Preliminary

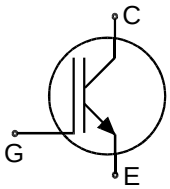
SIGC41T120R3L

IGBT^3 Chip

FEATURES:
- 1200V Trench + Field Stop technology
- 120µm chip
- low turn-off losses
- short tail current
- positive temperature coefficient
- easy paralleling

This chip is used for:
- power module

Applications:
- drives



Chip Type	V_{CE}	I_{Cn}	Die Size	Package	Ordering Code
SIGC41T120R3L	1200V	35A	6.5 x 6.37 mm^2	sawn on foil	Q67050-A4207-A101

MECHANICAL PARAMETER:

Raster size	6.5 x 6.37	mm
Emitter pad size (include gate pad)	4.99 x 4.89	
Gate pad size	1.14 x 1.14	
Area total / active	41.4 / 30.1	mm^2
Thickness	120	µm
Wafer size	150	mm
Flat position	180	grd
Max.possible chips per wafer	350 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 at an ambient temperature of 23°C	

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MAXIMUM RATINGS:

Parameter	Symbol	Value	Unit
Collector-emitter voltage	V_{CE}	1200	V
DC collector current, limited by T_{jmax}	I_C	35	A
Pulsed collector current, t_p limited by T_{jmax}	I_{cpuls}	70	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=35A	1.35	1.65	2.05	
Gate-emitter threshold voltage	$V_{GE(th)}$	I_C=1.5mA , V_{GE}=V_{CE}	5.0	5.8	6.5	
Zero gate voltage collector current	I_{CES}	V_{CE}=1200V , V_{GE}=0V			250	µA
Gate-emitter leakage current	I_{GES}	V_{CE}=0V , V_{GE}=30V			600	nA
Integrated gate resistor	R_{Gint}			6		Ω

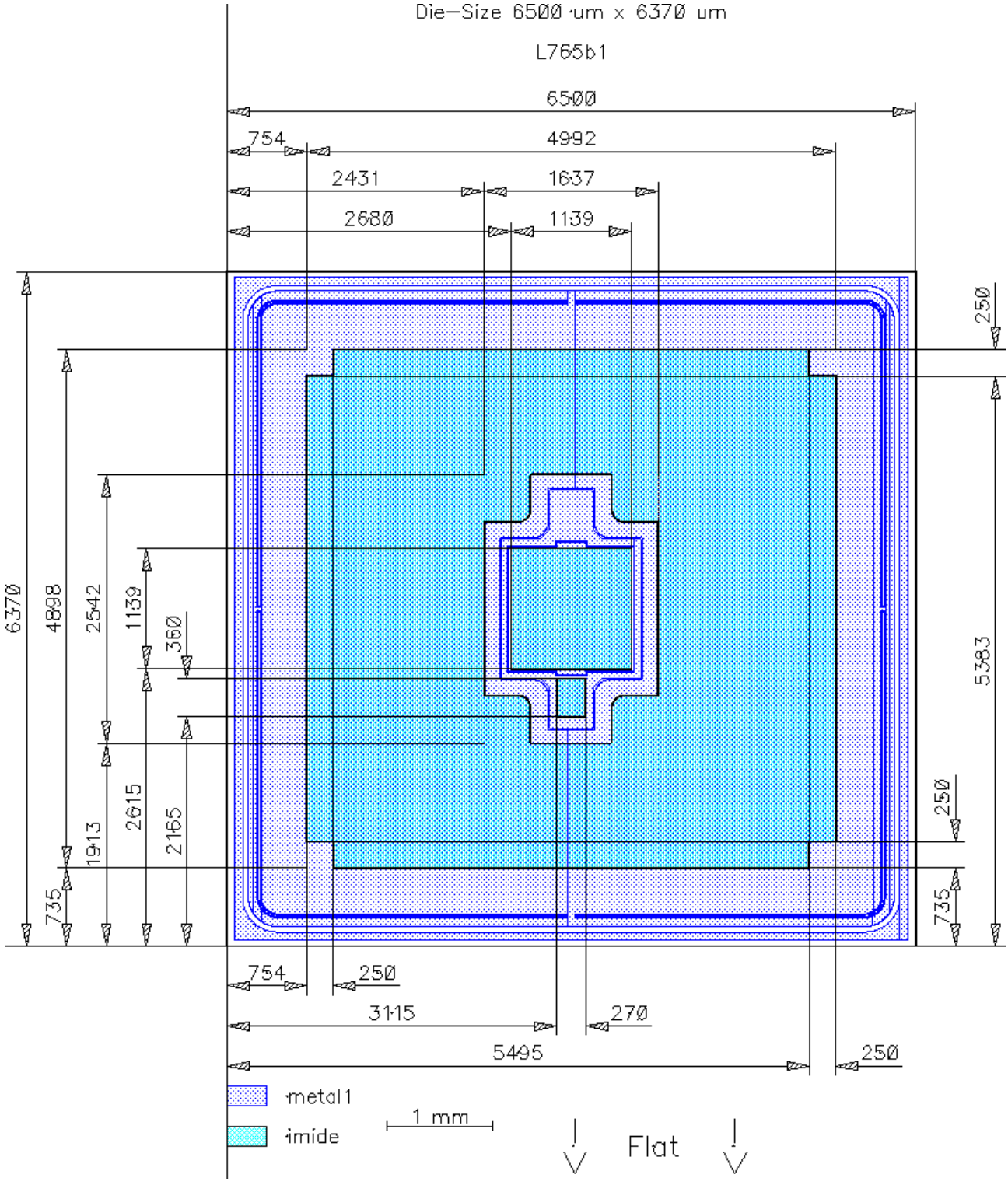
ELECTRICAL CHARACTERISTICS (tested at component):

Parameter	Symbol	Conditions	Value			Unit
			min.	typ.	max.	
Input capacitance	C_{iss}	V_{CE}=25V,		2530		pF
Output capacitance	C_{oss}	V_{GE}=0V,		132		
Reverse transfer capacitance	C_{rss}	f=1MHz		115		

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		tbd		ns
Rise time	t_r	V_{CC}=600V,		tbd		
Turn-off delay time	$t_{d(off)}$	I_C=35A,		tbd		
Fall time	t_f	V_{GE}=-15/15V, R_G= 27Ω		tbd		

CHIP DRAWING:



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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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