

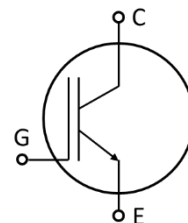
## IGBT Chip

### Features:

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

### Applications:

- Photovoltaic



### Mechanical parameters

Die size	6.55×6.55	mm <sup>2</sup>
Emitter pad size	See chip drawing	
Gate pad size	0.82×0.53	
Area total	42.903	
Thickness	110	μm
Wafer size	200	mm
Max. possible chips per wafer	605	
Passivation front side	Polyimide	
Pad metal	AlCu with Ti/TiN (4μm & 400A/150A)	
Backside metal	Al/Ti/Ni/Ag	

### Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-Emitter voltage	$V_{CE}$	1200	V
DC collector current	$I_C$	75	A
Operating junction temperature	$T_{vj}$	-40 ... +175	°C
Gate emitter voltage	$V_{GE}$	±20	V

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

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
Collector-Emitter breakdown voltage	$V_{(BR)CES}$	$V_{GE}=0\text{V}, I_C=1\text{mA}$	1200			V
Collector-Emitter saturation voltage	$V_{CEsat}$	$V_{GE}=15\text{V}, I_C=75\text{A}$		2.25	2.65	
Gate-Emitter threshold voltage	$V_{GE(th)}$	$I_C=2.6\text{mA}, V_{GE}=V_{CE}$	5.1	5.7	6.3	
Zero gate voltage collector current	$I_{CES}$	$V_{CE}=1200\text{V}, V_{GE}=0\text{V}$			10	$\mu\text{A}$
Gate-Emitter leakage current	$I_{GES}$	$V_{CE}=0\text{V}, V_{GE}=20\text{V}$			100	nA
Integrated gate resistor	$r_G$			none		$\Omega$
Input capacitance	$C_{ies}$	$V_{CE}=25\text{V}, V_{GE}=0\text{V},$ $f=100\text{ kHz}$		7.7		nF
Output capacitance	$C_{oes}$			0.28		
Reverse transfer capacitance	$C_{res}$			0.13		

## 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	SD75R12A6U
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Chip Drawing

