

# SIGC156T60SNR2C

IGBT Chip in NPT-technology

**FEATURES:**

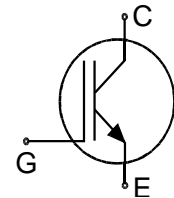
- 600V NPT technology
- 100µm chip
- short circuit prove
- positive temperature coefficient
- easy paralleling

**This chip is used for:**

- IGBT-Modules

**Applications:**

- drives



Chip Type	V <sub>CE</sub>	I <sub>Cn</sub>	Die Size	Package	Ordering Code
SIGC156T60SNR2C	600V	200A	12.5 x 12.5 mm <sup>2</sup>	sawn on foil	Q67050-A4154-A003

**MECHANICAL PARAMETER:**

Raster size	12.5 x 12.5	mm <sup>2</sup>
Area total / active	156.25 / 138.2	
Emitter pad size	8x( 2.58x4.78 )	
Gate pad size	0.8 x 1.46	
Thickness	100	µm
Wafer size	150	mm
Flat position	90	deg
Max.possible chips per wafer	84	
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	

# SIGC156T60SNR2C

**MAXIMUM RATINGS:**

Parameter	Symbol	Value	Unit
Collector-emitter voltage	$V_{CE}$	600	V
DC collector current, limited by $T_{jmax}$	$I_C$	200	A
Pulsed collector current, $t_p$ limited by $T_{jmax}$	$I_{Cpuls}$	400	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),  $T_j=25\text{ °C}$ , unless otherwise specified:

Parameter	Symbol	Conditions	Value			Unit
			min.	typ.	max.	
Collector-emitter breakdown voltage	$V_{(BR)CES}$	$V_{GE}=0V, I_C=5mA$	600			V
Collector-emitter saturation voltage	$V_{CE(sat)}$	$V_{GE}=15V, I_C=200A$	1.6	2	2.5	
Gate-emitter threshold voltage	$V_{GE(th)}$	$I_C=4mA, V_{GE}=V_{CE}$	3	4	5	
Zero gate voltage collector current	$I_{CES}$	$V_{CE}=600V, V_{GE}=0V$			700	µA
Gate-emitter leakage current	$I_{GES}$	$V_{CE}=0V, V_{GE}=30V$			600	nA
Integrated gate resistor	$R_{Gint}$			5		Ω

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

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

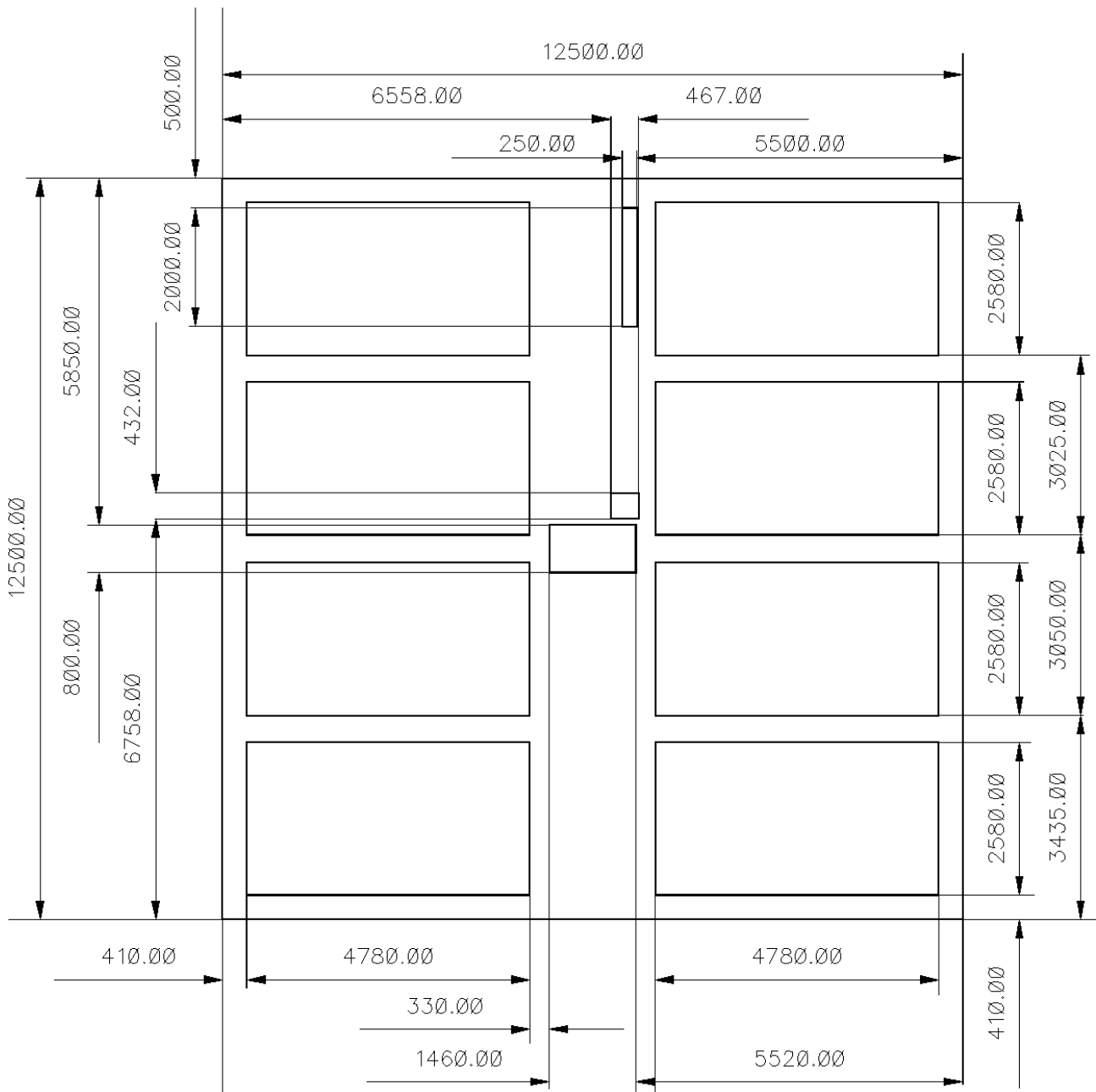
**SWITCHING CHARACTERISTICS** (tested at component), Inductive Load:

Parameter	Symbol	Conditions*	Value			Unit
			min.	typ.	max.	
Turn-on delay time	$t_{d(on)}$	$T_j=150\text{ °C}$	-	tbd	-	ns
Rise time	$t_r$	$V_{CC}=400V$	-	tbd	-	
Turn-off delay time	$t_{d(off)}$	$I_C=200A$	-	tbd	-	
Fall time	$t_f$	$V_{GE}=+15/0V$	-	tbd	-	
		$R_G=---\Omega$	-	tbd	-	

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

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**CHIP DRAWING:**





Preliminary

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## FURTHER ELECTRICAL CHARACTERISTICS:

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This chip data sheet refers to the device data sheet

BSM 200 GD 60 DLC

Econo Pack 3

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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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