

IGBT Chip in NPT-technology

FEATURES:

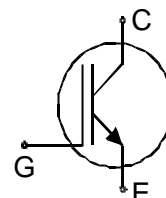
- 600V NPT technology
- 100µm chip
- positive temperature coefficient
- easy paralleling

This chip is used for:

- IGBT-Modules

Applications:

- drives



Chip Type	V _{CE}	I _{CN}	Die Size	Package	Ordering Code
SIGC42T60N	600V	50A	6.5 x 6.5 mm ²	sawn on foil	Q67041-A4692-A001

MECHANICAL PARAMETER:

Raster size	6.50 x 6.50	mm ²
Area total / active	42.25 / 35.6	
Emitter pad size	2x(3.0x2.85)	
Gate pad size	0.80 x 1.50	
Thickness	100	µm
Wafer size	125	mm
Flat position	90	deg
Max.possible chips per wafer	226	
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	

MAXIMUM RATINGS:

Parameter	Symbol	Value	Unit
Collector-emitter voltage	V_{CE}	600	V
DC collector current, limited by T_{jmax}	I_C	70	A
Pulsed collector current, t_p limited by T_{jmax}	I_{Cpuls}	140	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), $T_j=25^\circ\text{C}$, unless otherwise specified:

Parameter	Symbol	Conditions	Value			Unit
			min.	typ.	max.	
Collector-emitter breakdown voltage	$V_{(BR)CES}$	$V_{GE}=0V, I_C=2mA$	600			V
Collector-emitter saturation voltage	$V_{CE(sat)}$	$V_{GE}=15V, I_C=50A$	1.7	2.0	2.5	
Gate-emitter threshold voltage	$V_{GE(th)}$	$I_C=1mA, V_{GE}=V_{CE}$	4.5	5.5	6.5	
Zero gate voltage collector current	I_{CES}	$V_{CE}=600V, V_{GE}=0V$			150	μA
Gate-emitter leakage current	I_{GES}	$V_{CE}=0V, V_{GE}=30V$			120	nA

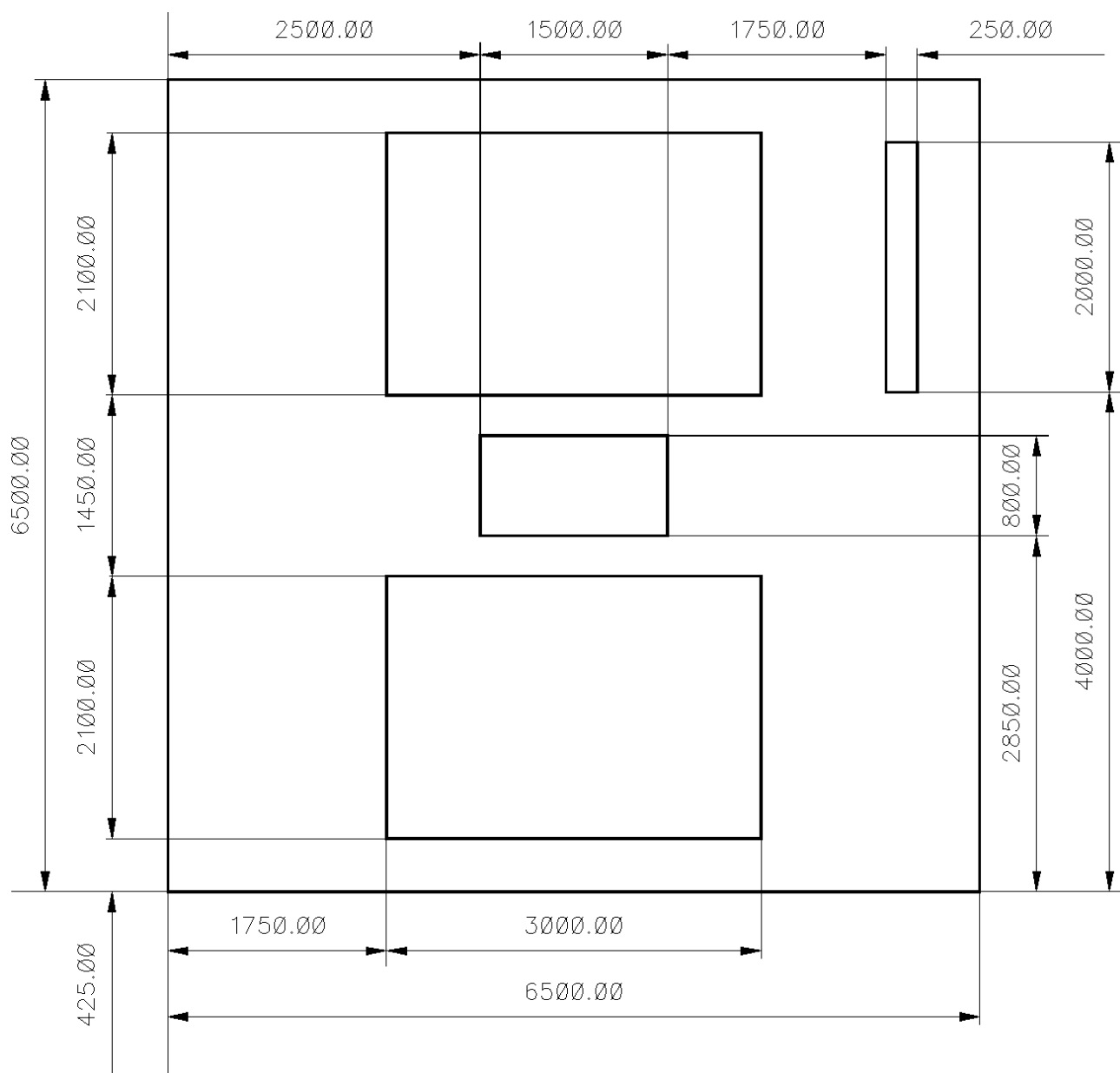
DYNAMIC CHARACTERISTICS (tested at component):

Parameter	Symbol	Conditions	Value			Unit
			min.	typ.	max.	
Input capacitance	C_{iss}	$V_{CE}=25V,$ $V_{GE}=0V,$ $f=1MHz$	-	2.2	-	nF
Output capacitance	C_{oss}		-	tbd	-	
Reverse transfer capacitance	C_{rss}		-	0.2	-	

SWITCHING CHARACTERISTICS (tested at component), Inductive Load:

Parameter	Symbol	Conditions	Value			Unit
			min.	typ.	max.	
Turn-on delay time	$t_{d(on)}$	$T_j=25^\circ\text{C}$ $V_{CC}=300V,$ $I_C=50A$ $V_{GE}=\pm 15V,$ $R_G=2.7\Omega$	-	40	-	ns
Rise time	t_r		-	9	-	
Turn-off delay time	$t_{d(off)}$		-	120	-	
Fall time	t_f		-	12	-	

CHIP DRAWING:





Preliminary

SIGC42T60N

FURTHER ELECTRICAL CHARACTERISTICS:

This chip data sheet refers to the
device data sheet

BSM50GD60DLCE3226

Econo Pack2 long 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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