

IRGC5B120KB

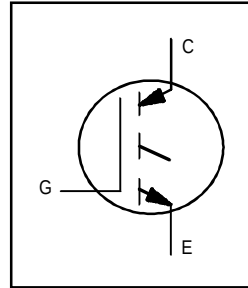
IRGC5B120KB IGBT Die in Wafer Form

Features

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

Benefits

- Benchmark Efficiency for Motor Control
- Rugged Transient Performance
- Excellent Current Sharing in Parallel Operation
- Qualified for Industrial Market



1200 V
 $I_{C(nom)} = 5A$
 $V_{CE(on)} \text{ typ.} = 2.55V @$
 $I_{C(nom)} @ 25^{\circ}C$
 Motor Control 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	1.79V Min., 2.22V Max.	$I_C = 2.5A$, $T_J = 25^{\circ}C$, $V_{GE} = 15V$
$V_{(BR)CES}$	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	$\pm 1.1 \mu A$ Max.	$T_J = 25^{\circ}C$, $V_{GE} = \pm 20V$

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:	0.112" x 0.150"
Wafer Diameter:	150mm, with std. < 100 > flat
Wafer thickness:	185 +/- 15 Microns
Relevant Die Mechanical Dwg. Number	01-5430
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 < [0.025] TOLERANCE = +/- [0.0005] & > 0.635 TOLERANCE = +/- 0.025 LENGTH > [0.025] TOLERANCE = +/- [0.0010] OVERALL DIE: < 1.270 TOLERANCE = +/- 0.102 WIDTH < [0.050] TOLERANCE = +/- [0.004] & > 1.270 TOLERANCE = +/- 0.203 LENGTH > [0.050] TOLERANCE = +/- [0.008]
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