

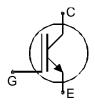
# SIGC07T60NC

## 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 <sub>CE</sub>	I <sub>Cn</sub>	Die Size	Package	Ordering Code
SIGC07T60NC	600V	6A	2.6 x 2.6 mm <sup>2</sup>	sawn on foil	Q67050-A4134- A001

## MECHANICAL PARAMETER:

Raster size	2.6 x 2.6				
Area total / active	6.76 / 4.3				
Emitter pad size	1.11 x 1.78				
Gate pad size	0.5 x 0.7				
Thickness	100	μm			
Wafer size	150	mm			
Flat position	0	deg			
Max.possible chips per wafer	2249				
Passivation frontside	Photoimide				
Emitter metallization	3200 nm Al Si 1%				
Collector metallization	1400 nm Ni Ag –system suitable for epoxy and soft solder die bonding				
Die bond	electrically conductive glue or solder				
Wire bond	AI, ≤500µm				
Reject Ink Dot Size	Ø 0.65mm ; max 1.2mm				
Recommended Storage Environment	store in original container, in dry nitrogen, < 6 month at an ambient temperature of 23°C				



#### MAXIMUM RATINGS:

Parameter	Symbol	Value	Unit
Collector-emitter voltage, Tj=25 °C	V <sub>CE</sub>	600	V
DC collector current, limited by T <sub>jmax</sub>	I <sub>C</sub>	1)	А
Pulsed collector current, $t_p$ limited by $T_{jmax}$	I <sub>cpuls</sub>	18	А
Gate emitter voltage	V <sub>GE</sub>	±20	V
Operating junction and storage temperature	T <sub>j</sub> , T <sub>stg</sub>	-55 +150	°C

<sup>1)</sup> depending on thermal properties of assembly

**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 <sub>(BR)CES</sub>	$V_{GE}$ =0V, I <sub>C</sub> =500µA	600			
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	V <sub>GE</sub> =15V, I <sub>C</sub> =6A	1.7	2.0	2.5	V
Gate-emitter threshold voltage	V <sub>GE(th)</sub>	$I_C$ =200µA, $V_{GE}$ = $V_{CE}$	4.5	5.5	6.5	
Zero gate voltage collector current	I <sub>CES</sub>	V <sub>CE</sub> =600V, V <sub>GE</sub> =0V			0.5	μA
Gate-emitter leakage current	I <sub>GES</sub>	$V_{CE}$ =0V, $V_{GE}$ =20V			120	nA

#### **DYNAMIC CHARACTERISTICS** (tested at component):

Parameter	Symbol	Conditions	Value			Unit
i alameter			min.	typ.	max.	
Input capacitance	Ciss	V <sub>CE</sub> =25V,		222		pF
Output capacitance	Coss	$V_{GE}=0V$ ,		-		
Reverse transfer capacitance	Crss	f=1MHz		20		1

## SWITCHING CHARACTERISTICS (tested at component), Inductive Load:

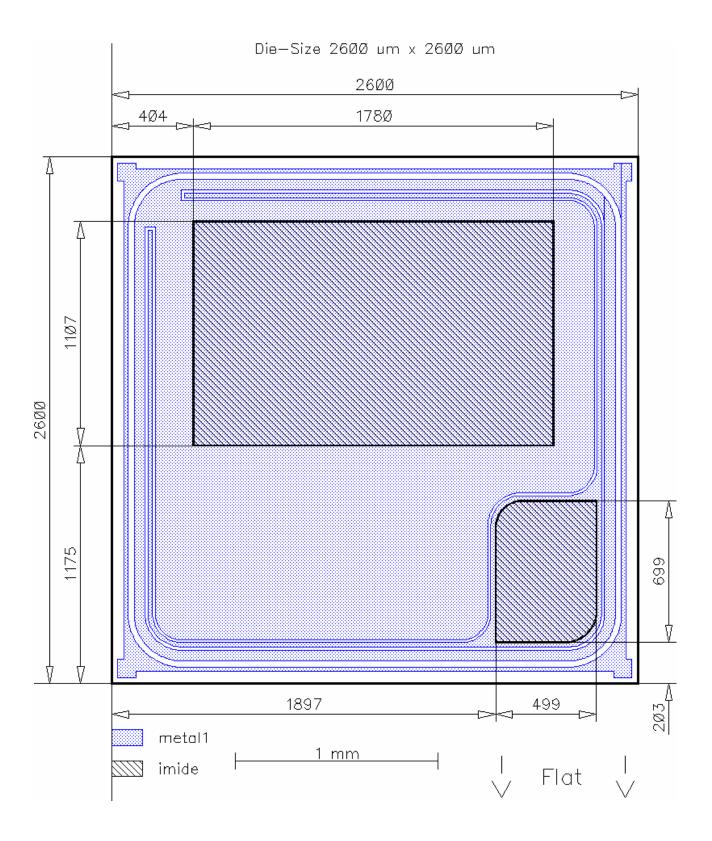
Parameter	Symbol	Conditions <sup>2)</sup>	Value			Unit
Falameter			min.	typ.	max.	
Turn-on delay time	t <sub>d(on)</sub>	$T_{j}=125 \circ C$ $V_{CC}=300V$ $I_{C}=6A$		21		ns
Rise time	t <sub>r</sub>	<i>I</i> <sub>C</sub> =6A		8		
Turn-off delay time	t <sub>d(off)</sub>	$V_{GE}=\pm 15V$ $R_{G}=54\Omega$		110		
Fall time	t <sub>f</sub>	1.6-0-122		25		

<sup>2)</sup> values also influenced by parasitic L- and C- in measurement and package.





## **CHIP DRAWING:**





#### FURTHER ELECTRICAL CHARACTERISTICS:

This chip data sheet refers to the device data sheet

#### **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, Bereich Kommunikation St.-Martin-Strasse 53, D-81541 München © Infineon Technologies AG 2002 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 world-wide (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.