

# SIGC14T60SNC

## IGBT Chip in NPT-technology

### FEATURES:

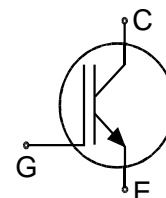
- 600V NPT technology
- 100µm chip
- short circuit prove
- positive temperature coefficient
- easy paralleling

### This chip is used for:

- SGP15N60

### Applications:

- drives



Chip Type	V <sub>CE</sub>	I <sub>CN</sub>	Die Size	Package	Ordering Code
SIGC14T60SNC	600V	15A	3.8 x 3.8 mm <sup>2</sup>	sawn on foil	Q67041-A4665-A001
SIGC14T60SNC	600V	15A	3.8 x 3.8 mm <sup>2</sup>	unsawn	Q67041-A4665-A002

### MECHANICAL PARAMETER:

Raster size	3.8 x 3.8	mm <sup>2</sup>
Area total / active	14.44 / 10.7	
Emitter pad size	1.89 x 2.19	
Gate pad size	0.7 x 1.09	
Thickness	100	µm
Wafer size	150	mm
Flat position	270	deg
Max.possible chips per wafer	1032	
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	Al, ≤500µm	
Reject Ink Dot Size	Ø 0.65mm ; max 1.2mm	
Recommended Storage Environment	store in original container, in dry nitrogen, < 6 month	

**MAXIMUM RATINGS:**

Parameter	Symbol	Value	Unit
Collector-emitter voltage	$V_{CE}$	600	V
DC collector current, limited by $T_{jmax}$	$I_C$	31	A
Pulsed collector current, $t_p$ limited by $T_{jmax}$	$I_{Cpuls}$	62	A
Gate emitter voltage	$V_{GE}$	$\pm 20$	V
Operating junction and storage temperature	$T_j, T_{stg}$	-55 ... +150	°C

**STATIC CHARACTERISTICS** (tested on chip),  $T_j=25^\circ\text{C}$ , unless otherwise specified:

Parameter	Symbol	Conditions	Value			Unit
			min.	typ.	max.	
Collector-emitter breakdown voltage	$V_{(BR)CES}$	$V_{GE}=0V, I_C=500\mu A$	600			V
Collector-emitter saturation voltage	$V_{CE(sat)}$	$V_{GE}=15V, I_C=15A$	1.6	2	2.5	
Gate-emitter threshold voltage	$V_{GE(th)}$	$I_C=400\mu A, V_{GE}=V_{CE}$	3	4	5	
Zero gate voltage collector current	$I_{CES}$	$V_{CE}=600V, V_{GE}=0V$			70	$\mu A$
Gate-emitter leakage current	$I_{GES}$	$V_{CE}=0V, V_{GE}=30V$			120	nA

