

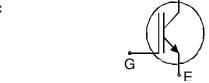
IGBT Chip in NPT-technology

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 _{CE}	I _{Cn}	Die Size	Package	Ordering Code
SIGC156T60NR2C	600V	200A	12.5 x 12.5 mm ²	sawn on foil	Q67050-A4013- A001

MECHANICAL PARAMETER:

MECHANICAL PARAMETER:				
Raster size	12.5 x 12.5			
Area total / active	156.25 / 138.2			
Emitter pad size	8x(2.58x4.78)			
Gate pad size	0.8 x 1.46			
Thickness	100			
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	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, T_j =25 °C	V _{CE}	600	V
DC collector current, limited by T _{jmax}	I _C	1)	Α
Pulsed collector current, t _p limited by T _{jmax}	I _{cpuls}	600	Α
Gate emitter voltage	V _{GE}	±20	V
Operating junction and storage temperature	T_j , T_{stg}	-55 + 150	°C

¹⁾ depending on thermal properties of assembly

$\textbf{STATIC CHARACTERISTICS} \text{ (tested on chip), } \textit{T}_{j}\text{=}25~^{\circ}\text{C, unless otherwise specified:}$

Parameter	Symbol	Conditions	Value			Unit
rarameter			min.	typ.	max.	J
Collector-emitter breakdown voltage	$V_{(BR)CES}$	$V_{GE}=0V$, $I_{C}=5mA$	600			
Collector-emitter saturation voltage	V _{CE(sat)}	V _{GE} =15V, I _C =200A	1.7	2	2.5	V
Gate-emitter threshold voltage	$V_{\rm GE(th)}$	$I_C=4mA$, $V_{GE}=V_{CE}$	4.5	5.5	6.5	
Zero gate voltage collector current	I _{CES}	V _{CE} =600V, V _{GE} =0V			13.6	μΑ
Gate-emitter leakage current	I_{GES}	$V_{CE}=0V$, $V_{GE}=20V$			600	nA
Integrated gate resistor	R _{Gint}			5		Ω

DYNAMIC CHARACTERISTICS (tested at component):

Parameter	Symbol	Conditions	Value			Unit
raiailletei			min.	typ.	max.	
Input capacitance	Ciss	V _{CE} =25V	-	9000	-	pF
Output capacitance	Coss	V _{GE} =0V	-	tbd	-	
Reverse transfer capacitance	C_{rss}	f=1MHz	-	800	-	

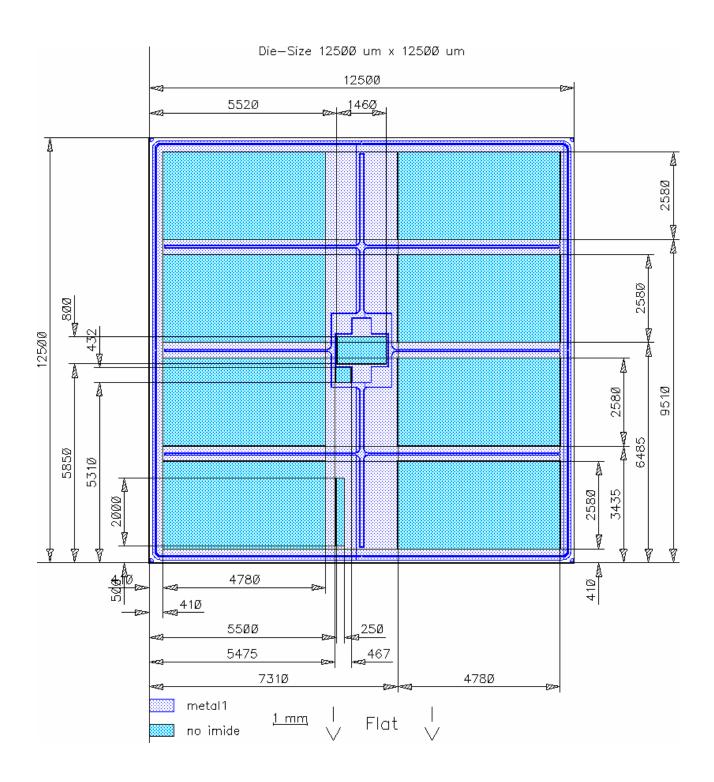
SWITCHING CHARACTERISTICS (tested at component), Inductive Load:

Parameter	Symbol	Conditions ¹⁾	Value			Unit
- arameter			min.	typ.	max.	J Ullit
Turn-on delay time	$t_{d(on)}$	$T_{\rm j}$ =125°C $V_{\rm CC}$ =300V	1	180	-	ns
Rise time	t _r	I _C =200A	-	49	-	
Turn-off delay time	$t_{d(off)}$	$V_{\rm GE}=\pm 15 \rm V$ $R_{\rm G}=1,5\Omega$	-	285	-	
Fall time	t_{f}	71G-1,022	-	41	-	

 $^{^{1)}}$ values also influenced by parasitic L- and C- in measurement and package.



CHIP DRAWING:





FURTHER ELECTRICAL CHARACTERISTICS:

This chip data sheet refers to the	BSM 200 GD 60 DLC	Econo Pack 3
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

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