Preliminary

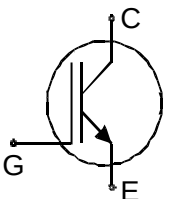
SIGC61T60NC

IGBT Chip in NPT-technology

FEATURES:
- 600V NPT technology
- 100µm chip
- short circuit prove
- 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
SIGC61T60NC	600V	75A	6.99 x 8.79 mm^2	sawn on foil	Q67050-A4160-A001

MECHANICAL PARAMETER:

Raster size	6.99 x 8.79	mm^2
Area total / active	61.44 / 53.7	
Emitter pad size	2x(2.98x5.48)	
Gate pad size	0.8 x 1.5	
Thickness	100	µm
Wafer size	150	mm
Flat position	90	deg
Max.possible chips per wafer	200	
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 at an ambient temperature of 23°C	

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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	75	A
Pulsed collector current, t_p limited by T_{jmax}	I_{cpuls}	150	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=3mA	600			V
Collector-emitter saturation voltage	$V_{CE(sat)}$	V_{GE}=15V, I_C=75A	1.7	2.1	2.5	
Gate-emitter threshold voltage	$V_{GE(th)}$	I_C=1.5mA, V_{GE}=V_{CE}	4.5	5.5	6.5	
Zero gate voltage collector current	I_{CES}	V_{CE}=600V, V_{GE}=0V			300	µA
Gate-emitter leakage current	I_{GES}	V_{CE}=0V, V_{GE}=0V			210	nA

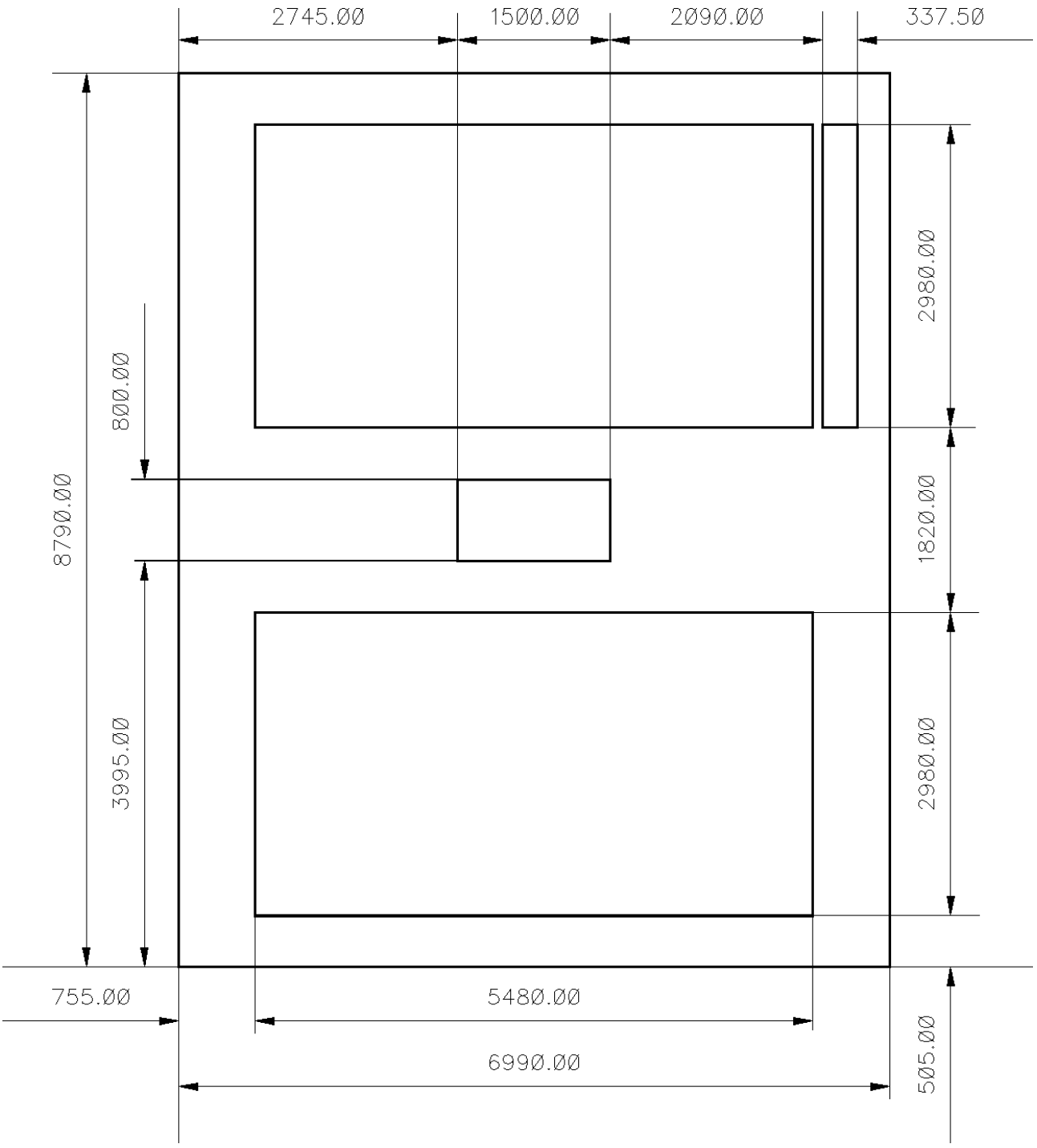
DYNAMIC CHARACTERISTICS (tested at component):

Parameter	Symbol	Conditions	Value			Unit
			min.	typ.	max.	
Input capacitance	C_{iss}	V_{CE}=25V	-	3.3	-	nF
Output capacitance	C_{oss}	V_{GE}=0V	-	tbd	-	
Reverse transfer capacitance	C_{rss}	f=1MHz	-	0.3	-	

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	-	65	-	ns
Rise time	t_r	V_{CC}=300V	-	25	-	
Turn-off delay time	$t_{d(off)}$	I_C=75A	-	170	-	
Fall time	t_f	V_{GE}=±15V R_G=3Ω	-	35	-	

CHIP DRAWING:



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FURTHER ELECTRICAL CHARACTERISTICS:

This chip data sheet refers to the device data sheet	BSM 75 GD 60 DLC	Econo Pack2 short pin

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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