

**G3018****N-CHANNEL MOSFET**

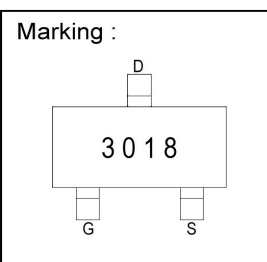
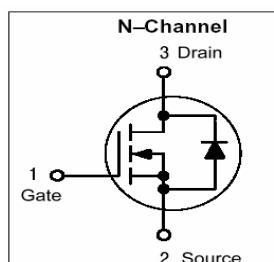
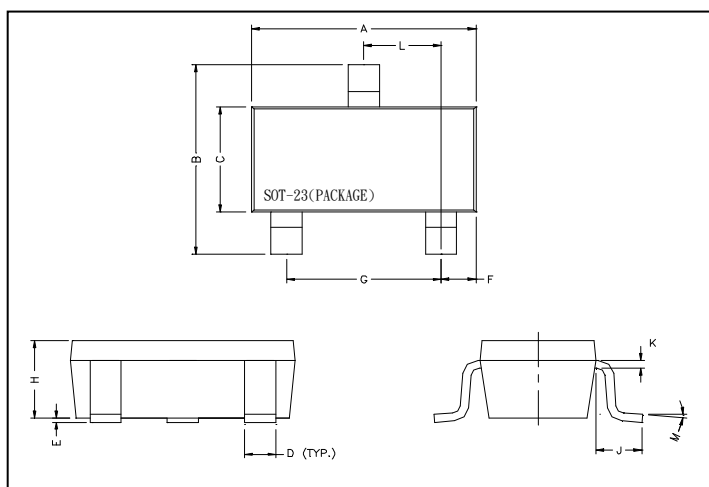
|                     |       |
|---------------------|-------|
| BV <sub>DSS</sub>   | 30V   |
| R <sub>DS(ON)</sub> | 8Ω    |
| I <sub>D</sub>      | 115mA |

**Description**

N-channel enhancement-mode MOSFET

**Features**

- Low on-resistance.
- Fast switching speed.
- Low voltage drive (2.5V) makes this device ideal for portable equipment.
- Easily designed drive circuits.
- Easy to parallel.

**Package Dimensions**

| REF. | Millimeter |      | REF. | Millimeter |      |
|------|------------|------|------|------------|------|
|      | Min.       | Max. |      | Min.       | Max. |
| A    | 2.70       | 3.10 | G    | 1.90       | REF. |
| B    | 2.40       | 2.80 | H    | 1.00       | 1.30 |
| C    | 1.40       | 1.60 | K    | 0.10       | 0.20 |
| D    | 0.35       | 0.50 | J    | 0.40       | -    |
| E    | 0          | 0.10 | L    | 0.85       | 1.15 |
| F    | 0.45       | 0.55 | M    | 0°         | 10°  |

**Absolute Maximum Ratings**

| Parameter  | Symbol                            | Ratings    | Unit |
|--|-----------------------------------|------------|------|
| Drain-Source Voltage                             | V <sub>DS</sub>                   | 30         | V    |
| Gate-Source Voltage                              | V <sub>GS</sub>                   | ±20        | V    |
| Continuous Drain Current <sup>3</sup>            | I <sub>D</sub> @TA=25°C           | 115        | mA   |
| Continuous Drain Current <sup>3</sup>            | I <sub>D</sub> @TA=100°C          | 75         | mA   |
| Pulsed Drain Current <sup>1,2</sup>              | I <sub>DM</sub>                   | 800        | mA   |
| Power Dissipation                                | P <sub>D</sub> @TA=25°C           | 0.225      | W    |
| Linear Derating Factor                           |                                   | 0.0018     | W/°C |
| Operating Junction and Storage Temperature Range | T <sub>j</sub> , T <sub>stg</sub> | -40 ~ +150 | °C   |

**Thermal Data**

| Parameter   | Symbol             | Ratings | Unit |
|---|--------------------|---------|------|
| Thermal Resistance Junction-ambient <sup>3</sup> Max. | R <sub>thj-a</sub> | 556     | °C/W |

