Preliminary

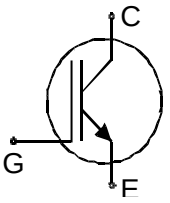
SIGC12T60SN

IGBT Chip in NPT-technology

FEATURES:
- 600V NPT technology
- 100µm chip
- short circuit prove
- positive temperature coefficient
- easy paralleling

This chip is used for:
- SGP10N60

Applications:
- drives



Chip Type	V_{CE}	I_{Cn}	Die Size	Package	Ordering Code
SIGC12T60SN	600V	10A	3.5 x 3.5 mm^2	sawn on foil	Q67041-A4664-A001

MECHANICAL PARAMETER:

Raster size	3.5 x 3.5	mm^2
Area total / active	12.25 / 7.1	
Emitter pad size	1.99x1.58	
Gate pad size	0.69x1.10	
Thickness	100	µm
Wafer size	125	mm
Flat position	270	deg
Max.possible chips per wafer	821	
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	

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MAXIMUM RATINGS:

Parameter	Symbol	Value	Unit
Collector-emitter voltage	V_{CE}	600	V
DC collector current, limited by T_{jmax}	I_C	21	A
Pulsed collector current, t_p limited by T_{jmax}	I_{cpuls}	42	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=500µA	600			V
Collector-emitter saturation voltage	$V_{CE(sat)}$	V_{GE}=15V, I_C=10A	1.6	2.0	2.5	
Gate-emitter threshold voltage	$V_{GE(th)}$	I_C=400µA , V_{GE}=V_{CE}	3.0	4.0	5.0	
Zero gate voltage collector current	I_{CES}	V_{CE}=600V , V_{GE}=0V			55	µA
Gate-emitter leakage current	I_{GES}	V_{CE}=0V , V_{GE}=30V			120	nA

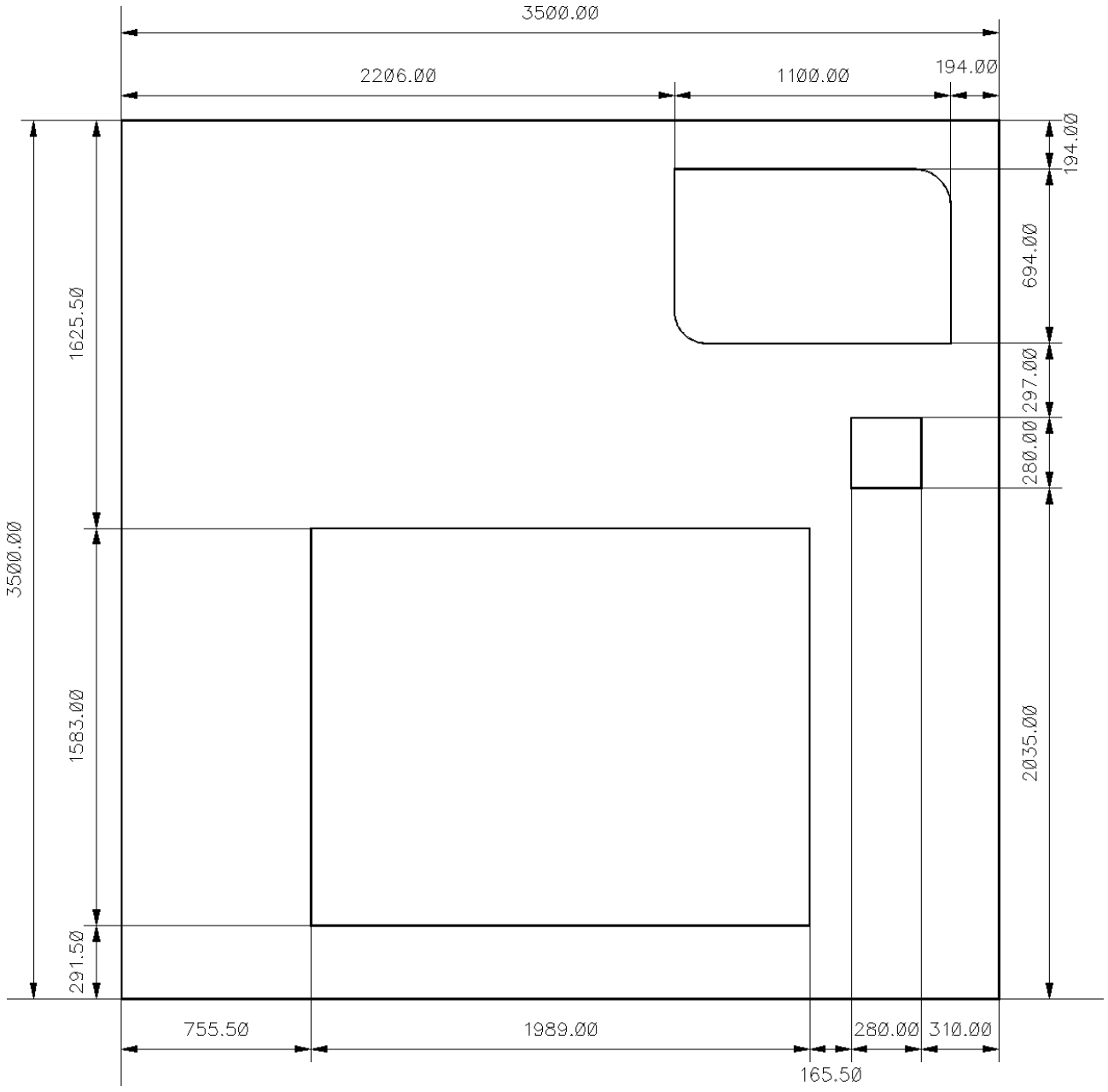
DYNAMIC CHARACTERISTICS (tested at component):

Parameter	Symbol	Conditions	Value			Unit
			min.	typ.	max.	
Input capacitance	C_{iss}	V_{CE}=25V,	-	800	960	pF
Output capacitance	C_{oss}	V_{GE}=0V,	-	84	100	
Reverse transfer capacitance	C_{rss}	f=1MHz	-	52	63	

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	-	24	29	ns
Rise time	t_r	V_{CC}=400V, I_C=15A	-	33	40	
Turn-off delay time	$t_{d(off)}$	V_{GE}=+15/0V, R_G=21Ω	-	234	280	
Fall time	t_f		-	46	55	

CHIP DRAWING:



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FURTHER ELECTRICAL CHARACTERISTICS:

This chip data sheet refers to the device data sheet	SGP10N60	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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