

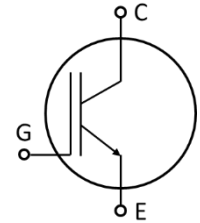
IGBT Chip

Features:

- 1700V Trench & Field stop technology
- Low V_{cesat}
- Positive temperature coefficient
- Easy paralleling

Applications:

- Power drives



Mechanical parameters

Die size	16 × 11.988	mm ²
Emitter pad size	See chip drawing	
Gate pad size	1.4 × 0.9	
Area total	191.81	
Thickness	190	μm
Scribe line Size	80	
Wafer size	300	mm
Max. possible chips per wafer	306	
Passivation front side	Polyimide	
Pad metal	AlCu with Ti/TiN (5μm & 500A/800A)	
Backside metal	Al/Ti/Ni/Ag	

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	°C
Gate emitter voltage	V_{GE}	±20	V
Short circuit data	t_{sc}	10	μs

Static Characteristics (tested on wafer), $T_{vj}=25^{\circ}\text{C}$

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
Collector-Emitter breakdown voltage	$V_{(BR)CES}$	$V_{CE}=0\text{V}, I_C=1\text{mA}$	1700			V
Collector-Emitter saturation voltage	V_{CEsat}	$V_{GE}=15\text{V}, I_C=200\text{A}$		2.0	2.35	
Gate-Emitter threshold voltage	$V_{GE(th)}$	$I_C=8\text{mA}, V_{GE}=V_{CE}$	5.2	5.8	6.4	
Zero gate voltage collector current	I_{CES}	$V_{CE}=1700\text{V}, V_{GE}=0\text{V}$			10	μA
Gate-Emitter leakage current	I_{GES}	$V_{CE}=0\text{V}, V_{GE}=20\text{V}$			200	nA
Integrated gate resistor	r_G			2.25		Ω
Input capacitance	C_{ies}	$V_{CE}=25\text{V}, V_{GE}=0\text{V},$ $f=100\text{KHz}$		25		nF
Reverse transfer capacitance	C_{res}			0.17		

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	SF600R17D6B
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Chip Drawing

Unit: μm

