Preliminary

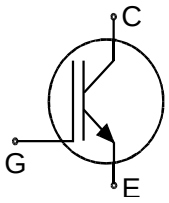
SIGC185T170R2C

IGBT Chip in NPT-technology

FEATURES:
- 1700V NPT technology
- 280µm chip
- short circuit prove
- positive temperature coefficient
- easy paralleling

This chip is used for:
- IGBT-Module BSM100GB170DL

Applications:
- drives



Chip Type	V_{CE}	I_{Cn}	Die Size	Package	Ordering Code
SIGC185T170R2C	1700V	100A	13.56 x 13.56 mm^2	sawn on foil	Q67041-A4697-A001

MECHANICAL PARAMETER:

Raster size	13.56 x 13.56	mm^2
Area total / active	183.87 / 141.6	
Emitter pad size	8 x (2.38x3.98)	
Gate pad size	0.757 x 1.48	
Thickness	280	µm
Wafer size	150	mm
Flat position	90	deg
Max.possible chips per wafer	72 pcs	
Passivation frontside	Photoimide	
Emitter metalization	3200 nm Al Si 1%	
Collector metalization	1400 nm Ni Ag –system suitable for epoxy and soft solder die bonding	
Die bond	Electrically conductive glue or solder	
Wire bond	Al, ≤500µm	
Reject Ink Dot Size	∅ 0.65mm ; max 1.2mm	
Recommended Storage Environment	store in original container, in dry nitrogen, < 6 month	

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MAXIMUM RATINGS:

Parameter	Symbol	Value	Unit
Collector-emitter voltage	V_{CE}	1700	V
DC collector current, limited by T_{jmax}	I_C	100	A
Pulsed collector current, t_p limited by T_{jmax}	I_{cpuls}	200	A
Gate emitter voltage	V_{GE}	±20	V
Operating junction and storage temperature	T_j, T_{stg}	-55 ... +150	°C

STATIC CHARACTERISTICS (tested on chip), T_j=25 °C, unless otherwise specified:

Parameter	Symbol	Conditions	Value			Unit
			min.	typ.	max.	
Collector-emitter breakdown voltage	$V_{(BR)CES}$	V_{GE}=0V , I_C=6mA	1700			V
Collector-emitter saturation voltage	$V_{CE(sat)}$	V_{GE}=15V, I_C=100A	2.2	2.7	3.2	
Gate-emitter threshold voltage	$V_{GE(th)}$	I_C=4.4mA , V_{GE}=V_{CE}	4.5	5.5	6.5	
Zero gate voltage collector current	I_{CES}	V_{CE}=1700V , V_{GE}=0V			1200	µA
Gate-emitter leakage current	I_{GES}	V_{CE}=0V , V_{GE}=30V			480	nA
Integrated gate resistor	R_{Gint}			2.5		Ω