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

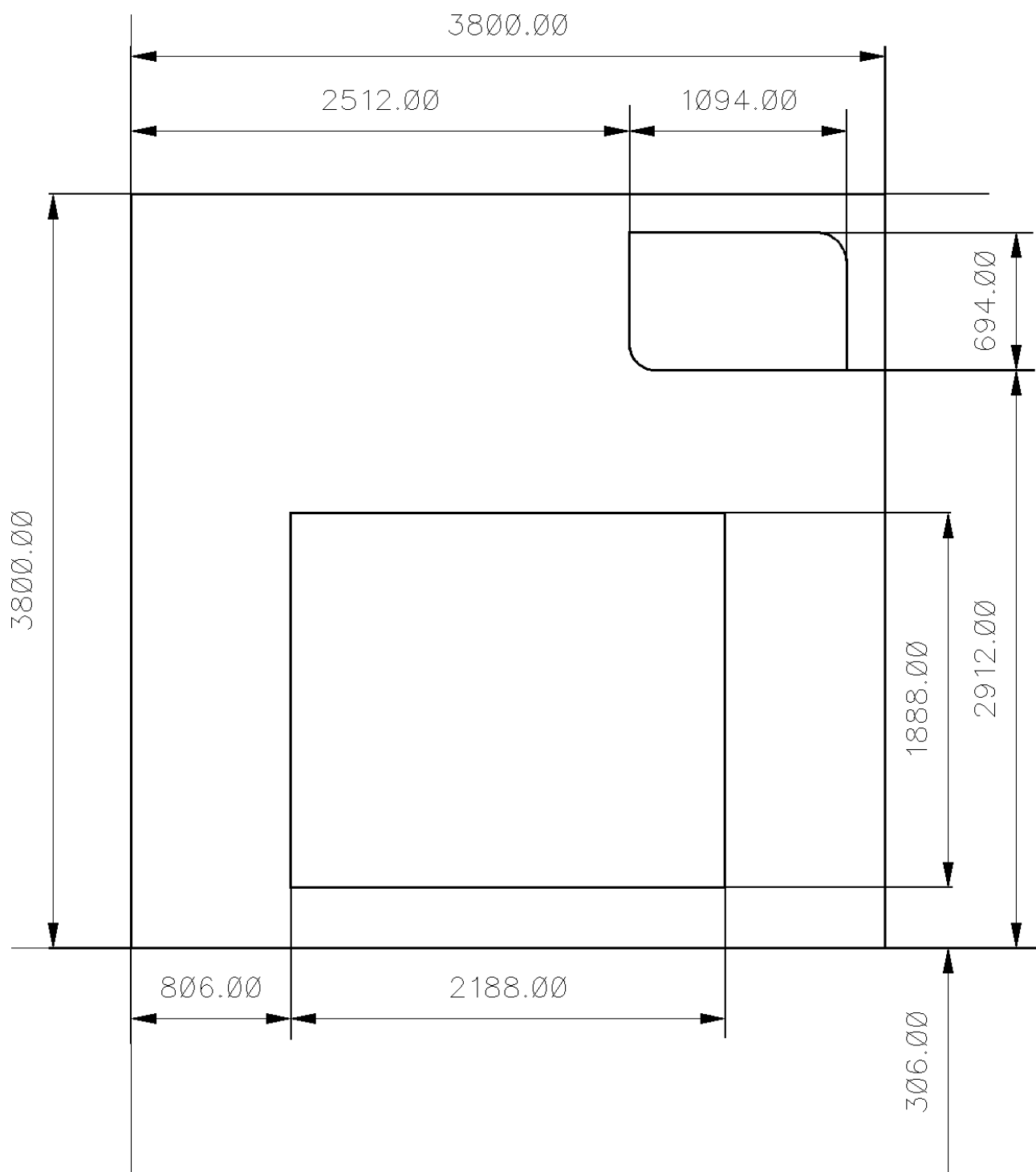
Parameter	Symbol	Conditions	Value			Unit
			min.	typ.	max.	
Input capacitance	$C_{iss}$	$V_{CE}=25V$	-	800	960	pF
Output capacitance	$C_{oss}$	$V_{GE}=0V$	-	84	100	
Reverse transfer capacitance	$C_{rss}$	$f=1\text{ MHz}$	-	52	63	

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

Parameter	Symbol	Conditions*	Value			Unit
			min.	typ.	max.	
Turn-on delay time	$t_{d(on)}$	$T_j=150^\circ\text{C}$ $V_{CC}=400V$ $I_C=15A$ $V_{GE}=+15/0V$ $R_G=21\Omega$	-	31	38	ns
Rise time	$t_r$		-	23	28	
Turn-off delay time	$t_{d(off)}$		-	261	313	
Fall time	$t_f$		-	54	65	

\* switching conditions different to 600V LowLoss, under comparable switching conditions 40% faster turnoff than LowLoss

## CHIP DRAWING:





Preliminary

# SIGC14T60SNC

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## FURTHER ELECTRICAL CHARACTERISTICS:

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This chip data sheet refers to the  
device data sheet

SGP15N60

Package :TO220

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## Description:

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AQL 0,65 for visual inspection according to failure catalog

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Electrostatic Discharge Sensitive Device according to MIL-STD 883

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Test-Normen Villach/Prüffeld

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**Published by**  
**Infineon Technologies AG i Gr.,**  
**Bereich Kommunikation**  
**St.-Martin-Strasse 53,**  
**D-81541 München**  
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