



vorläufige Daten  
preliminary data

### Höchstzulässige Werte / maximum rated values

#### Elektrische Eigenschaften / electrical properties

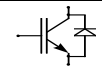
Kollektor Emitter Sperrspannung collector emitter voltage	$T_{vj} = 25^{\circ}\text{C}$	$V_{CES}$	600	V
Kollektor Dauergleichstrom DC collector current	$T_c = 55^{\circ}\text{C}$	$I_{C,nom.}$	50	A
	$T_c = 25^{\circ}\text{C}$	$I_C$	55	A
Periodischer Kollektor Spitzenstrom repetitive peak collector current	$t_p = 1\text{ms}, T_c = 55^{\circ}\text{C}$	$I_{CRM}$	100	A
Gesamt Verlustleistung total power dissipation	$T_c = 25^{\circ}\text{C}, \text{Transistor}$	$P_{tot}$	202	W
Gate Emitter Spitzenspannung gate emitter peak voltage		$V_{GES}$	$\pm 20$	V
Dauergleichstrom DC forward current		$I_F$	50	A
Periodischer Spitzenstrom repetitive peak forward current	$t_p = 1\text{ms}$	$I_{FRM}$	100	A
Grenzlastintegral $I^2t$ value	$V_R = 0\text{V}, t_p = 10\text{ms}, T_{vj} = 125^{\circ}\text{C}$	$I^2t$	630	$\text{A}^2\text{s}$
Isolations Prüfspannung insulation test voltage	RMS, $f = 50\text{Hz}, t = 1\text{min}$	$V_{ISOL}$	2,5	kV

### Charakteristische Werte / characteristic values

#### Transistor Wechselrichter / transistor inverter

			min.	typ.	max.	
Kollektor Emitter Sättigungsspannung collector emitter saturation voltage	$V_{GE} = 15\text{V}, T_{vj} = 25^{\circ}\text{C}, I_C = I_{C,nom}$	$V_{CESat}$	-	1,95	2,55	V
	$V_{GE} = 15\text{V}, T_{vj} = 125^{\circ}\text{C}, I_C = I_{C,nom}$		-	2,20	-	V
Gate Schwellenspannung gate threshold voltage	$V_{CE} = V_{GE}, T_{vj} = 25^{\circ}\text{C}, I_C = 1\text{mA}$	$V_{GE(th)}$	4,5	5,5	6,5	V
Gateladung gate charge	$V_{GE} = -15\text{V} \dots +15\text{V}$	$Q_G$	-	0,3	-	$\mu\text{C}$
Eingangskapazität input capacitance	$f = 1\text{MHz}, T_{vj} = 25^{\circ}\text{C}, V_{CE} = 25\text{V}, V_{GE} = 0\text{V}$	$C_{ies}$	-	2,2	-	nF
Rückwirkungskapazität reverse transfer capacitance	$f = 1\text{MHz}, T_{vj} = 25^{\circ}\text{C}, V_{CE} = 25\text{V}, V_{GE} = 0\text{V}$	$C_{res}$	-	0,2	-	nF
Kollektor Emitter Reststrom collector emitter cut off current	$V_{CE} = 600\text{V}, V_{GE} = 0\text{V}, T_{vj} = 25^{\circ}\text{C}$	$I_{CES}$	-	-	5	mA
Gate Emitter Reststrom gate emitter leakage current	$V_{CE} = 0\text{V}, V_{GE} = 20\text{V}, T_{vj} = 25^{\circ}\text{C}$	$I_{GES}$	-	-	400	nA

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### Charakteristische Werte / characteristic values

