

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
SIGC12T60NC	600V	10A	3.5 x 3.5 mm ²	sawn on foil	Q67041-A4688- A001

MECHANICAL PARAMETER:

Raster size	3.5 x 3.5				
Area total / active	12.25 / 8.7				
Emitter pad size	1.989 x 1.583				
Gate pad size	1.1 x 0.694				
Thickness	100	μm			
Wafer size	150	mm			
Flat position	0	deg			
Max.possible chips per wafer	1219				
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	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}	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_{j} =25 °C, unless otherwise specified:

Parameter	Symbol	Conditions	Value			Unit
Tarameter		Conditions	min.	typ.	max.	
Collector-emitter breakdown voltage	V _{(BR)CES}	V_{GE} =0V, I_{C} =500 μ A	600			
Collector-emitter saturation voltage	V _{CE(sat)}	V _{GE} =15V, I _C =10A	1.6	2.0	2.5	٧
Gate-emitter threshold voltage	V _{GE(th)}	$I_C=350\mu A,\ V_{GE}=V_{CE}$	4.5	5.5	6.5	
Zero gate voltage collector current	I _{CES}	V _{CE} =600V, V _{GE} =0V			0.8	μA
Gate-emitter leakage current	I _{GES}	V _{CE} =0V, V _{GE} =20V			120	nA

DYNAMIC CHARACTERISTICS (tested at component):

Parameter	Symbol	Conditions	Value			Unit
raiametei			min.	typ.	max.	Uilli
Input capacitance	Ciss	V _{CE} =25V,	-	450	-	pF
Output capacitance	Coss	$V_{GE}=0V$,	-	tbd	-	
Reverse transfer capacitance	Crss	f=1MHz	-	40	-	

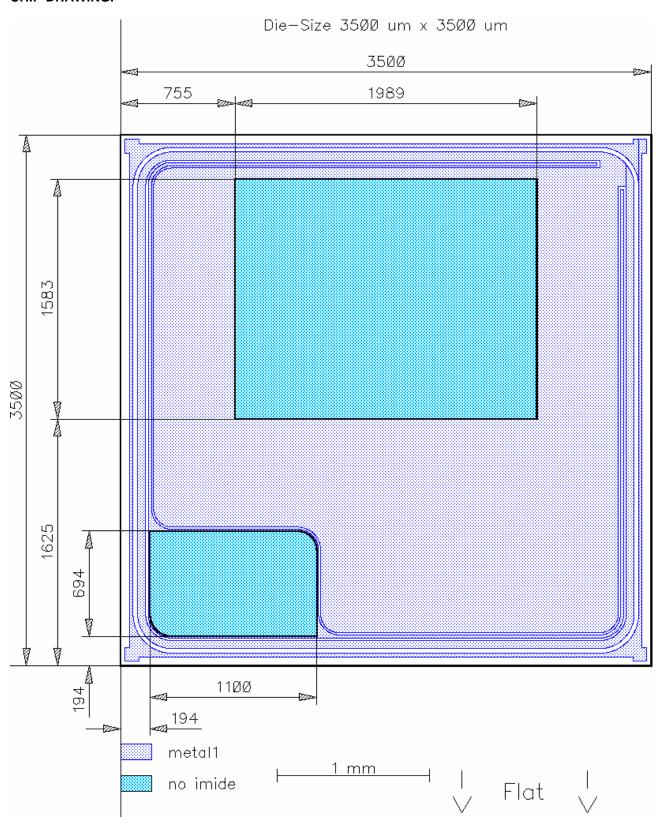
SWITCHING CHARACTERISTICS (tested at component), Inductive Load:

Parameter	Symbol	Conditions 1)	Value			Unit
- arameter	Symbol		min.	typ.	max.	Joint
Turn-on delay time	$t_{d(on)}$	T _j =125°C V _{CC} =300V	-	21	-	ns
Rise time	t_{r}	I _C =10A	-	8	-	
Turn-off delay time	$t_{d(off)}$	$V_{\text{GE}} = \pm 15/V$ $R_{\text{G}} = 27\Omega$	-	110	-	
Fall time	t_{f}		-	25	-	

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 device data sheet

FS 10 R06 XL4

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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