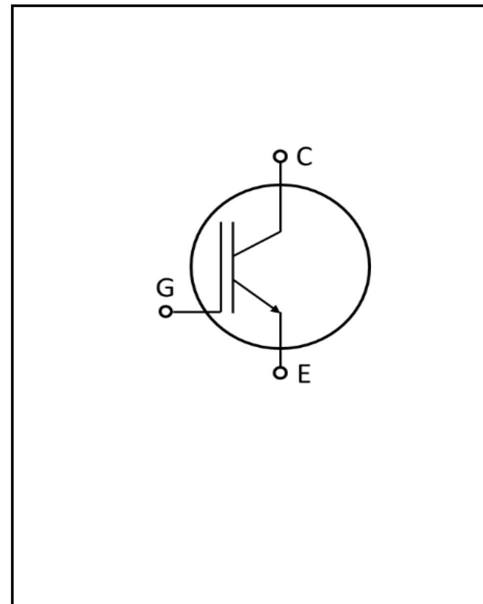
IGBT Chip

Features:

- 1700V Trench & Field stop technology
- Low Vcesat
- Positive temperature coefficient
- Easy paralleling

Applications:

- Power drives



Mechanical parameters

<table>
<tr><td>Die size</td><td>12.066×17.980</td><td rowspan="4">mm^2</td></tr>
<tr><td>Emitter pad size</td><td>See chip drawing</td></tr>
<tr><td>Gate pad size</td><td>1.178×0.755</td></tr>
<tr><td>Area total</td><td>216.95</td></tr>
<tr><td>Thickness</td><td>190</td><td rowspan="2">µm</td></tr>
<tr><td>Scribe line Size</td><td>80</td></tr>
<tr><td>Wafer size</td><td>200</td><td>mm</td></tr>
<tr><td>Max. possible chips per wafer</td><td colspan="2">110</td></tr>
<tr><td>Passivation front side</td><td colspan="2">Polyimide</td></tr>
<tr><td>Pad metal</td><td colspan="2">AlCu with Ti/TiN (5.0µm & 200A/700A)</td></tr>
<tr><td>Backside metal</td><td colspan="2">Al/Ti/Ni/Ag</td></tr>
</table>

Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-Emitter voltage	V_{CE}	1700	V
DC collector current	I_C	200	A
Operating junction temperature	T_{vj}	-40 … +150	ºC
Gate emitter voltage	V_{GE}	±20	V
Short circuit data	t_{SC}	10	µs

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

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
Collector-Emitter breakdown voltage	$V_{(BR)CES}$	V_{GE}=0V, I_C=1mA	1700			V
Collector-Emitter saturation voltage	V_{CEsat}	V_{GE}=15V, I_C=200A		1.95	2.35	
Gate-Emitter threshold voltage	$V_{GE(th)}$	I_C=7.4mA, V_{GE}= V_{CE}	5.2	5.8	6.4	
Zero gate voltage collector current	I_{CES}	V_{CE}=1700V, V_{GE}= 0V			10	uA
Gate-Emitter leakage current	I_{GES}	V_{CE}=0V, V_{GE}= 20V			200	nA
Integrated gate resistor	r_G			3.5		Ω
Input capacitance	C_{ies}	V_{CE}=25V, V_{GE}=0V, f=1MHz		19.67		nF
Reverse transfer capacitance	C_{res}			0.82		

Chip Drawing