

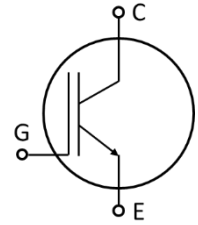
IGBT Chip

Features:

- 1200V Trench & Field stop technology
- Low V_{cesat}
- Positive temperature coefficient
- Easy paralleling

Applications:

- High Power Converters
- Inverter



Mechanical parameters

Die size	12.066 × 15.980	mm ²
Emitter pad size	See chip drawing	
Gate pad size	1.22 × 0.77	
Area total	192.815	
Thickness	120	μm
Scribe line Size	80	
Wafer size	200	mm
Max. possible chips per wafer	127	
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}	1200	V
DC collector current	I_C	200	A
Operating junction temperature	T_{vj}	-40 ~ 175	°C
Gate emitter voltage	V_{GE}	±20	V

Short circuit data	t_{SC}	10	μs
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Static Characteristics (tested on wafer), $T_{vj}=25^{\circ}C$

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}	$V_{GE}=15V, I_C=200A$		1.65	2.05	
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}	$V_{CE}=1200V, V_{GE}=0V$			10	μA
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}	$V_{CE}=25V, V_{GE}=0V,$		17.48		nF
Reverse transfer capacitance	C_{res}	$f=100kHz$		0.73		

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	SF600R12D6
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Chip Drawing

