Preliminary

SIGC25T120CS2

IGBT Chip in NPT-technology

FEATURES:

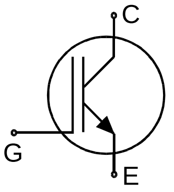
- 1200V NPT technology 175µm chip
- low turn-off losses
- short tail current
- positive temperature coefficient
- easy paralleling

This chip is used for:

- IGBT Modules

Applications:

- drives, SMPS, resonant applications



Chip Type	V_{CE}	I_{Cn}	Die Size	Package	Ordering Code
SIGC25T120CS2	1200V	15A	5.71 x 4.53 mm^2	sawn on foil	Q67050-A4197

MECHANICAL PARAMETER:

Raster size	5.71 x 4.53	mm^2
Emitter pad size	2x (2.18 x 1.6)	
Gate pad size	1.09 x 0.68	
Area total / active	25.9 / 18.7	
Thickness	175	µm
Wafer size	150	mm
Flat position	270	grd
Max.possible chips per wafer	555 pcs	
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	Al, <500µm	
Reject Ink Dot Size	∅ 0.65mm ; max 1.2mm	
Recommended Storage Environment	store in original container, in dry nitrogen, < 6 month	

MAXIMUM RATINGS:

Parameter	**Symbol**	**Value**	**Unit**
Collector-emitter voltage	V_{CE}	1200	V
DC collector current, limited by T_{jmax}	I_C	15	A
Pulsed collector current, t_p limited by T_{jmax}	I_{cpuls}	30	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=1.5mA	1200			V
Collector-emitter saturation voltage	$V_{CE(sat)}$	V_{GE}=15V, I_C=15A	2.7	3.2	3.7	
Gate-emitter threshold voltage	$V_{GE(th)}$	I_C=0.6mA , V_{GE}=V_{CE}	4.5	5.5	6.5	
Zero gate voltage collector current	I_{CES}	V_{CE}=1200V , V_{GE}=0V			100	µA
Gate-emitter leakage current	I_{GES}	V_{CE}=0V , V_{GE}=30V			120	nA

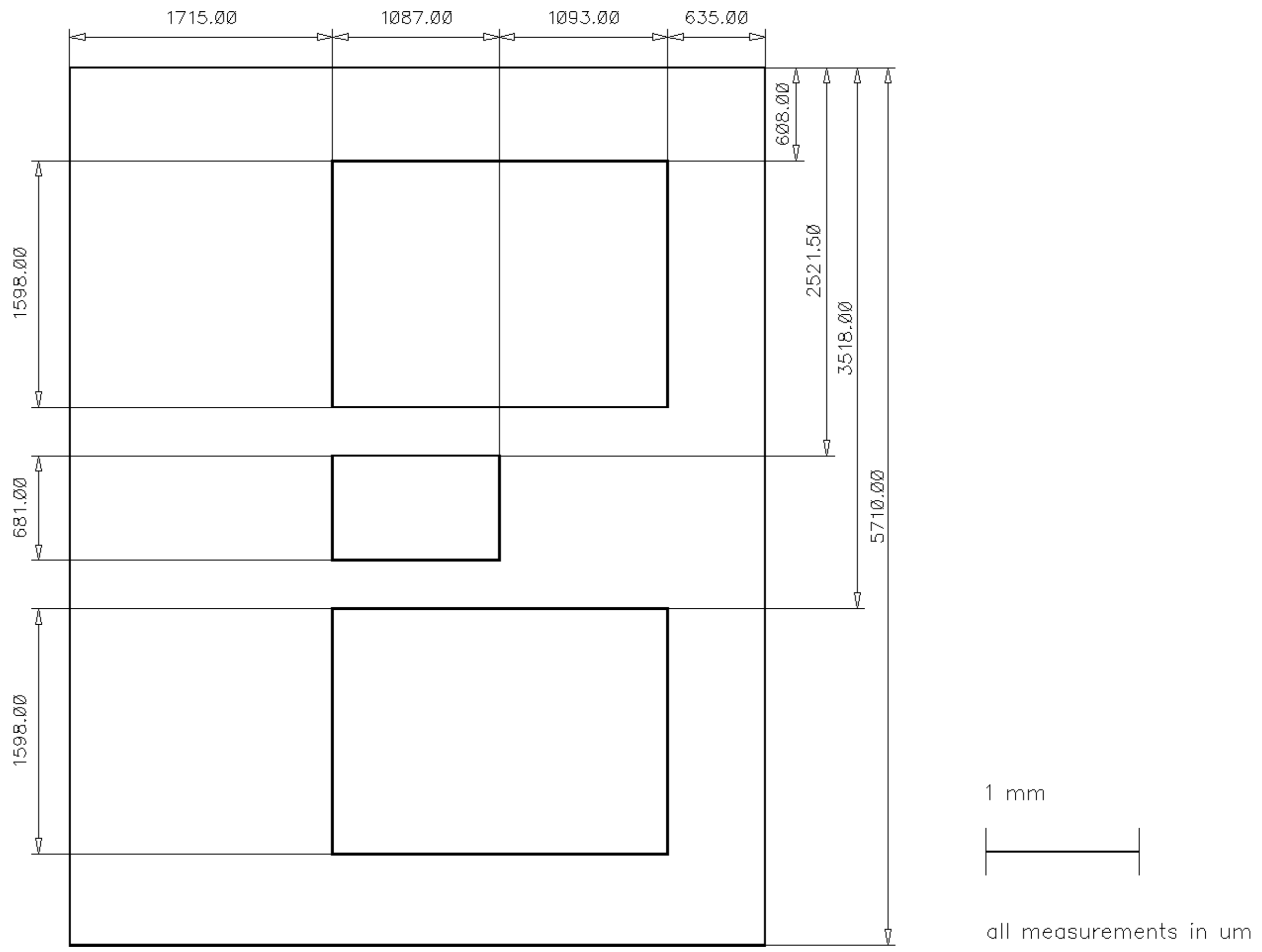
ELECTRICAL CHARACTERISTICS (tested at component):

Parameter	**Symbol**	**Conditions**	**Value**			**Unit**
			min.	**typ.**	**max.**	
Input capacitance	C_{iss}	V_{CE}=25V, V_{GE}=0V, f=1MHz	-	1000		pF
Output capacitance	C_{oss}		-	150		
Reverse transfer capacitance	C_{rss}		-	70		

SWITCHING CHARACTERISTICS (tested at component), Inductive Load

Parameter	**Symbol**	**Conditions**	**Value**			**Unit**
			min.	**typ.**	**max.**	
Turn-on delay time	$t_{d(on)}$	T_j=125°C V_{CC}=600V, I_C=15A, V_{GE}=-15/15V, R_G= 33Ω	-	tbd		ns
Rise time	t_r		-	tbd		
Turn-off delay time	$t_{d(off)}$		-	tbd		
Fall time	t_f		-	tbd		

CHIP DRAWING:



FURTHER ELECTRICAL CHARACTERISTICS:

This chip data sheet refers to the device data sheet		tbd

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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