

Höchstzulässige Werte / Maximum rated values

Elektrische Eigenschaften / Electrical properties

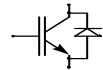
Kollektor-Emitter-Sperrspannung collector-emitter voltage		V_{CES}	600	V
Kollektor-Dauergleichstrom DC-collector current	$T_C = 70^\circ C$	$I_{C,nom.}$	30	A
	$T_C = 25^\circ C$	I_C	40	A
Periodischer Kollektor Spitzenstrom repetitive peak collector current	$t_p = 1 \text{ ms}, T_C = 70^\circ C$	I_{CRM}	60	A
Gesamt-Verlustleistung total power dissipation	$T_C = 25^\circ C$, Transistor	P_{tot}	135	W
Gate-Emitter-Spitzenspannung gate-emitter peak voltage		V_{GES}	+/- 20V	V
Dauergleichstrom DC forward current		I_F	30	A
Periodischer Spitzenstrom repetitive peak forw. current	$t_p = 1 \text{ ms}$	I_{FRM}	60	A
Grenzlastintegral der Diode I^2t - value, Diode	$V_R = 0V, t_p = 10\text{ms}, T_{vj} = 125^\circ C$	I^2t	240	A^2s
Isolations-Prüfspannung insulation test voltage	RMS, $f = 50 \text{ Hz}, t = 1 \text{ min.}$	V_{ISOL}	2,5	kV

Charakteristische Werte / Characteristic values

Transistor / Transistor

			min.	typ.	max.	
Kollektor-Emitter Sättigungsspannung collector-emitter saturation voltage	$I_C = 30A, V_{GE} = 15V, T_{vj} = 25^\circ C$	$V_{CE\ sat}$	-	1,95	2,45	V
	$I_C = 30A, V_{GE} = 15V, T_{vj} = 125^\circ C$		-	2,20	-	V
Gate-Schwellenspannung gate threshold voltage	$I_C = 0,7mA, V_{CE} = V_{GE}, T_{vj} = 25^\circ C$	$V_{GE(th)}$	4,5	5,5	6,5	V
Eingangskapazität input capacitance	$f = 1MHz, T_{vj} = 25^\circ C, V_{CE} = 25V, V_{GE} = 0V$	C_{ies}	-	1,3	-	nF
Rückwirkungskapazität reverse transfer capacitance	$f = 1MHz, T_{vj} = 25^\circ C, V_{CE} = 25V, V_{GE} = 0V$	C_{res}	-	0,10	-	nF
Kollektor-Emitter Reststrom collector-emitter cut-off current	$V_{CE} = 600V, V_{GE} = 0V, T_{vj} = 25^\circ C$	I_{CES}	-	1	500	μA
	$V_{CE} = 600V, V_{GE} = 0V, T_{vj} = 125^\circ C$		-	1	-	mA
Gate-Emitter Reststrom gate-emitter leakage current	$V_{CE} = 0V, V_{GE} = 20V, T_{vj} = 25^\circ C$	I_{GES}	-	-	400	nA

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Charakteristische Werte / Characteristic values

Transistor / Transistor

			min.	typ.	max.	
Einschaltverzögerungszeit (ind. Last) turn on delay time (inductive load)	$I_C = 30A, V_{CC} = 300V$	$t_{d,on}$	-	30	-	ns
	$V_{GE} = \pm 15V, R_G = 6,8\Omega, T_{vj} = 25^\circ C$					
	$V_{GE} = \pm 15V, R_G = 6,8\Omega, T_{vj} = 125^\circ C$			32		
Anstiegszeit (induktive Last) rise time (inductive load)	$I_C = 30A, V_{CC} = 300V$	t_r	-	6,5	-	ns
	$V_{GE} = \pm 15V, R_G = 6,8\Omega, T_{vj} = 25^\circ C$					
	$V_{GE} = \pm 15V, R_G = 6,8\Omega, T_{vj} = 125^\circ C$			7		
Abschaltverzögerungszeit (ind. Last) turn off delay time (inductive load)	$I_C = 30A, V_{CC} = 300V$	$t_{d,off}$	-	75	-	ns
	$V_{GE} = \pm 15V, R_G = 6,8\Omega, T_{vj} = 25^\circ C$					
	$V_{GE} = \pm 15V, R_G = 6,8\Omega, T_{vj} = 125^\circ C$			85		
Fallzeit (induktive Last) fall time (inductive load)	$I_C = 30A, V_{CC} = 300V$	t_f	-	12	-	ns
	$V_{GE} = \pm 15V, R_G = 6,8\Omega, T_{vj} = 25^\circ C$					
	$V_{GE} = \pm 15V, R_G = 6,8\Omega, T_{vj} = 125^\circ C$			18		
Einschaltverlustenergie pro Puls turn-on energy loss per pulse	$I_C = 30A, V_{CC} = 300V, V_{GE} = 15V$ $R_G = 6,8\Omega, T_{vj} = 125^\circ C, L_\sigma = 15nH$	E_{on}	-	0,3	-	mJ
Abschaltverlustenergie pro Puls turn-off energy loss per pulse	$I_C = 30A, V_{CC} = 300V, V_{GE} = 15V$ $R_G = 6,8\Omega, T_{vj} = 125^\circ C, L_\sigma = 15nH$	E_{off}	-	0,8	-	mJ
Kurzschlußverhalten SC Data	$t_p \leq 10\mu sec, V_{GE} \leq 15V$ $T_{vj} \leq 125^\circ C, V_{CC} = 360V, V_{CEmax} = V_{CES} - L_{\sigma CE} \cdot di/dt$	I_{SC}	-	135	-	A
Modulinduktivität stray inductance module		$L_{\sigma CE}$	-	60	-	nH
Modul-Leitungswiderstand, Anschlüsse - Chip lead resistance, terminals - chip	$T_C = 25^\circ C$	R_{CC+EE}	-	8,0	-	mΩ

Charakteristische Werte / Characteristic values

Diode / Diode

			min.	typ.	max.	
Durchlaßspannung forward voltage	$I_F = 30 A, V_{GE} = 0V, T_{vj} = 25^\circ C$	V_F	-	1,25	1,6	V
	$I_F = 30 A, V_{GE} = 0V, T_{vj} = 125^\circ C$			1,20	-	V
Rückstromspitze peak reverse recovery current	$I_F = 30 A, - di_F/dt = 1400A/\mu sec$	I_{RM}	-	62	-	A
	$V_R = 300V, V_{GE} = -15V, T_{vj} = 25^\circ C$					
	$V_R = 300V, V_{GE} = -15V, T_{vj} = 125^\circ C$			64	-	A
Sperrverzögerungsladung recovered charge	$I_F = 30 A, - di_F/dt = 1400A/\mu sec$	Q_r	-	2,1	-	μC
	$V_R = 300V, V_{GE} = -15V, T_{vj} = 25^\circ C$					
	$V_R = 300V, V_{GE} = -15V, T_{vj} = 125^\circ C$			3,3	-	μC
Abschaltenergie pro Puls reverse recovery energy	$I_F = 30 A, - di_F/dt = 1400A/\mu sec$	E_{rec}	-	-	-	mJ
	$V_R = 300V, V_{GE} = -15V, T_{vj} = 25^\circ C$					
	$V_R = 300V, V_{GE} = -15V, T_{vj} = 125^\circ C$			0,9	-	mJ