**Electrical Characteristics(T<sub>j</sub> = 25°C Unless otherwise specified)**

| Parameter                         | Symbol              | Min. | Typ. | Max. | Unit | Test Conditions  |
|-----------------------------------|---------------------|------|------|------|------|--|
| Drain-Source Breakdown Voltage    | BV <sub>DSS</sub>   | 30   | -    | -    | V    | V <sub>GS</sub> =0, I <sub>D</sub> =250uA                |
| Gate Threshold Voltage            | V <sub>GS(th)</sub> | 0.8  | -    | 2.0  | V    | V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =0.1mA |
| Forward Transconductance          | g <sub>fs</sub>     | 20   | -    | -    | mS   | V <sub>DS</sub> =3V, I <sub>D</sub> =10mA                |
| Gate-Source Leakage Current       | I <sub>GSS</sub>    | -    | -    | ±1   | uA   | V <sub>GS</sub> = ±20V                                   |
| Drain-Source Leakage Current      | I <sub>DSS</sub>    | -    | -    | 1    | uA   | V <sub>DS</sub> =30V, V <sub>GS</sub> =0                 |
| Static Drain-Source On-Resistance | R <sub>DS(ON)</sub> | -    | 5    | 8    | Ω    | V <sub>GS</sub> =4V, I <sub>D</sub> =10mA                |
|                                   |                     | -    | 7    | 13   |      | V <sub>GS</sub> =2.5V, I <sub>D</sub> =1mA               |
| Input Capacitance                 | C <sub>iss</sub>    | -    | -    | 50   | pF   | V <sub>GS</sub> =0V<br>V <sub>DS</sub> =5V<br>f=1.0MHz   |
| Output Capacitance                | C <sub>oss</sub>    | -    | -    | 25   |      |  |
| Reverse Transfer Capacitance      | C <sub>rss</sub>    | -    | -    | 5    |      |  |

