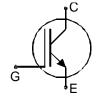
IGBT³ Chip

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
SIGC20T120L	1200V	15A	4.41 x 4.47 mm ²	sawn on foil	Q67050- A4268-A101

MECHANICAL PARAMETER:

Raster size	4.41 x 4.47				
Emitter pad size	2.99 x 2.9				
Gate pad size	1.1 x 0.7				
Area total / active	19.7 / 12.8	mm ²			
Thickness	120	μm			
Wafer size	150	mm			
Flat position	0	grd			
Max.possible chips per wafer	748 pcs				
Passivation frontside	Photoimide				
Emitter metallization	3200 nm AlSiCu				
Collector metallization	1400 nm Ni Ag –system suitable for epoxy and soft solder die bonding				
Die bond	electrically conductive glue or solder				
Wire bond	AI, <500μm				
Reject Ink Dot Size	Ø 0.65mm; max 1.2mm				
Recommended Storage Environment	store in original container, in dry nitrogen, < 6 month at an ambient temperature of 23°C				



MAXIMUM RATINGS:

Parameter	Symbol	Value	Unit
Collector-emitter voltage, T_j =25 °C	V _{CE}	1200	V
DC collector current, limited by T _{jmax}	I _C	1)	А
Pulsed collector current, t _p limited by T _{jmax}	I _{cpuls}	45	Α
Gate emitter voltage	V _{GE}	±20	V
Operating junction and storage temperature	T_j , T_{stg}	-55 + 150	°C

¹⁾ depending on thermal properties of assembly

STATIC CHARACTERISTICS (tested on chip), T_{j} =25 °C, unless otherwise specified:

Parameter	Symbol	Conditions	Value			Unit
i arameter		Conditions	min.	typ.	max.	
Collector-emitter breakdown voltage	V _{(BR)CES}	V_{GE} =0V , I_{C} = 0.5mA	1200			
Collector-emitter saturation voltage	V _{CE(sat)}	V _{GE} =15V, I _C =15A	1.35	1.65	2.05	V
Gate-emitter threshold voltage	V _{GE(th)}	I_C =600 μ A , V_{GE} = V_{CE}	5.0	5.8	6.5	
Zero gate voltage collector current	I _{CES}	V _{CE} =1200V , V _{GE} =0V			2	μA
Gate-emitter leakage current	I_{GES}	V _{CE} =0V , V _{GE} =20V			120	nA
Integrated gate resistor	R _{Gint}					Ω

ELECTRICAL CHARACTERISTICS (tested at component):

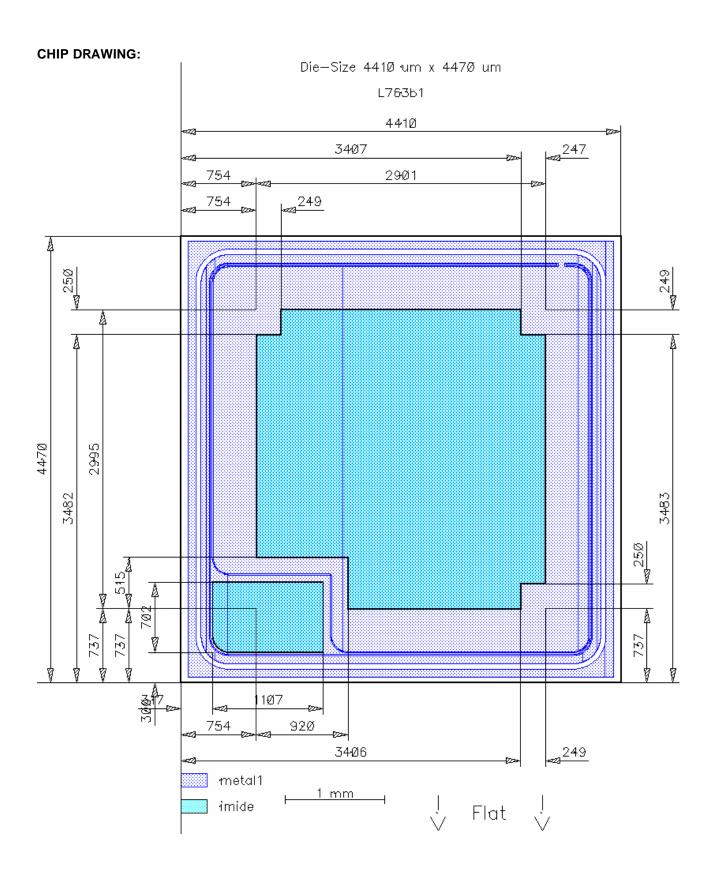
Parameter	Symbol	Conditions	Value			Unit
raiametei	Symbol	Conditions	min.	typ.	max.	Onne
Input capacitance	Ciss	V _{CE} =25V,		1090		pF
Output capacitance	Coss	$V_{GE}=0V$,		58		
Reverse transfer capacitance	Crss	f=1MHz		48		

SWITCHING CHARACTERISTICS (tested at component), Inductive Load

Parameter	Symbol	Conditions 1)	Value			Unit
- arameter			min.	typ.	max.	Joint
Turn-on delay time	$t_{d(on)}$	<i>T</i> _j =125°C		0.09		μs
Rise time	t_{r}	$V_{\rm CC} = 600 \text{V}$,		0.03		
Turn-off delay time	$t_{d(off)}$	I _C =15A, V _{GE} =-15/15V,		0.52		
Fall time	t_{f}	$R_{\rm G}$ = 62 Ω		0.12		

¹⁾ values also influenced by parasitic L- and C- in measurement and package.







This chip data sheet refers to the device data sheet

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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