

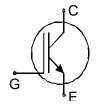
IGBT Chip in NPT-technology

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	
SIGC11T60SNC	600V	10A	3.25 x 3.25 mm ²	sawn on foil	Q67050-A4155-	
SIGCTTTOUSING	000 1 10	10/	3.23 X 3.23 IIIII	Sawii oii ioii	A001	

MECHANICAL PARAMETER:

Raster size	3.25 x 3.25	mm²		
Area total / active	10.56 / 7.4]		
Emitter pad size	2 x 1.6			
Gate pad size	1.08 x 0.68			
Thickness	100	μm		
Wafer size	150	mm		
Flat position	270	deg		
Max.possible chips per wafer	1414			
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)	А
Pulsed collector current, t _p limited by T _{jmax}	I _{cpuls}	30	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

STATIC CHARACTERISTICS (tested on chip), T_i =25 °C, unless otherwise specified:

Parameter	Symbol	Conditions	Value			Unit
Tarameter		Conditions	min.	typ.	max.	01
Collector-emitter breakdown voltage	$V_{(BR)CES}$	V _{GE} =0V, I _C =500μA	600			
Collector-emitter saturation voltage	V _{CE(sat)}	V _{GE} =15V, I _C =10A	1.7	2	2.4	V
Gate-emitter threshold voltage	$V_{\rm GE(th)}$	$I_C=300\mu A,\ V_{GE}=V_{CE}$	3	4	5	
Zero gate voltage collector current	I _{CES}	V _{CE} =600V, V _{GE} =0V			0.85	μA
Gate-emitter leakage current	I _{GES}	V _{CE} =0V, V _{GE} =20V			100	nA

DYNAMIC CHARACTERISTICS (tested at component):

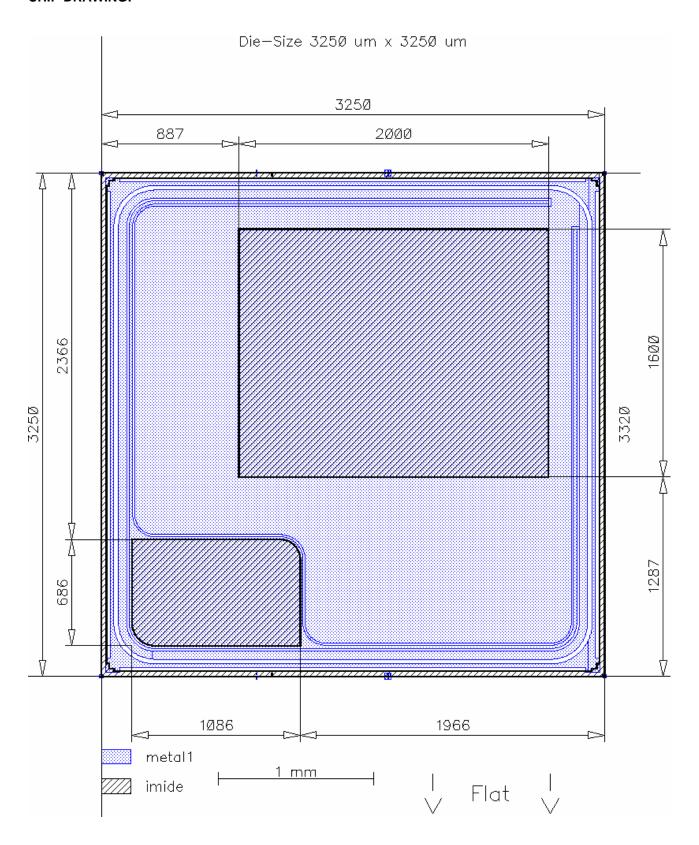
Parameter	Symbol	Conditions	Value			Unit
raiailletei	Symbol	Conditions	min.	typ.	max.	Onne
Input capacitance	Ciss	V _{CE} =25V	-	550	660	
Output capacitance	Coss	V _{GE} =0V	-	62	75	pF
Reverse transfer capacitance	Crss	f=1MHz	-	42	51	

SWITCHING CHARACTERISTICS (tested at component), Inductive Load:

Parameter	Symbol	Conditions 2)	Value			Unit
	Symbol		min.	typ.	max.	Joint
Turn-on delay time	$t_{d(on)}$	$T_{\rm j}$ =150°C $V_{\rm CC}$ =400V	-	28	34	
Rise time	t _r	I _C =10A	-	12	15	ns
Turn-off delay time	$t_{d(off)}$	$V_{\rm GE}$ =+15/0V $R_{\rm G}$ =25 Ω	-	198	238	1113
Fall time	t_{f}	, .G - 2 0 2 2	-	26	32	

switching conditions different to 600V Standard IGBT 2, under comparable switching conditions 40% faster turnoff than Standard IGBT 2. 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

SGP10N60A

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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