

IGBT Chip in NPT-technology

FEATURES:

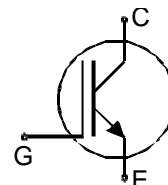
- 600V NPT technology
- 100µm chip
- short circuit prove
- positive temperature coefficient
- easy paralleling

This chip is used for:

- DuoPack SKP06N60

Applications:

- drives



Chip Type	V _{CE}	I _{CN}	Die Size	Package	Ordering Code
SIGC07T60SN	600V	6A	2.6 x 2.6 mm ²	sawn on foil	Q67041-A4672-A001

MECHANICAL PARAMETER:

Raster size	2.6 x 2.6	mm ²
Area total / active	6.76 / 4.3	
Emitter pad size	1.107 x 1.78	
Gate pad size	0.5 x 0.7	
Thickness	100	µm
Wafer size	125	mm
Flat position	0 //180	deg
Max.possible chips per wafer	1514	
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	12	A
Pulsed collector current, t_p limited by T_{jmax}	I_{Cpuls}	24	A
Gate emitter voltage	V_{GE}	± 20	V
Operating junction and storage temperature	T_j, T_{stg}	-55 ... +150	$^{\circ}\text{C}$

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	$V_{(BR)CES}$	$V_{GE}=0\text{V}$, $I_C=500\mu\text{A}$	600			V
Collector-emitter saturation voltage	$V_{CE(sat)}$	$V_{GE}=15\text{V}$, $I_C=6\text{A}$	1.6	2.0	2.5	
Gate-emitter threshold voltage	$V_{GE(th)}$	$I_C=200\mu\text{A}$, $V_{GE}=V_{CE}$	3.0	4.0	5.0	
Zero gate voltage collector current	I_{CES}	$V_{CE}=600\text{V}$, $V_{GE}=0\text{V}$			30	μA
Gate-emitter leakage current	I_{GES}	$V_{CE}=0\text{V}$, $V_{GE}=30\text{V}$			120	nA

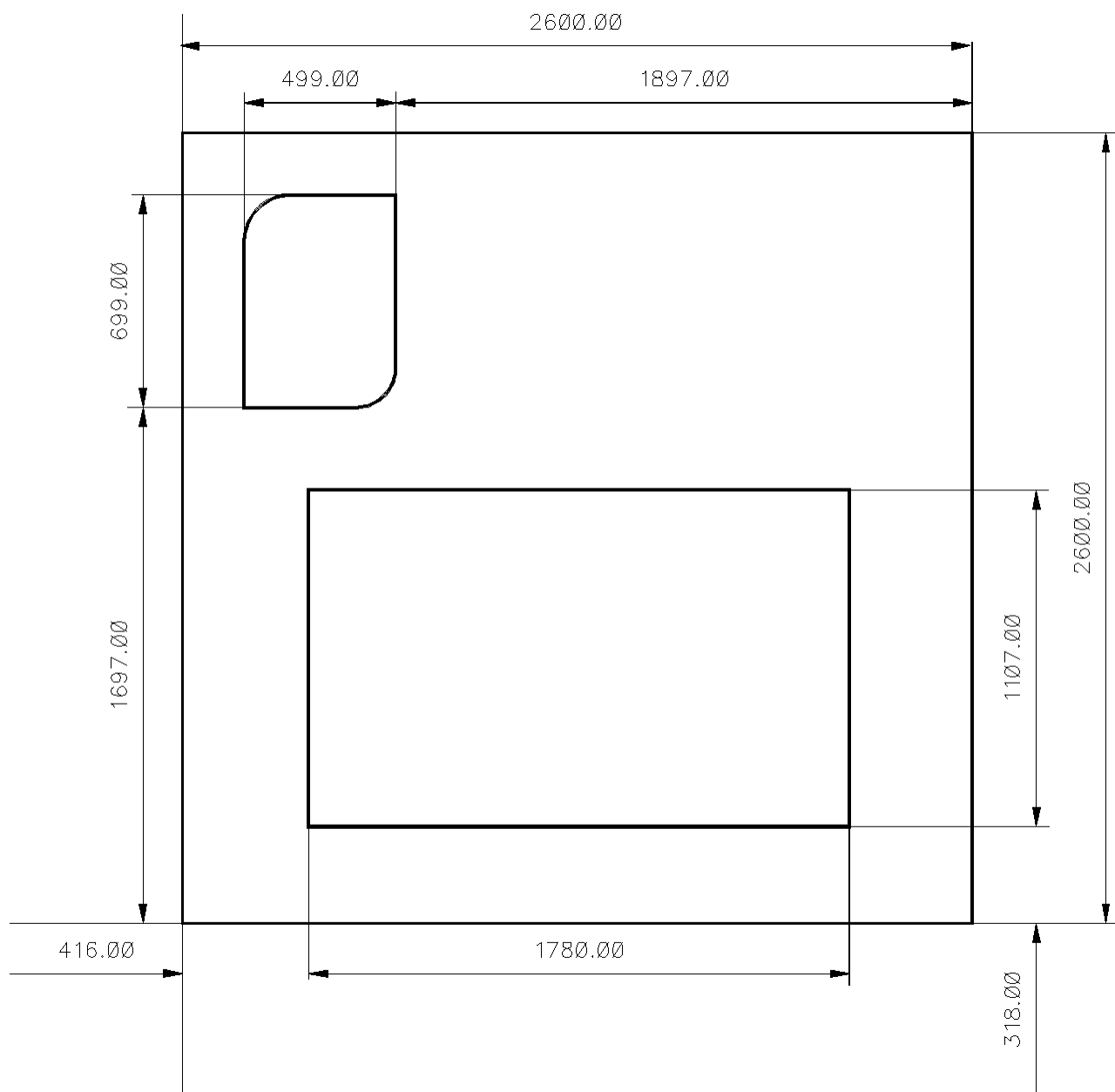
DYNAMIC CHARACTERISTICS (tested at component):

Parameter	Symbol	Conditions	Value			Unit
			min.	typ.	max.	
Input capacitance	C_{iss}	$V_{CE}=25\text{V}$,	-	350	420	pF
Output capacitance	C_{oss}	$V_{GE}=0\text{V}$,	-	38	46	
Reverse transfer capacitance	C_{rss}	$f=1\text{MHz}$	-	23	28	

SWITCHING CHARACTERISTICS (tested at component), Inductive Load:

Parameter	Symbol	Conditions	Value			Unit
			min.	typ.	max.	
Turn-on delay time	$t_{d(on)}$	$T_j=25^{\circ}\text{C}$	-	20	25	ns
Rise time	t_r	$V_{CC}=400\text{V}$,	-	20	24	
Turn-off delay time	$t_{d(off)}$	$I_C=6\text{A}$	-	220	264	
Fall time	t_f	$V_{GE}=+15/0\text{V}$,	-	54	65	
		$R_G=50\Omega$				

CHIP DRAWING:





Preliminary

SIGC07T60SN

FURTHER ELECTRICAL CHARACTERISTICS:

This chip data sheet refers to the
device data sheet

SKP06N60

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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