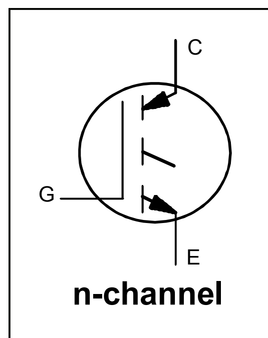
International
IOR Rectifier

IRGC75B60UB

Die in Wafer Form

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

Benefits
- Benchmark Efficiency for UPS and Welding Applications
- Rugged Transient Performance
- Excellent Current Sharing in Parallel Operation
- Qualified for Industrial Market



V_{CES} = 600V
$I_{C(Noml)}$ = 75A
$V_{CE(on)}$ typ = 2.60V①
@ $I_{C(nom)}$ @ 25°C
UPS IGBT
Short Circuit Rated
150mm Wafer

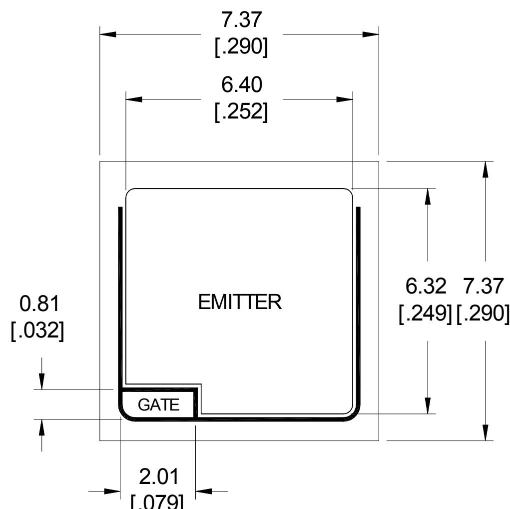
Electrical Characteristics (Wafer Form)

Parameter	Description	Min.	Typ.	Max.	Units	Test Conditions
$V_{CE(ON)}$	Collector-to-Emitter Saturation Voltage	1.14	——	1.63	V	V_{GE} = 15V, I_C = 10A, T_J = 25°C
$V_{CE(ON)}$	Collector-to-Emitter Saturation Voltage	——	2.60	2.90		V_{GE} = 15V, I_C = 75A, T_J = 25°C
$V_{(BR)CES}$	Collector-to-Emitter Breakdown Voltage	600	——	——		V_{GE} = 0V, I_{CES} = 1mA , T_J = 25°C
$V_{GE(th)}$	Gate-Emitter Threshold Voltage	3.5	——	5.5		V_{GE} = $V_{CE,}$ I_C = 250µA , T_J = 25°C
I_{CES}	Zero Gate Voltage Collector Current	——	——	30	µA	V_{CE} = 600V, V_{GE} = 0V, T_J = 25°C
I_{GES}	Gate Emitter Leakage Current	——	——	±1.1	µA	V_{CE} = 0V, V_{GE} = ±20V, T_J = 25°C

Mechanical Parameter

Nominal Backside Metal Composition, (Thickness)	Al - Ti - Ni/V - Ag (1kA -1kA - 4kA - 6kA)
Nominal Front Metal Composition, (Thickness)	99% Al 1% Si (4µm)
Dimensions	0.290” x 0.290”
Wafer Diameter	150mm, with std. < 100> flat
Wafer Thickness, Tolerance	85µm, +/-7µm
Relevant Die Mechanical Dwg. Number	01-5536
Minimum Street Width	100µm
Reject Ink Dot Size	0.25 mm diameter minimum
Ink Dot Location	Consistent throughout same wafer lot
Recommended Storage Environment	Store in original container, in desiccate nitrogen, with no contamination
Recommended Die Attach Conditions	For optimum electrical results, die attach temperature should not exceed 300ºC.

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: WIDTH & LENGTH
   < 0.635 TOLERANCE = +/- 0.013
   < [.0250] TOLERANCE = +/- [.0005]
   > 0.635 TOLERANCE = +/- 0.025
   > [.0250] TOLERANCE = +/- [.0010]
   OVERALL DIE: WIDTH & LENGTH
   < 1.270 TOLERANCE = +/- 0.102
   < [.050] TOLERANCE = +/- [.004]
   > 1.270 TOLERANCE = +/- 0.203
   > [.050] TOLERANCE = +/- [.008]
5. DIE THICKNESS = 0.085 [.0034] TOL: = 0.007 [.0003]

Note: ① Assembled with 4 emitter wires (15 mils each).

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Additional Testing and Screening

For Customers requiring product supplied as Known Good Die (KGD) or requiring specific die level testing, please contact your local IR Sales

Shipping

Sawn Wafer on Film. Please contact your local IR sales office for non-standard shipping options

Handling

- Product must be handled only at ESD safe workstations. Standard ESD precautions and safe work environments are as defined in MIL-HDBK-263.
- Product must be handled only in a class 10,000 or better-designated clean room environment.
- Singulated die are not to be handled with tweezers. A vacuum wand with a non-metallic ESD protected tip should be used.

Wafer/Die Storage

- Proper storage conditions are necessary to prevent product contamination and/or degradation after shipment.
- Note: To reduce the risk of contamination or degradation, it is recommended that product not being used in the assembly process be returned to their original containers and resealed with a vacuum seal process.
- Sawn wafers on a film frame are intended for immediate use and have a limited shelf life.

Further Information

For further information please contact your local IR Sales office.

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To contact International Rectifier, please visit http://www.irf.com/whoto-call/

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