

**Elektrische Eigenschaften / Electrical properties**

**Charakteristische Werte / Characteristic values**

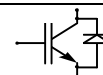
		min.	typ.	max.			
Modulinduktivität stray inductance module		$L_{GCE}$	-	-	100 nH		
Modul Leitungswiderstand, Anschlüsse-Chip lead resistance, terminals-chip	$T_C = 25^\circ C$	$R_{CC'+EE'}$	-	7	mΩ		
<b>Diode Wechselrichter/ Diode Inverter</b>		<b>min.</b>		<b>typ.</b>		<b>max.</b>	
Durchlaßspannung forward voltage	$V_{GE} = 0V, T_{vj} = 25^\circ C, I_F = 50 A$ $V_{GE} = 0V, T_{vj} = 125^\circ C, I_F = 50 A$	$V_F$	-	1,25	1,7	V	
Rückstromspitze peak reverse recovery current	$I_F = I_{Nenn}, - di_F/dt = 1150A/\mu s$ $V_{GE} = -10V, T_{vj} = 25^\circ C, V_R = 300 V$ $V_{GE} = -10V, T_{vj} = 125^\circ C, V_R = 300 V$	$I_{RM}$	-	35	-	A	
Sperrverzögerungsladung recovered charge	$I_F = I_{Nenn}, - di_F/dt = 1150A/\mu s$ $V_{GE} = -10V, T_{vj} = 25^\circ C, V_R = 300 V$ $V_{GE} = -10V, T_{vj} = 125^\circ C, V_R = 300 V$	$Q_r$	-	3,4	-	μAs	
Abschaltenergie pro Puls reverse recovery energy	$I_F = I_{Nenn}, - di_F/dt = 1150A/\mu s$ $V_{GE} = -10V, T_{vj} = 25^\circ C, V_R = 300 V$ $V_{GE} = -10V, T_{vj} = 125^\circ C, V_R = 300 V$	$E_{RO}$	-	0,8	-	mWs	
			-	1,3	-	mWs	
<b>Transistor Brems-Chopper/ Transistor Brake-Chopper</b>		<b>min.</b>		<b>typ.</b>		<b>max.</b>	
Kollektor-Emitter Sättigungsspannung collector-emitter saturation voltage	$V_{GE} = 15V, T_{vj} = 25^\circ C, I_C = 25,0 A$ $V_{GE} = 15V, T_{vj} = 125^\circ C, I_C = 25,0 A$	$V_{CE sat}$	-	2,2	2,75	V	
Gate-Schwellenspannung gate threshold voltage	$V_{CE} = V_{GE}, T_{vj} = 25^\circ C, I_C = 0,5 mA$	$V_{GE(TO)}$	4,5	5,5	6,5	V	
Eingangskapazität input capacitance	$f = 1MHz, T_{vj} = 25^\circ C$ $V_{CE} = 25 V, V_{GE} = 0 V$	$C_{ies}$	-	1,1	-	nF	
Kollektor-Emitter Reststrom collector-emitter cut-off current	$V_{GE} = 0V, T_{vj} = 25^\circ C, V_{CE} = 600 V$ $V_{GE} = 0V, T_{vj} = 125^\circ C, V_{CE} = 600 V$	$I_{CES}$	-	0,7	500	μA	
Gate-Emitter Reststrom gate-emitter leakage current	$V_{CE} = 0V, V_{GE} = 20V, T_{vj} = 25^\circ C$	$I_{GES}$	-	-	300	nA	
<b>Diode Brems-Chopper/ Diode Brake-Chopper</b>		<b>min.</b>		<b>typ.</b>		<b>max.</b>	
Durchlaßspannung forward voltage	$T_{vj} = 25^\circ C, I_F = 25,0 A$ $T_{vj} = 125^\circ C, I_F = 25,0 A$	$V_F$	-	1,6	2,05	V	
			-	1,65	-	V	
<b>NTC-Widerstand/ NTC-Thermistor</b>		<b>min.</b>		<b>typ.</b>		<b>max.</b>	
Nennwiderstand rated resistance	$T_C = 25^\circ C$	$R_{25}$	-	5	-	kΩ	
Abweichung von $R_{100}$ deviation of $R_{100}$	$T_C = 100^\circ C, R_{100} = 493 \Omega$	$\Delta R/R$	-5		5	%	
Verlustleistung power dissipation	$T_C = 25^\circ C$	$P_{25}$			20	mW	
B-Wert B-value	$R_2 = R_1 \exp [B(1/T_2 - 1/T_1)]$	$B_{25/50}$		3375		K	

# Technische Information / Technical Information

IGBT-Module  
IGBT-Modules

## BSM50GP60G

eupec



### Thermische Eigenschaften / Thermal properties

		min.	typ.	max.				
Innerer Wärmewiderstand thermal resistance, junction to case	Gleicher. Diode/ Rectif. Diode	$R_{thJC}$	-	-	1	K/W		
	Trans. Wechr./ Trans. Inverter		-	-	0,5	K/W		
	Diode Wechr./ Diode Inverter		-	-	0,8	K/W		
	Trans. Bremse/ Trans. Brake		-	-	1	K/W		
	Diode Bremse/ Diode Brake		-	-	2,3	K/W		
Übergangs-Wärmewiderstand thermal resistance, case to heatsink	Gleicher. Diode/ Rectif. Diode	$R_{thCK}$			0,04	-	K/W	
	Trans. Wechr./ Trans. Inverter							$\lambda_{paste}=1W/m^2K$
	Diode Wechr./ Diode Inverter							$\lambda_{grease}=1W/m^2K$
Höchstzulässige Sperrschichttemperatur maximum junction temperature		$T_{vj}$	-	-	150	°C		
Betriebstemperatur operation temperature		$T_{op}$	-40	-	125	°C		
Lagertemperatur storage temperature		$T_{stg}$	-40	-	125	°C		

### Mechanische Eigenschaften / Mechanical properties

Innere Isolation internal insulation				$Al_2O_3$	
CTI comperative tracking index				225	
Anzugsdrehmoment f. mech. Befestigung mounting torque		M		3 $\pm 10\%$	Nm
Gewicht weight		G		300	g