Höchstzulässige Werte / Maximum rated values

Elektrische Eigenschaften / Electrical properties

Kollektor-Emitter-Sperrspannung collector-emitter voltage		V_{CES}	600	V
Kollektor-Dauergleichstrom DC-collector current	T_C = 70° C T_C = 25 °C	$I_{C,nom.}$ I_C	75 95	A A
Periodischer Kollektor Spitzenstrom repetitive peak collector current	t_P = 1 ms, T_C = 70°C	I_{CRM}	150	A
Gesamt-Verlustleistung total power dissipation	T_C=25°C, Transistor	P_{tot}	330	W
Gate-Emitter-Spitzenspannung gate-emitter peak voltage		V_{GES}	+/- 20V	V
Dauergleichstrom DC forward current		I_F	75	A
Periodischer Spitzenstrom repetitive peak forw. current	t_P = 1 ms	I_{FRM}	150	A
Grenzlastintegral der Diode I^2t - value, Diode	V_R = 0V, t_p = 10ms, T_{Vj} = 125°C	I^2t	1.200	A^2s
Isolations-Prüfspannung insulation test voltage	RMS, f = 50 Hz, t = 1 min.	V_{ISOL}	2,5	kV

Charakteristische Werte / Characteristic values

Transistor / Transistor

			min.	typ.	max.	
Kollektor-Emitter Sättigungsspannung collector-emitter saturation voltage	I_C = 75A, V_{GE} = 15V, T_{vj} = 25°C I_C = 75A, V_{GE} = 15V, T_{vj} = 125°C	$V_{CE\ sat}$	- -	1,95 2,20	2,45 -	V V
Gate-Schwellenspannung gate threshold voltage	I_C = 1,5 mA, V_{CE} = V_{GE}, T_{vj} = 25°C	$V_{GE(th)}$	4,5	5,5	6,5	V
Eingangskapazität input capacitance	f = 1MHz,T_{vj} = 25°C,V_{CE} = 25V, V_{GE} = 0V	C_{ies}	-	3,3	-	nF
Rückwirkungskapazität reverse transfer capacitance	f = 1MHz,T_{vj} = 25°C,V_{CE} = 25V, V_{GE} = 0V	C_{res}	-	0,3	-	nF
Kollektor-Emitter Reststrom collector-emitter cut-off current	V_{CE} = 600V, V_{GE} = 0V, T_{vj} = 25°C V_{CE} = 600V, V_{GE} = 0V, T_{vj} = 125°C	I_{CES}	- -	1 1	500 -	µA mA
Gate-Emitter Reststrom gate-emitter leakage current	V_{CE} = 0V, V_{GE} = 20V, T_{vj} = 25°C	I_{GES}	-	-	400	nA

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approved by: Michael Hornkamp	revision: 3

Charakteristische Werte / Characteristic values

Transistor / Transistor

			min.	typ.	max.	
Einschaltverzögerungszeit (ind. Last) turn on delay time (inductive load)	I_C = 75 A, V_{CC} = 300V					
	V_{GE} = ±15V, R_G = 3,0 Ω, T_{vj} = 25°C	$t_{d,on}$	-	63	-	ns
	V_{GE} = ±15V, R_G = 3,0 Ω, T_{vj} = 125°C		-	65	-	ns
Anstiegszeit (induktive Last) rise time (inductive load)	I_C = 75 A, V_{CC} = 300V					
	V_{GE} = ±15V, R_G = 3,0 Ω, T_{vj} = 25°C	t_r	-	22	-	ns
	V_{GE} = ±15V, R_G = 3,0 Ω, T_{vj} = 125°C		-	25	-	ns
Abschaltverzögerungszeit (ind. Last) turn off delay time (inductive load)	I_C = 75 A, V_{CC} = 300V					
	V_{GE} = ±15V, R_G = 3,0 Ω, T_{vj} = 25°C	$t_{d,off}$	-	155	-	ns
	V_{GE} = ±15V, R_G = 3,0 Ω, T_{vj} = 125°C		-	170	-	ns
Fallzeit (induktive Last) fall time (inductive load)	I_C = 75 A, V_{CC} = 300V					
	V_{GE} = ±15V, R_G = 3,0 Ω, T_{vj} = 25°C	t_f	-	20	-	ns
	V_{GE} = ±15V, R_G = 3,0 Ω, T_{vj} = 125°C		-	35	-	ns
Einschaltverlustenergie pro Puls turn-on energy loss per pulse	I_C = 75 A, V_{CC} = 300V, V_{GE} = 15V R_G = 3,0 Ω, T_{vj} = 125°C, L_σ = 15 nH	E_{on}	-	0,7	-	mJ
Abschaltverlustenergie pro Puls turn-off energy loss per pulse	I_C = 75 A, V_{CC} = 300V, V_{GE} = 15V R_G = 3,0 Ω, T_{vj} = 125°C, L_σ = 15 nH	E_{off}	-	2,4	-	mJ
Kurzschlußverhalten SC Data	$t_P \leq 10\mu sec$, $V_{GE} \leq 15V$ $T_{Vj} \leq 125°C$, V_{CC}=360V, $V_{CEmax} = V_{CES} - L_{\sigma CE} \cdot di/dt$	I_{SC}	-	340	-	A
Modulinduktivität stray inductance module		$L_{\sigma CE}$	-	55	-	nH
Modul-Leitungswiderstand, Anschlüsse - Chip lead resistance, terminals - chip	T_c= 25°C	$R_{CC'+EE'}$	-	4,4	-	mΩ

Charakteristische Werte / Characteristic values

Diode / Diode

			min.	typ.	max.	
Durchlaßspannung forward voltage	I_F = 75 A, V_{GE} = 0V, T_{vj} = 25°C	V_F	-	1,25	1,6	V
	I_F = 75 A, V_{GE} = 0V, T_{vj} = 125°C		-	1,20	-	V
Rückstromspitze peak reverse recovery current	I_F = 75 A, - di_F/dt = 3000 A/µsec					
	V_R = 300V, VGE = -10V, T_{vj} = 25°C	I_{RM}	-	95	-	A
	V_R = 300V, VGE = -10V, T_{vj} = 125°C		-	115	-	A
Sperrverzögerungsladung recovered charge	I_F = 75 A, - di_F/dt = 3000 A/µsec					
	V_R = 300V, VGE = -10V, T_{vj} = 25°C	Q_r	-	5,1	-	µC
	V_R = 300V, VGE = -10V, T_{vj} = 125°C		-	7,9	-	µC
Abschaltenergie pro Puls reverse recovery energy	I_F = 75 A, - di_F/dt = 3000 A/µsec					
	V_R = 300V, VGE = -10V, T_{vj} = 25°C	E_{rec}	-	-	-	mJ
	V_R = 300V, VGE = -10V, T_{vj} = 125°C		-	2,3	-	mJ