

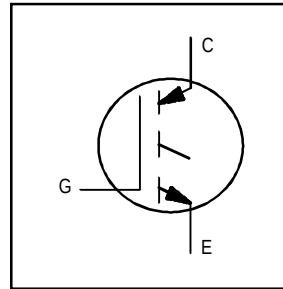
IRGC49B120KB Die in Wafer Form

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 Applications
- Rugged Transient Performance
- Excellent Current Sharing in Parallel Operation
- Qualified for Industrial Market



1200V
 $I_{C(nom)} = 50A$
 $V_{CE(on) typ.} = 2.33V @$
 $I_{C(nom)} @ 25^{\circ}C$
 Motor Control IGBT
 Short Circuit Rated
 150mm Wafer

Reference Standard IR Package Part: IRGPS60B120KD

Electrical Characteristics (Wafer Form)

Parameter	Description	Guaranteed (min, max)	Test Conditions
$V_{CE(on)}$	Collector-to-Emitter Saturation Voltage	1.35V min, 1.60V max	$I_C = 10A$, $T_J = 25^{\circ}C$, $V_{GE} = 15V$
$V_{(BR)CES}$	Collector-to-Emitter Breakdown Voltage	1200V min	$T_J = 25^{\circ}C$, $I_{CES} = 500\mu A$, $V_{GE} = 0V$
$V_{GE(th)}$	Gate Threshold Voltage	4.4V min, 6.0V max	$V_{GE} = V_{CE}$, $T_J = 25^{\circ}C$, $I_C = 500\mu A$
I_{CES}	Zero Gate Voltage Collector Current	20 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

Nominal Backmetal Composition, (Thickness)	Al - Ti - Ni/V - Ag, (1kA - 1kA - 4kA - 6kA)
Nominal Front Metal Composition, (Thickness)	99% Al/1% Si, (4 μ m)
Dimensions	0.305" x 0.390"
Wafer Diameter	150mm, with std. < 100 > flat
Wafer Thickness, Tolerance	185 μ m, +/-15 μ m
Relevant Die Mechanical Dwg. Number	01-5405
Minimum Street Width	100 μ m
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 300 $^{\circ}C$

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]
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