#### Transistor Wechselrichter / transistor inverter

			min.	typ.	max.	
Einschaltverzögerungszeit (induktive Last) turn on delay time (inductive load)	$I_C = 50A, V_{CC} = 300V$ $V_{GE} = \pm 15V, R_G = 3,3\Omega, T_{vj} = 25^\circ C$	$t_{d,on}$	-	42	-	ns
	$V_{GE} = \pm 15V, R_G = 3,3\Omega, T_{vj} = 125^\circ C$		-	43	-	ns
Anstiegszeit (induktive Last) rise time (inductive load)	$I_C = 50A, V_{CC} = 300V$ $V_{GE} = \pm 15V, R_G = 3,3\Omega, T_{vj} = 25^\circ C$	$t_r$	-	11	-	ns
	$V_{GE} = \pm 15V, R_G = 3,3\Omega, T_{vj} = 125^\circ C$		-	12	-	ns
Abschaltverzögerungszeit (induktive Last) turn off delay time (inductive load)	$I_C = 50A, V_{CC} = 300V$ $V_{GE} = \pm 15V, R_G = 3,3\Omega, T_{vj} = 25^\circ C$	$t_{d,off}$	-	120	-	ns
	$V_{GE} = \pm 15V, R_G = 3,3\Omega, T_{vj} = 125^\circ C$		-	130	-	ns
Fallzeit (induktive Last) fall time (inductive load)	$I_C = 50A, V_{CC} = 300V$ $V_{GE} = \pm 15V, R_G = 3,3\Omega, T_{vj} = 25^\circ C$	$t_f$	-	20	-	ns
	$V_{GE} = \pm 15V, R_G = 3,3\Omega, T_{vj} = 125^\circ C$		-	30	-	ns
Einschaltverlustenergie pro Puls turn on energy loss per pulse	$I_C = 50A, V_{CC} = 300V, V_{GE} = 15V$ $R_G = 3,3\Omega, T_{vj} = 125^\circ C, L_\sigma = 15nH$	$E_{on}$	-	0,5	-	mJ
Ausschaltverlustenergie pro Puls turn off energy loss per pulse	$I_C = 50A, V_{CC} = 300V, V_{GE} = 15V$ $R_G = 3,3\Omega, T_{vj} = 125^\circ C, L_\sigma = 15nH$	$E_{off}$	-	1,35	-	mJ
Kurzschlussverhalten SC data	$t_p \leq 10\mu sec, V_{GE} \leq 15V, T_{vj} = 125^\circ C,$ $V_{CC} = 360V, V_{CEmax} = V_{CES} - L_{\sigma CE} \cdot  di/dt $	$I_{SC}$	-	225	-	A
Modulinduktivität stray inductance module		$L_{\sigma CE}$	-	35	-	nH
Leitungswiderstand, Anschluss-Chip lead resistance, terminal-chip	$T_c = 25^\circ C$	$R_{CC/EE}$	-	4	-	mΩ

### Charakteristische Werte / characteristic values

#### Diode Wechselrichter / diode inverter

Durchlassspannung forward voltage	$I_F = 50A, V_{GE} = 0V, T_{vj} = 25^\circ C$	$V_F$	-	1,25	1,7	V
	$I_F = 50A, V_{GE} = 0V, T_{vj} = 125^\circ C$		-	1,20	-	V
Rückstromspitze peak reverse recovery current	$I_F = 50A, -di_F/dt = 2600 A/\mu s$ $V_R = 300V, V_{GE} = -10V, T_{vj} = 25^\circ C$	$I_{RM}$	-	88	-	A
	$V_R = 300V, V_{GE} = -10V, T_{vj} = 125^\circ C$		-	94	-	A
Sperrverzögerungsladung recovered charge	$I_F = 50A, -di_F/dt = 2600 A/\mu s$ $V_R = 300V, V_{GE} = -10V, T_{vj} = 25^\circ C$	$Q_r$	-	3,2	-	$\mu C$
	$V_R = 300V, V_{GE} = -10V, T_{vj} = 125^\circ C$		-	5,4	-	$\mu C$
Ausschaltenergie pro Puls reverse recovery energy	$I_F = 50A, -di_F/dt = 2600 A/\mu s$ $V_R = 300V, V_{GE} = -10V, T_{vj} = 25^\circ C$	$E_{rec}$	-	1,05	-	mJ
	$V_R = 300V, V_{GE} = -10V, T_{vj} = 125^\circ C$		-	1,50	-	mJ