Preliminary

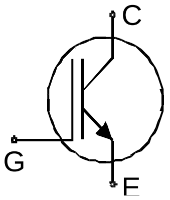
SIGC18T60N

IGBT Chip in NPT-technology

FEATURES:
- 600V NPT technology
- 100µm chip
- positive temperature coefficient
- easy paralleling

This chip is used for:
- IGBT Modules

Applications:
- drives



Chip Type	V_{CE}	I_{Cn}	Die Size	Package	Ordering Code
SIGC18T60N	600V	20A	4.3 x 4.3 mm^2	sawn on foil	Q67041-A4690-A001

MECHANICAL PARAMETER:

Raster size	4.30 x 4.30	mm^2
Area total / active	18.49 / 14.3	
Emitter pad size	2.48 x 2.98	
Gate pad size	0.70 x 1.08	
Thickness	100	µm
Wafer size	125	mm
Flat position	270	deg
Max.possible chips per wafer	537	
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	tbd	
Recommended Storage Environment	store in original container, in dry nitrogen, < 6 month	

Preliminary

SIGC18T60N

MAXIMUM RATINGS:

Parameter	**Symbol**	**Value**	**Unit**
Collector-emitter voltage	V_{CE}	600	V
DC collector current, limited by T_{jmax}	I_C	30	A
Pulsed collector current, t_p limited by T_{jmax}	I_{cpuls}	60	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=1mA	600			V
Collector-emitter saturation voltage	$V_{CE(sat)}$	V_{GE}=15V, I_C=20A	1.7	2.0	2.5	
Gate-emitter threshold voltage	$V_{GE(th)}$	I_C=0.5mA , V_{GE}=V_{CE}	4.5	5.5	6.5	
Zero gate voltage collector current	I_{CES}	V_{CE}=600V , V_{GE}=0V			70	µA
Gate-emitter leakage current	I_{GES}	V_{CE}=0V , V_{GE}=30V			120	nA

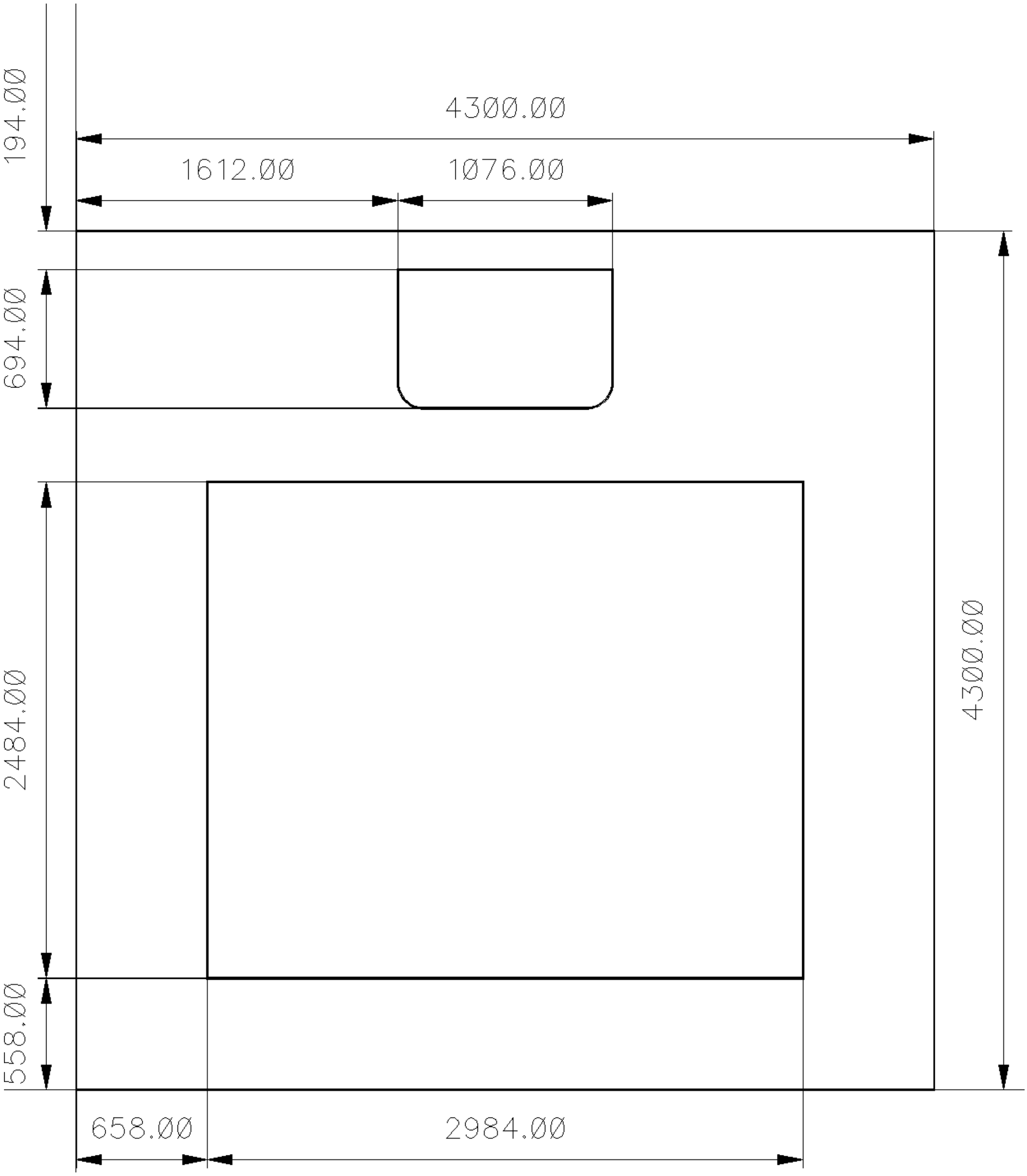
DYNAMIC CHARACTERISTICS (tested at component):

