Preliminary

SIGC6T120CS

IGBT Chip in NPT-technology

FEATURES:

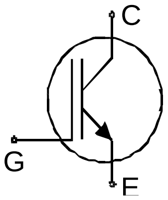
- 1200V NPT technology
- 180µm chip
- short circuit prove
- positive temperature coefficient
- easy paralleling

This chip is used for:

- SGP02N120

Applications:

- drives, SMPS, resonant applications



Chip Type	V_{CE}	I_{Cn}	Die Size	Package	Ordering Code
SIGC6T120CS	1200V	2A	2.45 x 2.25 mm^2	sawn on foil	Q67040-S4270

MECHANICAL PARAMETER:

Raster size	2.45 x 2.25	mm^2
Area total / active	5.512 / 2.5	
Emitter pad size	1.03x1.29	
Gate pad size	0.42x0.56	
Thickness	180	µm
Wafer size	150	mm
Flat position	0	deg
Max.possible chips per wafer	2794	
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	tbd	
Recommended Storage Environment	store in original container, in dry nitrogen, < 6 month	

Edited by INFINEON technologies AI IP DD HV2, L 7251-S, Edition 1, 22.03.2000

MAXIMUM RATINGS:

Parameter	**Symbol**	**Value**	**Unit**
Collector-emitter voltage	V_{CE}	1200	V
DC collector current, limited by T_{jmax}	I_C	2	A
Pulsed collector current, t_p limited by T_{jmax}	I_{cpuls}	4	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 °C, unless otherwise specified:

Parameter	**Symbol**	**Conditions**	**Value**			**Unit**
			min.	**typ.**	**max.**	
Collector-emitter breakdown voltage	$V_{(BR)CES}$	V_{GE}=0V , I_C=300µA	1200			V
Collector-emitter saturation voltage	$V_{CE(sat)}$	V_{GE}=15V, I_C=2A	2.5	3.1	3.6	
Gate-emitter threshold voltage	$V_{GE(th)}$	I_C=90µA , V_{GE}=V_{CE}	3.0	4.0	5.0	
Zero gate voltage collector current	I_{CES}	V_{CE}=1200V , V_{GE}=0V			10	µA
Gate-emitter leakage current	I_{GES}	V_{CE}=0V , V_{GE}=30V			120	nA

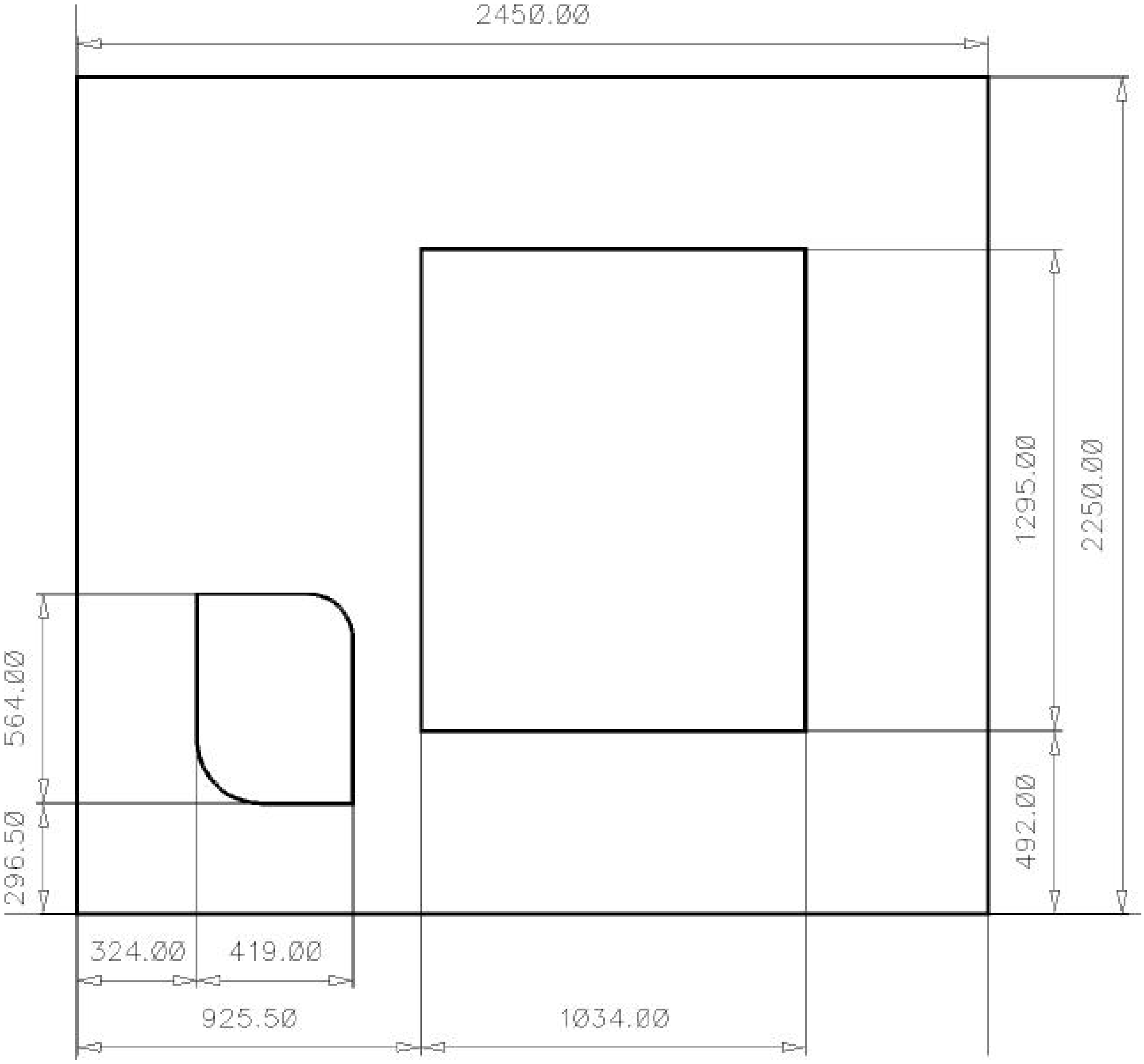
DYNAMIC CHARACTERISTICS (tested at component):

Parameter	**Symbol**	**Conditions**	**Value**			**Unit**
			min.	**typ.**	**max.**	
Input capacitance	C_{iss}	V_{CE}=25V, V_{GE}=0V, f=1MHz	-	205	250	pF
Output capacitance	C_{oss}		-	28	34	
Reverse transfer capacitance	C_{rss}		-	17	21	

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 V_{CC}=800V, I_C=2A V_{GE}=+15/0V, R_G=91Ω	-	23	30	ns
Rise time	t_r		-	16	21	
Turn-off delay time	$t_{d(off)}$		-	260	340	
Fall time	t_f		-	61	80	

CHIP DRAWING:



FURTHER ELECTRICAL CHARACTERISTICS:

This chip data sheet refers to the device data sheet	SGP02N120	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

Published by
Infineon Technologies AG i Gr.,
Bereich Kommunikation
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