

# **XG6011**

## **N-Channel Enhancement Mode SGT MOSFET**

60V(VDS) /  $\pm 20\text{V}$ (VGS) / 30A(ID)

Rev0.1

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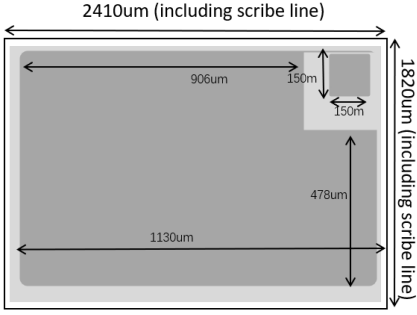
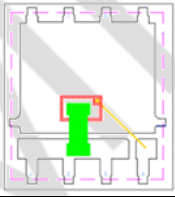


# Wafer Specification

## 1. Order Information

| Part No. | Description                                                                                 | Gross die / per 8,, wafer |
|----------|---------------------------------------------------------------------------------------------|---------------------------|
| XG6011   | 60V( $V_{DS}$ ) / $\pm 20V(V_{GS})$ / 30A( $I_D$ )<br>N-Channel Enhancement Mode SGT MOSFET | 21,712                    |

## 2. Physical Characteristics

|                                                                                   |                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Die Size: 1380 $\mu$ m $\times$ 960 $\mu$ m (including scribe line)                                                                                                               |
|                                                                                   | Gate: 150 $\mu$ m $\times$ 150 $\mu$ m                                                                                                                                            |
|                                                                                   | For PDFN5X6 package<br>Suggest Bonding wire:<br>Gate: 1.7 mil PdCu<br>Source: 20*4 mil Ribbon  |

## 3. Mechanical Data

|                                            |                              |
|--------------------------------------------|------------------------------|
| Nominal Back Metal Composition, Thickness  | Ti-Ni-Ag (1kA°-3kA°-10kA°)   |
| Nominal Front Metal Composition, Thickness | AlCu (5.5 $\mu$ m)           |
| Wafer Diameter                             | 200mm, with 010 notch        |
| Wafer Thickness                            | 150 $\mu$ m $\pm$ 10 $\mu$ m |
| Scribe Line Width                          | 80 $\mu$ m                   |

## 4. Key Electrical Characteristics of Die (at $T_J = 25^\circ\text{C}$ , unless otherwise specified)

| Parameter                         | Description                          | Min.               | Typ. | Max.  | Unit | Test Conditions                                          |
|-----------------------------------|--------------------------------------|--------------------|------|-------|------|----------------------------------------------------------|
| V <sub>(BR)DSS</sub>              | Drain-to-Source Breakdown Voltage    | 60                 | -    | -     | V    | V <sub>GS</sub> =0V, I <sub>D</sub> =250μA               |
| I <sub>D(Device Ref)</sub>        | Continuous Drain Current             | -                  | -    | 30    | A    | T <sub>J</sub> =25°C                                     |
| R <sub>DS(on)</sub> (FT)          | Static Drain-to-Source On-Resistance | -                  | 16   | 20    | mΩ   | V <sub>GS</sub> =10V, I <sub>D</sub> =15A                |
| V <sub>GS(th)</sub>               | Gate Threshold Voltage               | 1.3                | 1.6  | 2     | V    | V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA |
| I <sub>DSS</sub>                  | Drain-to-Source Leakage Current      | -                  | -    | 1     | μA   | V <sub>DS</sub> =60V, V <sub>GS</sub> =0V                |
| I <sub>GSS</sub>                  | Gate-to-Source Leakage Current       | -                  | -    | ±100  | nA   | V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V               |
| E <sub>AS</sub>                   | Single Pulsed Avalanche Energy       | -                  | -    | 21.78 | mJ   | L=0.5mH, V <sub>DD</sub> =30V, V <sub>G</sub> =10V       |
| R <sub>g</sub>                    | Gate Poly Resistance                 | -                  | 1.8  | -     | Ω    | V <sub>DS</sub> =0V, V <sub>GS</sub> =0, f=1MHZ          |
| C <sub>iss</sub>                  | Input Capacitance                    | -                  | 400  | -     | pF   | V <sub>DS</sub> =30V, V <sub>GS</sub> =0, f=1MHZ         |
| C <sub>oss</sub>                  | Output Capacitance                   | -                  | 140  | -     | pF   |                                                          |
| C <sub>rss</sub>                  | Reverse Transfer Capacitance         | -                  | 30   | -     | pF   |                                                          |
| T <sub>J</sub> , T <sub>STG</sub> | Operating and Storage Temperature    | -55°C to 175°C Max |      |       |      |                                                          |