



# HG200A650V8-1

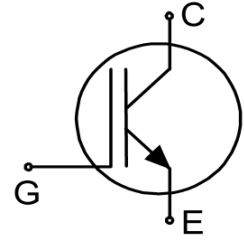
## 650V/ 200A IGBT

### Features:

- 650V trench & field stop technology
- Low switching losses
- Positive temperature coefficient

### Applications:

- Traction Inverter for HEV/EV
- UPS
- Auxiliary DC/AC Converter



Chip Type	VCE	Icn	Die Size	Package
IGBT	1200V	200A	9900x 6900 $\mu\text{m}^2$	Wafer

### Mechanical Parameters

Die Size	9900x 6900	$\mu\text{m}^2$
Wafer size	200	mm
Maximum possible chips per wafer	371ea	
Pad metal	5 $\mu\text{m}$ (AlCu)	
Thickness	63 $\mu\text{m}$	
Scribe Line	80 $\mu\text{m}$	
Backside metal	15KA (Al Si Ti Ni Ag)	
Recommanded Storage environment	Store in original container, in dry nitrogen, in dark environment, <6 months at an ambient temperture of 23°C	



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## Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-emitter voltage, $T_j=25^\circ\text{C}$	$V_{CE}$	650	V
DC collector current, limited by $T_{j\max}^1$	$I_C$	200	A
Operating Junction and Storage Temperature Rang	$T_J, T_S$	175 -55 to 175	$^\circ\text{C}$
Gate-emitter voltage	$V_{GE}$	$\pm 20$	V

## Electrical Characteristics, $T_j=25^\circ\text{C}$

Parameter	Symbol	Conditions	Value			Unit
			min.	typ.	max.	
Collector-emitter breakdown voltage	$V_{(BR)CES}$	$V_{GE}=0\text{V}, I_C=1.0\text{mA}$	650	-	-	V
Collector-emitter saturation voltage	$V_{CE(sat)}$	$V_{GE}=15\text{V}, I_C=200\text{A}$		1.65	1.85	
Gate-emitter threshold voltage	$V_{GE(th)}$	$V_{GE}=V_{CE}, I_C=2.4\text{mA}$	3.6	4.6	5.6	
Zero gate voltage collector current	$I_{CES}$	$V_{GE}=0\text{V}, V_{CE}=650\text{V}$	-	-	1	$\mu\text{A}$
Gate-emitter leakage current	$I_{GES}$	$V_{CE}=0\text{V}, V_{GE}=\pm 20\text{V}$	-	-	100	nA
Integrated gate resistor	$r_G$			1		$\Omega$

<sup>1</sup> Depending on thermal properties on assembly.



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Chip Drawing:

Die-Size 9980  $\mu\text{m}$   $\times$  6980  $\mu\text{m}$   
(including scribe line)

