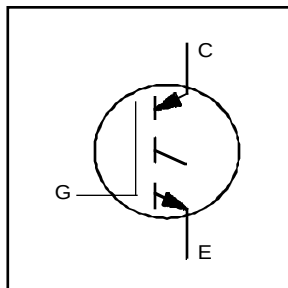


## IRGCC50KE IGBT Die in Wafer Form



600 V  
Size 5  
Ultra-Fast Speed  
5" Wafer

**Electrical Characteristics ( Wafer Form )**

| Parameter     | Description                             | Guaranteed (Min/Max) | Test Conditions                                           |
|---------------|-----------------------------------------|----------------------|-----------------------------------------------------------|
| $V_{CE(on)}$  | Collector-to-Emitter Saturation Voltage | 3.0V Max.            | $I_C = 20A$ , $T_J = 25^\circ C$ , $V_{GE} = 15V$         |
| $V_{(BR)CES}$ | Collector-to-Emitter Breakdown Voltage  | 600V Min.            | $T_J = 25^\circ C$ , $I_{CES} = 250\mu A$ , $V_{GE} = 0V$ |
| $V_{GE(th)}$  | Gate Threshold Voltage                  | 3.0V Min., 5.5V Max. | $V_{GE} = V_{CE}$ , $T_J = 25^\circ C$ , $I_C = 250\mu A$ |
| $I_{CES}$     | Zero Gate Voltage Collector Current     | 250 $\mu A$ Max.     | $T_J = 25^\circ C$ , $V_{CE} = 600V$                      |
| $I_{GES}$     | Gate-to-Emitter Leakage Current         | $\pm 500$ nA Max.    | $T_J = 25^\circ C$ , $V_{GE} = \pm 20V$                   |

**Mechanical Data**

|                                            |                                                                            |
|--------------------------------------------|----------------------------------------------------------------------------|
| Normal Backmetal Composition, Thickness:   | Cr-Ni-Ag ( 1kA-4kA-6kA )                                                   |
| Normal Front Metal Composition, Thickness: | 99% Al, 1% Si (3 microns)                                                  |
| Dimensions:                                | 0.257" x 0.260"                                                            |
| Wafer Diameter:                            | 125mm, with std. < 100 > flat                                              |
| Wafer thickness:                           | .015" + / -.003"                                                           |
| Relevant Die Mechanical Dwg. Number        | 01-5103                                                                    |
| Minimum Street Width                       | 100 Microns                                                                |
| Reject Ink Dot Size                        | 0.25mm Diameter Minimum                                                    |
| Ink Dot Location                           | See Die Outline drawing below                                              |
| Recommended Storage Environment:           | Store in original container, in dessicated nitrogen, with no contamination |

Reference Standard IR packaged part ( for design ) : IRGPC50K

**Die Outline**

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>NOTES :</p> <ol style="list-style-type: none"><li>ALL DIMENSIONS ARE SHOWN IN MILLIMETERS ( INCHES )</li><li>CONTROLLING DIMENSION : ( INCH )</li><li>LETTER DESIGNATION :<br/>S = SOURCE<br/>G = GATE</li><li>DIMENSIONAL TOLERANCES<br/>BONDING PADS : &lt; 0.635 TOLERANCE = +/- 0.013<br/>WIDTH &lt; (.0250 ) TOLERANCE = +/- (.0005 )<br/>&amp; &gt; 0.635 TOLERANCE = +/- 0.025<br/>LENGTH &gt; (.0250 ) TOLERANCE = +/- (.0010 )<br/>OVERALL DIE &lt; 1.270 TOLERANCE = +/- 0.102<br/>WIDTH &lt; (.050 ) TOLERANCE = +/- (.004 )<br/>&amp; &gt; 0.635 TOLERANCE = +/- 0.203<br/>LENGTH &gt; (.050 ) TOLERANCE = +/- (.008 )</li><li>UNLESS OTHERWISE NOTED ALL DIE ARE GEN III</li></ol> |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|