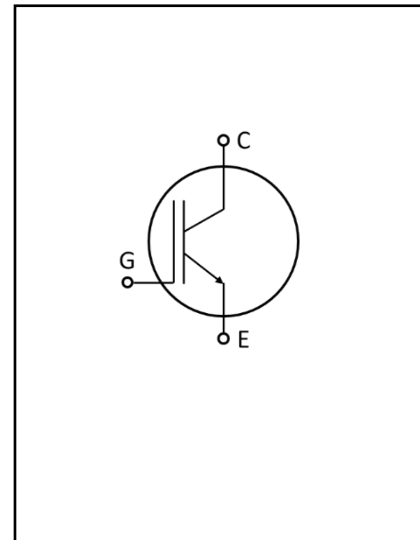
IGBT Chip

Features:

- 650V Trench & Field stop technology
- Low switching losses
- Positive temperature coefficient
- Easy paralleling



Applications:

- Charging piles

Mechanical parameters

Die size	4.382×4.382	mm^2
Emitter pad size	See chip drawing	
Gate pad size	0.5×0.5	
Area total	19.20	
Thickness	70	µm
Scribe line Size	80	
Wafer size	200	mm
Max. possible chips per wafer	1411	
Passivation front side	Polyimide	
Pad metal	AlCu with Ti/TiN (5.0µm & 200A/700A)	
Backside metal	Al/Ti/Ni/Ag	

Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-Emitter voltage	V_{CE}	650	V
DC collector current	I_C	50	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_{GE}=0V, I_C=1mA	650			V
Collector-Emitter saturation voltage	V_{CEsat}	V_{GE}=15V, I_C=50A		1.70	2.10	V
Gate-Emitter threshold voltage	$V_{GE(th)}$	I_C=0.5mA, V_{GE}= V_{CE}	4.4	5.0	5.6	V
Zero gate voltage collector current	I_{CES}	V_{CE}=650V, V_{GE}= 0V			10	uA
Gate-Emitter leakage current	I_{GES}	V_{CE}=0V, V_{GE}= 20V			100	nA
Integrated gate resistor	r_G			None		Ω
Input capacitance	C_{ies}	V_{CE}=25V, V_{GE}=0V, f=100kHz		4.96		nF
Reverse transfer capacitance	C_{res}	V_{CE}=25V, V_{GE}=0V, f=100kHz		0.09		nF

Chip Drawing