Parameter	**Symbol**	**Conditions**	**Value**			**Unit**
			min.	**typ.**	**max.**	
Input capacitance	C_{iss}	V_{CE}=25V, V_{GE}=0V, f=1MHz	-	1.1	-	nF
Output capacitance	C_{oss}		-	tbd	-	
Reverse transfer capacitance	C_{rss}		-	0.07	-	

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 V_{CC}=300V, I_C=20A V_{GE}=±15V, R_G=27Ω	-	45	-	ns
Rise time	t_r		-	23	-	
Turn-off delay time	$t_{d(off)}$		-	107	-	
Fall time	t_f		-	18	-	

CHIP DRAWING:



FURTHER ELECTRICAL CHARACTERISTICS:

This chip data sheet refers to the device data sheet	BSM 20 GD 60 DLC	Econo Pack 2 long pin

Description:

AQL 0,65 for visual inspection according to failure catalog
Electrostatic Discharge Sensitive Device according to MIL-STD 883
Test-Normen Villach/Prüffeld

Published by
Infineon Technologies AG i Gr.,
Bereich Kommunikation
St.-Martin-Strasse 53,
D-81541 München
© Infineon Technologies AG 1999
All Rights Reserved.

Attention please!

The information herein is given to describe certain components and shall not be considered as warranted characteristics.

Terms of delivery and rights to technical change reserved.

We hereby disclaim any and all warranties, including but not limited to warranties of non-infringement, regarding circuits, descriptions and charts stated herein.

Infineon Technologies is an approved CECC manufacturer.

Information

For further information on technology, delivery terms and conditions and prices please contact your nearest Infineon Technologies Office in Germany or our Infineon Technologies Representatives worldwide (see address list).

Warnings

Due to technical requirements components may contain dangerous substances. For information on the types in question please contact your nearest Infineon Technologies Office.

Infineon Technologies Components may only be used in life-support devices or systems with the express written approval of Infineon Technologies, if a failure of such components can reasonably be expected to cause the failure of that life-support device or system, or to affect the safety or effectiveness of that device or system. Life support devices or systems are intended to be implanted in the human body, or to support and/or maintain and sustain and/or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.