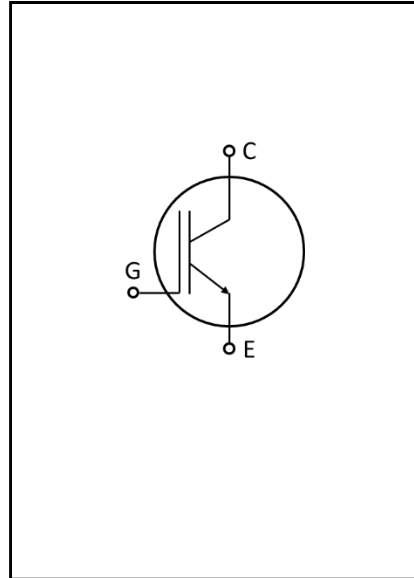
IGBT Chip

Features:

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



Applications:

- Inverter
- Welding machine
- Induction heating

Mechanical parameters

Die size	9.876×9.880	mm^2
Emitter pad size	See chip drawing	
Gate pad size	1.0839×1.0449	
Area total	97.57	
Thickness	120	μm
Wafer size	200	mm
Max. possible chips per wafer	255	
Passivation front side	Polyimide	
Pad metal	AlCu with Ti/TiN (4μm & 300A/1000A)	
Backside metal	Al/Ti/Ni/Ag	

Maximum Ratings

Parameter	**Symbol**	**Value**	**Unit**
Collector-Emitter voltage	V_{CE}	1200	V
DC collector current	I_C	100	A
Operating junction temperature	T_{vj}	-40 … +175	°C
Gate emitter voltage	V_{GE}	±20	V
Short circuit data	t_{SC}	10	µs

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_{GE}=0V, I_C=1mA	1200			V
Collector-Emitter saturation voltage	V_{CEsat}	V_{GE}=15V, I_C=100A		2.07	2.47	V
Gate-Emitter threshold voltage	$V_{GE(th)}$	I_C=3.8mA, V_{GE}= V_{CE}	5.2	5.8	6.4	V
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			100	nA
Integrated gate resistor	r_G [a)]			8.23		Ω
Input capacitance	C_{ies} [a)]	V_{CE}=25V, V_{GE}=0V, f=100kHz		5.48		nF
Reverse transfer capacitance	C_{res} [a)]	V_{CE}=25V, V_{GE}=0V, f=100kHz		0.22		nF

Chip Drawing