

# International IOR Rectifier

# IRGC8B120UB

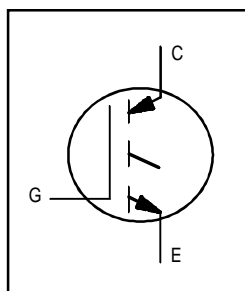
## IRGC8B120UB IGBT Die in Wafer Form

### Features

- GEN5 Non Punch Through (NPT) Technology
- UltraFast
- 10µs Short Circuit Capability
- Square RBSOA
- Positive  $V_{CE(on)}$  Temperature Coefficient

### Benefits

- Benchmark Efficiency above 20KHz
- Optimized for Welding, UPS, and Induction Heating
- Rugged with UltraFast Performance
- Excellent Current Sharing in Parallel Operation
- Qualified for Industrial Market



1200 V  
 $I_{C(nom)} = 8A$   
 $V_{CE(on)}$  typ. = 3.63V @  
 $I_{C(nom)}$  @ 25°C  
 UltraFast IGBT  
 Short Circuit Rated  
 150mm Wafer

### Electrical Characteristics ( Wafer Form )

Parameter	Description	Guaranteed (Min/Max)	Test Conditions
$V_{CE(on)}$	Collector-to-Emitter Saturation Voltage	2.77V Min., 3.82V Max.	$I_C = 5.0A, T_J = 25^\circ C, V_{GE} = 15V$
$V_{(BR)CES}$	Collector-to-Emitter Breakdown Voltage	1200V Min.	$T_J = 25^\circ C, I_{CES} = 100\mu A, V_{GE} = 0V$
$V_{GE(th)}$	Gate Threshold Voltage	4.4V Min., 6.0V Max.	$V_{GE} = V_{CE}, T_J = 25^\circ C, I_C = 125\mu A$
$I_{CES}$	Zero Gate Voltage Collector Current	5.0 µA Max.	$T_J = 25^\circ C, V_{CE} = 1200V$
$I_{GES}$	Gate-to-Emitter Leakage Current	± 1.1 µA Max.	$T_J = 25^\circ C, V_{GE} = +/- 20V$

### Mechanical Data

Norminal Backmetal Composition, Thickness:	Al-Ti-NiV-Ag ( 1kA-1kA-4kA-6kA )
Norminal Front Metal Composition, Thickness:	99% Al, 1% Si (4 microns)
Dimensions:	0.133" x 0.195"
Wafer Diameter:	150mm, with std. < 100 > flat
Wafer thickness:	185 +/- 15 Microns
Relevant Die Mechanical Dwg. Number	01-5427
Minimum Street Width	100 Microns
Reject Ink Dot Size	0.25mm Diameter Minimum
Ink Dot Location	Consistent throughout same wafer lot
Recommended Storage Environment:	Store in original container, in dessicated nitrogen, with no contamination
Recommended Die Attach Conditions	For optimum electrical results, die attach temperature should not exceed 300C

### Die Outline

NOTES:

1. ALL DIMENSIONS ARE SHOWN IN MILLIMETERS [INCHES].
2. CONTROLLING DIMENSION: [INCH].
3. LETTER DESIGNATION:  
 S = SOURCE SK = SOURCE KELVIN E = EMITTER  
 G = GATE IS = CURRENTSENSE
4. DIMENSIONAL TOLERANCES:  
 BONDING PADS: < 0.635 TOLERANCE = +/- 0.013  
 WIDTH < [.0250] TOLERANCE = +/- [.0005]  
 & > 0.635 TOLERANCE = +/- 0.025  
 LENGTH > [.0250] TOLERANCE = +/- [.0010]  
 OVERALL DIE: < 1.270 TOLERANCE = +/- 0.102  
 WIDTH < [.050] TOLERANCE = +/- [.004]  
 & > 1.270 TOLERANCE = +/- 0.203  
 LENGTH > [.050] TOLERANCE = +/- [.008]