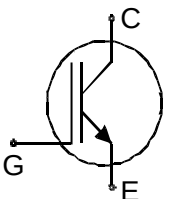
SIGC16T120CS

IGBT Chip in NPT-technology

FEATURES:
- 1200V NPT technology
- 180µm chip
- short circuit prove
- positive temperature coefficient
- easy paralleling

This chip is used for:
- SGP07N120

Applications:
- drives, SMPS, resonant applications



Chip Type	V_{CE}	I_{Cn}	Die Size	Package	Ordering Code
SIGC16T120CS	1200V	8A	4.04 x 4 mm^2	sawn on foil	Q67050-A4113

MECHANICAL PARAMETER:

Raster size	4.04 x 4	mm^2
Area total / active	16.16 / 10.4	
Emitter pad size	1.88x2.18	
Gate pad size	0.71x1.08	
Thickness	180	µm
Wafer size	150	mm
Flat position	0	deg
Max.possible chips per wafer	898 pcs	
Passivation frontside	Photoimide	
Emitter metalization	3200 nm Al Si 1%	
Collector metalization	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	∅ 0.65mm ; max 1.2mm	
Recommended Storage Environment	store in original container, in dry nitrogen, < 6 month at an ambient temperature of 23°C	

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SIGC16T120CS

MAXIMUM RATINGS:

Parameter	Symbol	Value	Unit
Collector-emitter voltage, T_j=25 °C	V_{CE}	1200	V
DC collector current, limited by T_{jmax}	I_C	1)	A
Pulsed collector current, t_p limited by T_{jmax}	I_{cpuls}	24	A
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
			min.	typ.	max.	
Collector-emitter breakdown voltage	$V_{(BR)CES}$	V_{GE}=0V , I_C=500µA	1200			V
Collector-emitter saturation voltage	$V_{CE(sat)}$	V_{GE}=15V, I_C=8A	2.5	3.1	3.6	
Gate-emitter threshold voltage	$V_{GE(th)}$	I_C=350µA , V_{GE}=V_{CE}	3.0	4.0	5.0	
Zero gate voltage collector current	I_{CES}	V_{CE}=1200V , V_{GE}=0V			1	µA
Gate-emitter leakage current	I_{GES}	V_{CE}=0V , V_{GE}=20V			120	nA

DYNAMIC CHARACTERISTICS (tested at component):

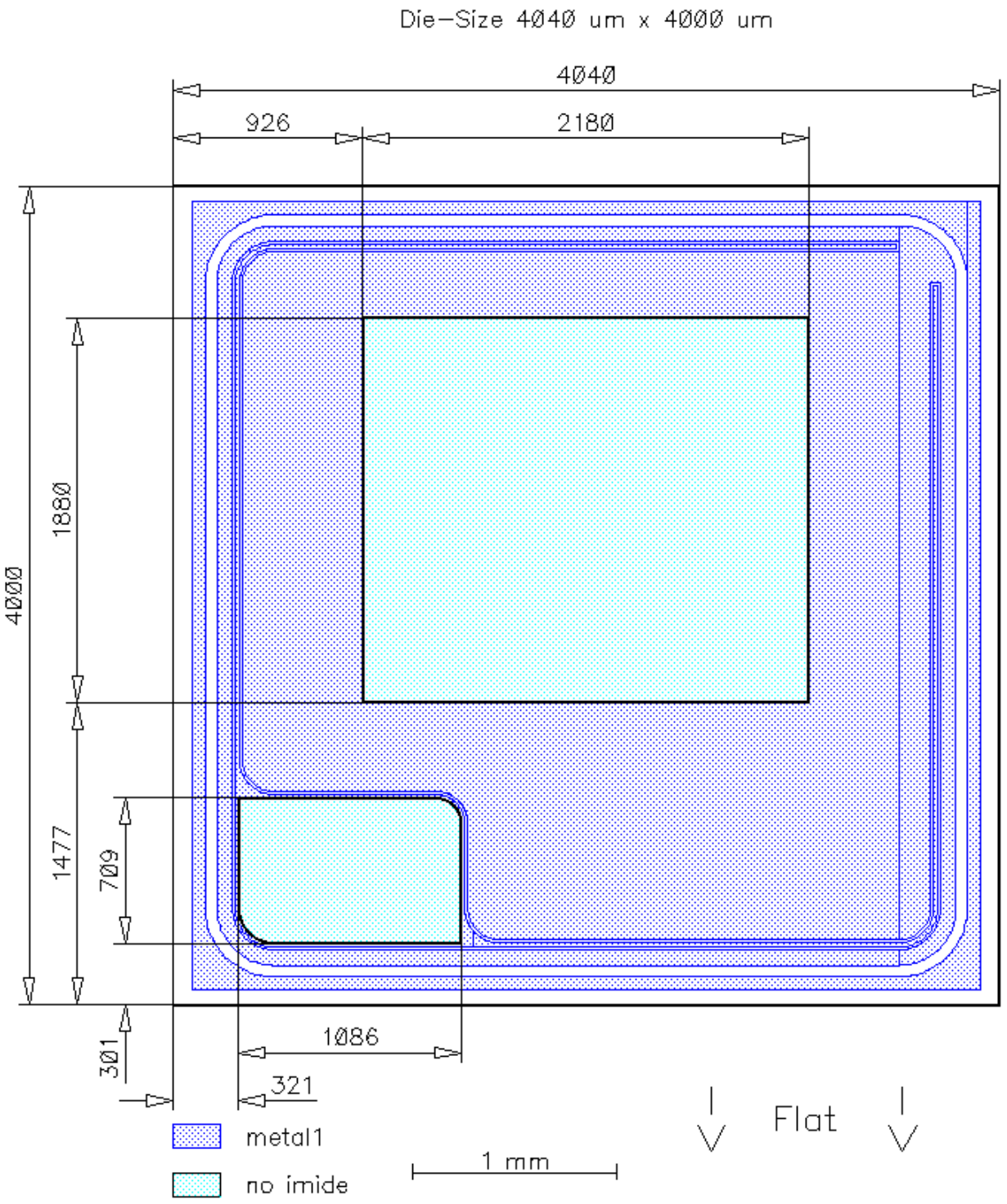
Parameter	Symbol	Conditions	Value			Unit
			min.	typ.	max.	
Input capacitance	C_{iss}	V_{CE}=25V,	-	720	870	pF
Output capacitance	C_{oss}	V_{GE}=0V,	-	90	110	
Reverse transfer capacitance	C_{rss}	f=1MHz	-	50	60	

SWITCHING CHARACTERISTICS (tested at component), Inductive Load:

Parameter	Symbol	Conditions*	Value			Unit
			min.	typ.	max.	
Turn-on delay time	$t_{d(on)}$	T_j=25°C	-	27	35	ns
Rise time	t_r	V_{CC}=800V,	-	29	38	
Turn-off delay time	$t_{d(off)}$	I_C=8A	-	440	570	
Fall time	t_f	V_{GE}=+15/0V, R_G=47Ω	-	21	27	

* switching conditions different to LowLoss, Standard, IGBT3; under comparable switching conditions 40% faster than Standard. Values also influenced by parasitic L- and C- in measurement and package.

CHIP DRAWING:



SIGC16T120CS

FURTHER ELECTRICAL CHARACTERISTICS:

This chip data sheet refers to the device data sheet	SGP07N120	Package : TO220

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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