**Source-Drain Diode**

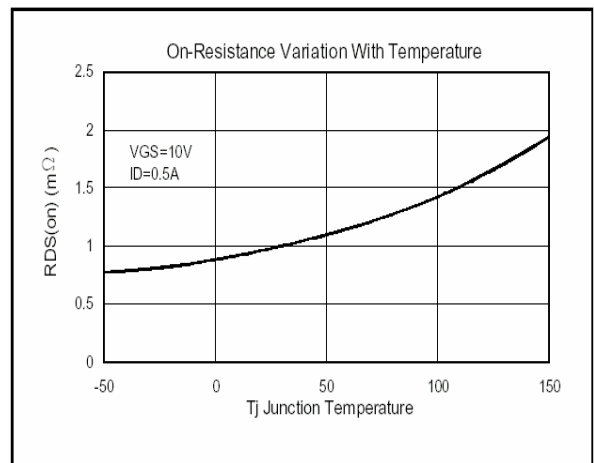
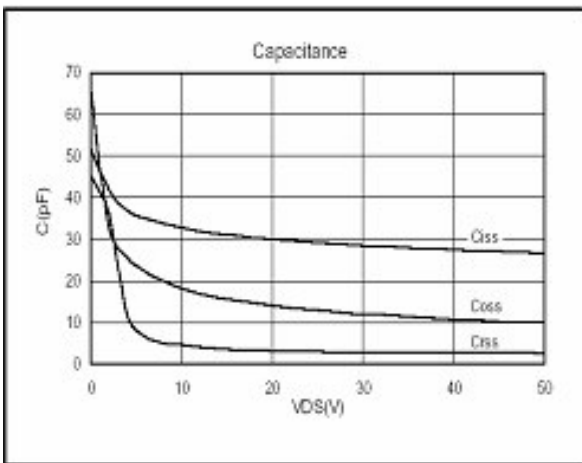
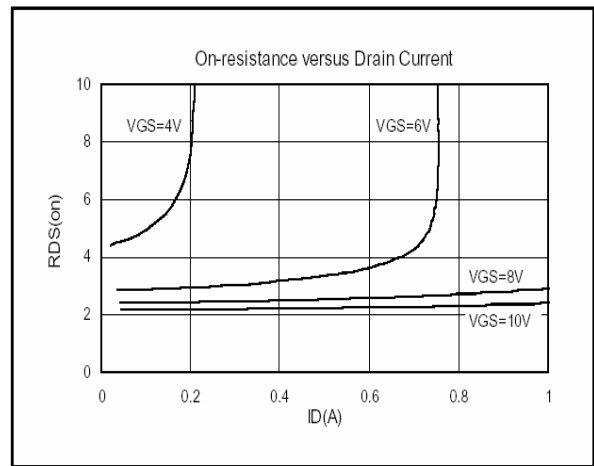
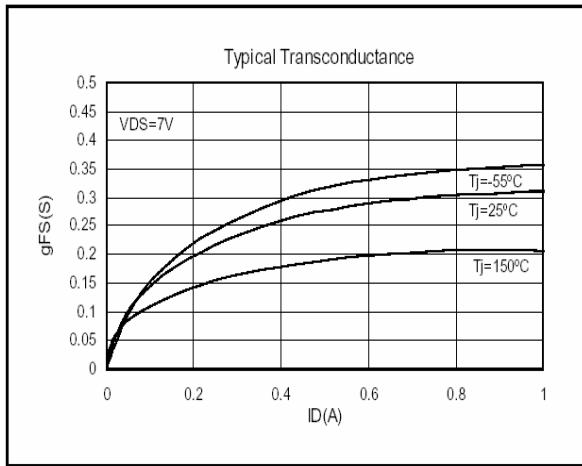
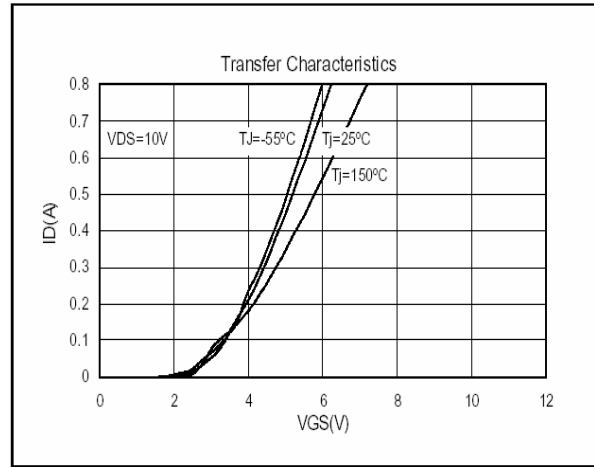
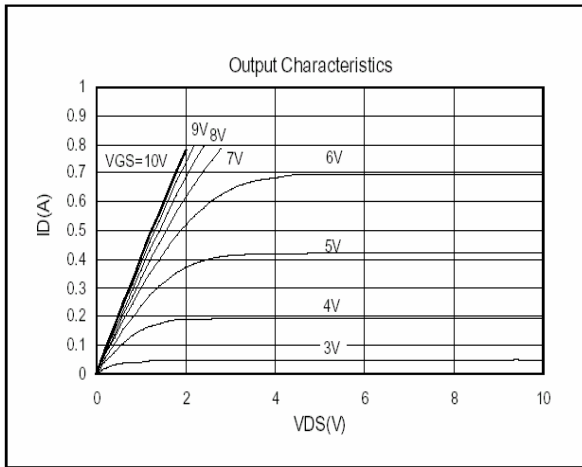
| Parameter                       | Symbol          | Min. | Typ. | Max. | Unit | Test Conditions                            |
|---------------------------------|-----------------|------|------|------|------|--|
| Forward On Voltage <sup>2</sup> | V <sub>SD</sub> | -    | 0.84 | 1.5  | V    | I <sub>S</sub> =100mA, V <sub>GS</sub> =0V |

