

Höchstzulässige Werte / Maximum rated values

Elektrische Eigenschaften / Electrical properties

Kollektor-Emitter-Sperrspannung collector-emitter voltage		V_{CES}	1700	V
Kollektor-Dauergleichstrom DC-collector current	$T_C = 80^\circ\text{C}$	$I_{C,nom.}$	300	A
	$T_C = 25^\circ\text{C}$	I_C	600	A
Periodischer Kollektor Spitzenstrom repetitive peak collector current	$t_p = 1\text{ ms}, T_C=80^\circ\text{C}$	I_{CRM}	600	A
Gesamt-Verlustleistung total power dissipation	$T_C=25^\circ\text{C}$, Transistor	P_{tot}	2500	W
Gate-Emitter-Spitzenspannung gate-emitter peak voltage		V_{GES}	+/- 20V	V
Dauergleichstrom DC forward current		I_F	300	A
Periodischer Spitzenstrom repetitive peak forw. current	$t_p = 1\text{ ms}$	I_{FRM}	600	A
Grenzlastintegral der Diode I^2t - value, Diode	$V_R = 0\text{V}, t_p = 10\text{ms}, T_{vj} = 125^\circ\text{C}$	I^2t	18.000	A^2s
Isolations-Prüfspannung insulation test voltage	RMS, $f = 50\text{ Hz}, t = 1\text{ min.}$	V_{ISOL}	3,4	kV

Charakteristische Werte / Characteristic values

Transistor / Transistor

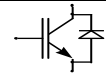
			min.	typ.	max.	
Kollektor-Emitter Sättigungsspannung collector-emitter saturation voltage	$I_C = 300\text{A}, V_{GE} = 15\text{V}, T_{vj} = 25^\circ\text{C}$	$V_{CE\text{ sat}}$	-	2,6	3,2	V
	$I_C = 300\text{A}, V_{GE} = 15\text{V}, T_{vj} = 125^\circ\text{C}$		-	3,1	3,6	V
Gate-Schwellenspannung gate threshold voltage	$I_C = 14\text{mA}, V_{CE} = V_{GE}, T_{vj} = 25^\circ\text{C}$	$V_{GE(th)}$	4,5	5,5	6,5	V
Gateladung gate charge	$V_{GE} = -15\text{V} \dots +15\text{V}$	Q_G	-	3,6	-	μC
Eingangskapazität input capacitance	$f = 1\text{MHz}, T_{vj} = 25^\circ\text{C}, V_{CE} = 25\text{V}, V_{GE} = 0\text{V}$	C_{ies}	-	20	-	nF
Rückwirkungskapazität reverse transfer capacitance	$f = 1\text{MHz}, T_{vj} = 25^\circ\text{C}, V_{CE} = 25\text{V}, V_{GE} = 0\text{V}$	C_{res}	-	1,0	-	nF
Kollektor-Emitter Reststrom collector-emitter cut-off current	$V_{CE} = 1700\text{V}, V_{GE} = 0\text{V}, T_{vj} = 25^\circ\text{C}$	I_{CES}	-	0,1	0,6	mA
	$V_{CE} = 1700\text{V}, V_{GE} = 0\text{V}, T_{vj} = 125^\circ\text{C}$		-	8		mA
Gate-Emitter Reststrom gate-emitter leakage current	$V_{CE} = 0\text{V}, V_{GE} = 20\text{V}, T_{vj} = 25^\circ\text{C}$	I_{GES}	-	-	200	nA

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Charakteristische Werte / Characteristic values

Transistor / Transistor

			min.	typ.	max.	
Einschaltverzögerungszeit (ind. Last) turn on delay time (inductive load)	$I_C = 300A, V_{CE} = 900V$	$t_{d,on}$	-	0,1	-	μs
	$V_{GE} = \pm 15V, R_G = 5\Omega, T_{vj} = 25^\circ C$		-	0,1	-	μs
Anstiegszeit (induktive Last) rise time (inductive load)	$I_C = 300A, V_{CE} = 900V$	t_r	-	0,1	-	μs
	$V_{GE} = \pm 15V, R_G = 5\Omega, T_{vj} = 125^\circ C$		-	0,1	-	μs
Abschaltverzögerungszeit (ind. Last) turn off delay time (inductive load)	$I_C = 300A, V_{CE} = 900V$	$t_{d,off}$	-	0,8	-	μs
	$V_{GE} = \pm 15V, R_G = 5\Omega, T_{vj} = 125^\circ C$		-	0,9	-	μs
Fallzeit (induktive Last) fall time (inductive load)	$I_C = 300A, V_{CE} = 900V$	t_f	-	0,03	-	μs
	$V_{GE} = \pm 15V, R_G = 5\Omega, T_{vj} = 125^\circ C$		-	0,03	-	μs
Einschaltverlustenergie pro Puls turn-on energy loss per pulse	$I_C = 300A, V_{CE} = 900V, V_{GE} = 15V$ $R_G = 5\Omega, T_{vj} = 125^\circ C, L_S = 60nH$	E_{on}	-	130	-	mWs
Abschaltverlustenergie pro Puls turn-off energy loss per pulse	$I_C = 300A, V_{CE} = 900V, V_{GE} = 15V$ $R_G = 5\Omega, T_{vj} = 125^\circ C, L_S = 60nH$	E_{off}	-	95	-	mWs
Kurzschlußverhalten SC Data	$t_F \leq 10\mu sec, V_{GE} \leq 15V, R_G = 5\Omega$ $T_{vj} \leq 125^\circ C, V_{CC} = 1000V, V_{CEmax} = V_{CES} - L_{SCE} \cdot di/dt$	I_{SC}	-	1200	-	A
Modulinduktivität stray inductance module		L_{SCE}	-	15	-	nH
Modulleitungswiderstand, Anschlüsse - Chip module lead resistance, terminals - chip	pro Zweig / per arm	R_{CC+EE}	-	0,5	-	m Ω

Charakteristische Werte / Characteristic values

Diode / Diode

			min.	typ.	max.	
Durchlaßspannung forward voltage	$I_F = 300A, V_{GE} = 0V, T_{vj} = 25^\circ C$	V_F	-	2,1	2,5	V
	$I_F = 300A, V_{GE} = 0V, T_{vj} = 125^\circ C$		-	2,1	2,5	V
Rückstromspitze peak reverse recovery current	$I_F = 300A, -di_F/dt = 3400A/\mu sec$	I_{RM}	-	230	-	A
	$V_R = 900V, V_{GE} = -10V, T_{vj} = 25^\circ C$ $V_R = 900V, V_{GE} = -10V, T_{vj} = 125^\circ C$		-	360	-	A
Sperrverzögerungsladung recovered charge	$I_F = 300A, -di_F/dt = 3400A/\mu sec$	Q_r	-	75	-	μAs
	$V_R = 900V, V_{GE} = -10V, T_{vj} = 25^\circ C$ $V_R = 900V, V_{GE} = -10V, T_{vj} = 125^\circ C$		-	120	-	μAs
Abschaltenergie pro Puls reverse recovery energy	$I_F = 300A, -di_F/dt = 3400A/\mu sec$	E_{rec}	-	35	-	mWs
	$V_R = 900V, V_{GE} = -10V, T_{vj} = 25^\circ C$ $V_R = 900V, V_{GE} = -10V, T_{vj} = 125^\circ C$		-	65	-	mWs