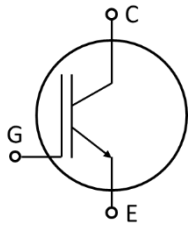
IGBT Chip

Features:

- 1200V Trench & Field stop technology
- Low switching losses
- Positive temperature coefficient
- Easy paralleling

Applications:

- UPS system
- Energy Storage System
- Solar Inverters



Mechanical parameters

Die size	8.100×11.500	mm²
Emitter pad size	See chip drawing	
Gate pad size	1.200×0.750	
Area total	93.15	
Thickness	105	μm
Wafer size	200	mm
Max. possible chips per wafer	265	
Passivation front side	Polyimide	
Pad metal	AlCu with Ti/TiN (5.0μm & 500A/600A)	
Backside metal	AlSi/Ti/NiV/Ag	

Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-Emitter voltage	V_{CE}	1200	V
DC collector current	I_C	180	A
Operating junction temperature	T_{vj}	-40 … +175	°C
Gate emitter voltage	V_{GE}	±20	V

Static Characteristics (tested on wafer), T_{vj}=25°C

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
Collector-Emitter breakdown voltage	$V_{(BR)CES}$	V_{CE}=0V, I_C=1mA	1200			V
Collector-Emitter saturation voltage	V_{CEsat}	V_{GE}=15V, I_C=180A		1.7	2.1	
Gate-Emitter threshold voltage	$V_{GE(th)}$	I_C=2.6mA, V_{GE}= V_{CE}	4.4	5.0	5.6	
Zero gate voltage collector current	I_{CES}	V_{CE}=1200V, V_{GE}= 0V			10	uA
Gate-Emitter leakage current	I_{GES}	V_{CE}=0V, V_{GE}= 20V			200	nA
Integrated gate resistor	r_G a)			3.3		Ω
Input capacitance	C_{ies} a)	V_{CE}=25V, V_{GE}=0V, f=100kHz		64.9		nF
Output capacitance	C_{oes} a)			1.52		
Reverse transfer capacitance	C_{res} a)			0.25		

a) tested on device

Further Electrical Characteristic

Switching characteristics and thermal properties are depending strongly on module design and mounting technology and can therefore not be specified for a bare die.

Application example	S3L540R12GA7U_H20

Chip Drawing