}=25°C		-	0,10	- µs
		v_L= ±15V,R_G=6,8Ω t_{vj}=125°C		-	0,15	- µs
Charakteristische Werte / Characteristic values: Invers-Diode						
Durchlaßspannung	forward voltage	i_F=300A, v_{GE}=0V, t_{vj}=25°C	V_F	-	2,3	2,9 V
		i_F=300A, v_{GE}=0V, t_{vj}=125°C		-	2,1	- V
Rückstromspitze	peak reverse recovery current	i_F=300A, -di_F/dt=300A/µs	I_{RM}			
		v_{RM}=600V, v_{EG}=10V, t_{vj}=25°C		-	25	- A
		v_{RM}=600V, v_{EG}=10V, t_{vj}=125°C		-	65	- A
Sperrverzögerungsladung	recovered charge	i_F=300A, -di_F/dt=300A/µs	Q_r			
		v_{RM}=600V, v_{EG}=10V, t_{vj}=25°C		-	4	- µAs
		v_{RM}=600V, v_{EG}=10V, t_{vj}=125°C		-	20	- µAs
Thermische Eigenschaften / Thermal properties						
Innerer Wärmewiderstand	thermal resistance, junction to case	Transistor,DC,pro Modul/per module	R_{thJC}			0,011 °C/W
		Transistor,DC,pro Zweig/per arm				0,064 °C/W
		Diode,DC, pro Modul/per module				0,023 °C/W
		Diode,DC, pro Zweig/per arm				0,140 °C/W
Übergangs-Wärmewiderstand	thermal resistance, case to heatsink	pro Modul / per Module	R_{thCK}		typ.	0,006 °C/W
		pro Zweig / per arm			typ.	0,036 °C/W
Höchstzul. Sperrschichttemperatur	max. junction temperature		$t_{vj\ max}$			150 °C
Betriebstemperatur	operating temperature	Transistor / transistor	$t_{c\ op}$			-40...+150 °C
		Diode / diode	$t_{c\ op}$			-40...+125 °C
Lagertemperatur	storage temperature		t_{stg}			-40...+125 °C
Mechanische Eigenschaften / Mechanical properties						
Gehäuse, siehe Anlage	case, see appendix					
Innere Isolation	internal insulation					Al_2O_3
Anzugsdrehmoment f. mech. Befestigung	mounting torque		M1			3 Nm
Anzugsdrehmoment f. elektr. Anschlüsse	terminal connection torque	terminals M6	M2			5...6 Nm
Gewicht	weight		G			ca. 2300 g

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