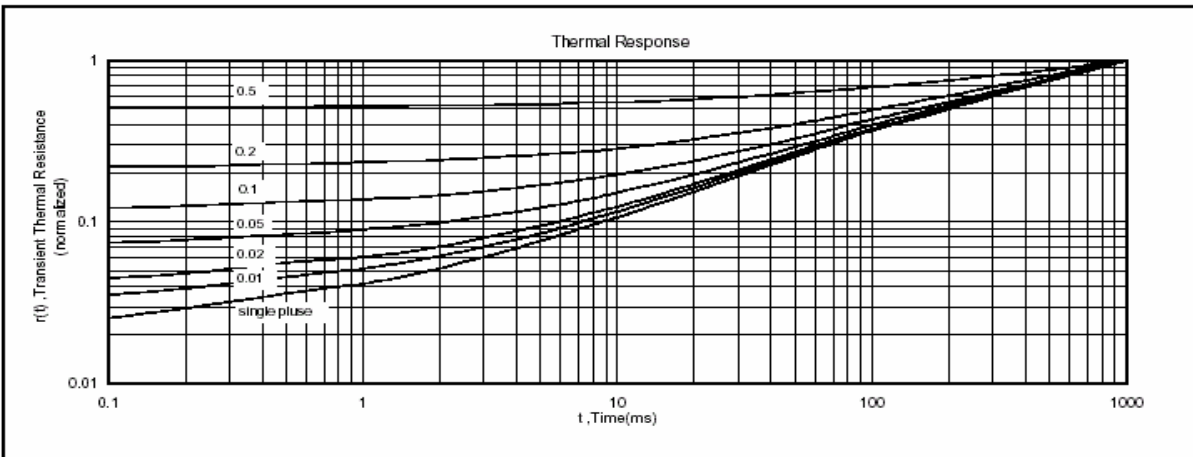
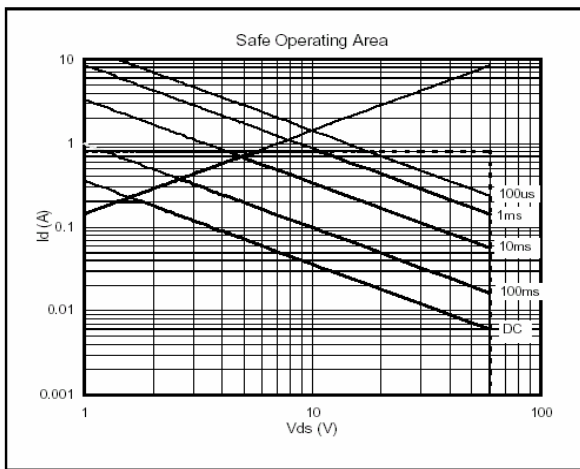
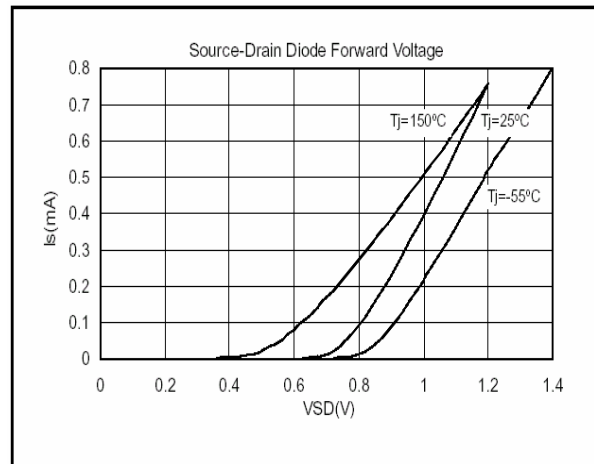
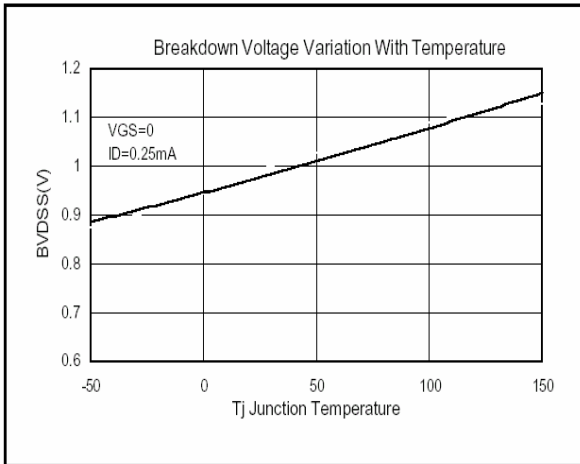
Notes: 1. Pulse width limited by Max. junction temperature.

2. Pulse width ≤ 300us, duty cycle ≤ 2%.

3. Surface mounted on 1 in<sup>2</sup> copper pad of FR4 board; 270°C/W when mounted on Min. copper pad.

## Characteristics Curve





**Important Notice:**

- All rights are reserved. Reproduction in whole or in part is prohibited without the prior written approval of GTM.
- GTM reserves the right to make changes to its products without notice.
- GTM semiconductor products are not warranted to be suitable for use in life-support Applications, or systems.
- GTM assumes no liability for any consequence of customer product design, infringement of patents, or application assistance.

**Head Office And Factory:**

- **Taiwan:** No. 17-1 Tatung Rd. Fu Kou Hsin-Chu Industrial Park, Hsin-Chu, Taiwan, R. O. C.
- TEL : 886-3-597-7061 FAX : 886-3-597-9220, 597-0785
- **China:** (201203) No.255, Jang-Jiang Tsai-Lueng RD. , Pu-Dung-Hsin District, Shang-Hai City, China
- TEL : 86-21-5895-7671 ~ 4 FAX : 86-21-38950165