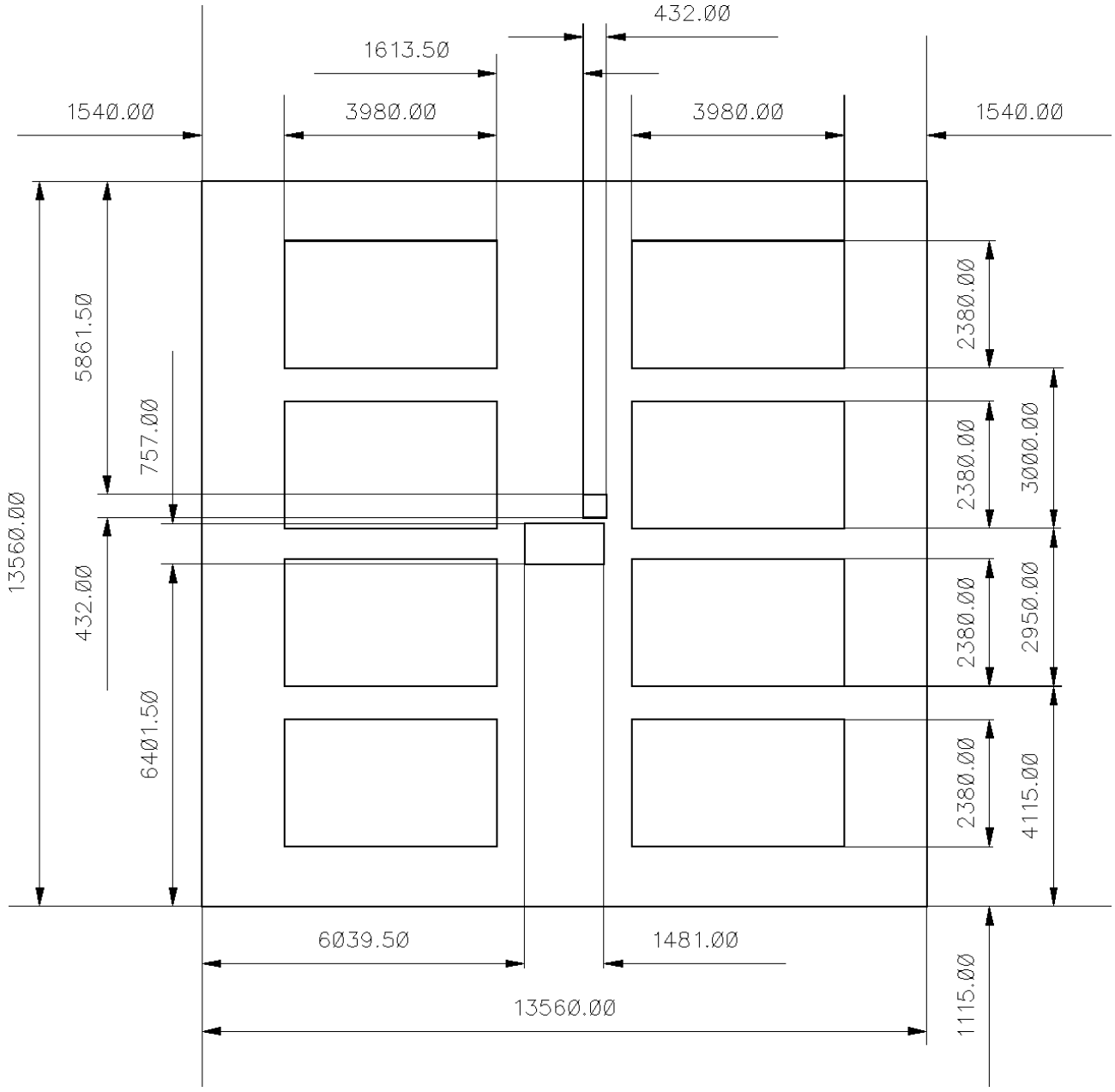
DYNAMIC CHARACTERISTICS (tested at component):

Parameter	Symbol	Conditions	Value			Unit
			min.	typ.	max.	
Input capacitance	C_{iss}	V_{CE}=25V,	-	7	-	nF
Output capacitance	C_{oss}	V_{GE}=0V,	-	tbd	-	
Reverse transfer capacitance	C_{rss}	f=1MHz	-	tbd	-	

SWITCHING CHARACTERISTICS (tested at component), Inductive Load:

Parameter	Symbol	Conditions	Value			Unit
			min.	typ.	max.	
Turn-on delay time	$t_{d(on)}$	T_j=25°C	-	100	-	ns
Rise time	t_r	V_{CC}=900V,	-	100	-	
Turn-off delay time	$t_{d(off)}$	I_C=100A	-	800	-	
Fall time	t_f	V_{GE}=±15V, R_G=15Ω	-	30	-	

CHIP DRAWING:



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FURTHER ELECTRICAL CHARACTERISTICS:

This chip data sheet refers to the device data sheet	BSM100GB170DL	Half-Bridge

Description:

AQL 0,65 for visual inspection according to failure catalog

Electrostatic Discharge Sensitive Device according to MIL-STD 883

Test-Normen Villach/Prüffeld

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St.-Martin-Strasse 53,
D-81541 München

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