



ON Semiconductor®

**ON Semiconductor**  
**DATA SHEET**

N-Channel Silicon MOSFET

**6LN04MH** — **General-Purpose Switching Device**  
**Applications****Features**

- 1.5V drive.

**Specifications****Absolute Maximum Ratings** at Ta=25°C

| Parameter                   | Symbol           | Conditions                                | Ratings     | Unit |
|-----------------------------|------------------|-------------------------------------------|-------------|------|
| Drain-to-Source Voltage     | V <sub>DSS</sub> |                                           | 60          | V    |
| Gate-to-Source Voltage      | V <sub>GSS</sub> |                                           | ±10         | V    |
| Drain Current (DC)          | I <sub>D</sub>   |                                           | 200         | mA   |
| Drain Current (Pulse)       | I <sub>DP</sub>  | PW≤10μs, duty cycle≤1%                    | 800         | mA   |
| Allowable Power Dissipation | P <sub>D</sub>   | Mounted on a ceramic board (900mm²×0.8mm) | 0.6         | W    |
| Channel Temperature         | T <sub>ch</sub>  |                                           | 150         | °C   |
| Storage Temperature         | T <sub>stg</sub> |                                           | -55 to +150 | °C   |

**Electrical Characteristics** at Ta=25°C

| Parameter                                  | Symbol               | Conditions                                  | Ratings |      |     | Unit |
|--------------------------------------------|----------------------|---------------------------------------------|---------|------|-----|------|
|                                            |                      |                                             | min     | typ  | max |      |
| Drain-to-Source Breakdown Voltage          | V <sub>(BR)DSS</sub> | I <sub>D</sub> =1mA, V <sub>GS</sub> =0V    | 60      |      |     | V    |
| Zero-Gate Voltage Drain Current            | I <sub>DSS</sub>     | V <sub>DS</sub> =60V, V <sub>GS</sub> =0V   |         |      | 1   | μA   |
| Gate-to-Source Leakage Current             | I <sub>GSS</sub>     | V <sub>GS</sub> =±8V, V <sub>DS</sub> =0V   |         |      | ±10 | μA   |
| Cutoff Voltage                             | V <sub>GS(off)</sub> | V <sub>DS</sub> =10V, I <sub>D</sub> =100μA | 0.4     |      | 1.3 | V    |
| Forward Transfer Admittance                | y <sub>fs</sub>      | V <sub>DS</sub> =10V, I <sub>D</sub> =100mA | 280     | 480  |     | mS   |
| Static Drain-to-Source On-State Resistance | R <sub>DS(on)1</sub> | I <sub>D</sub> =100mA, V <sub>GS</sub> =4V  |         | 2.2  | 2.9 | Ω    |
|                                            | R <sub>DS(on)2</sub> | I <sub>D</sub> =50mA, V <sub>GS</sub> =2.5V |         | 2.4  | 3.4 | Ω    |
|                                            | R <sub>DS(on)3</sub> | I <sub>D</sub> =10mA, V <sub>GS</sub> =1.5V |         | 3.5  | 7.0 | Ω    |
| Input Capacitance                          | C <sub>iss</sub>     | V <sub>DS</sub> =20V, f=1MHz                |         | 26   |     | pF   |
| Output Capacitance                         | C <sub>oss</sub>     | V <sub>DS</sub> =20V, f=1MHz                |         | 5.9  |     | pF   |
| Reverse Transfer Capacitance               | C <sub>rss</sub>     | V <sub>DS</sub> =20V, f=1MHz                |         | 3.2  |     | pF   |
| Turn-ON Delay Time                         | t <sub>d(on)</sub>   | See specified Test Circuit.                 |         | 18.5 |     | ns   |
| Rise Time                                  | t <sub>r</sub>       | See specified Test Circuit.                 |         | 26   |     | ns   |
| Turn-OFF Delay Time                        | t <sub>d(off)</sub>  | See specified Test Circuit.                 |         | 146  |     | ns   |
| Fall Time                                  | t <sub>f</sub>       | See specified Test Circuit.                 |         | 69   |     | ns   |

Marking : FA

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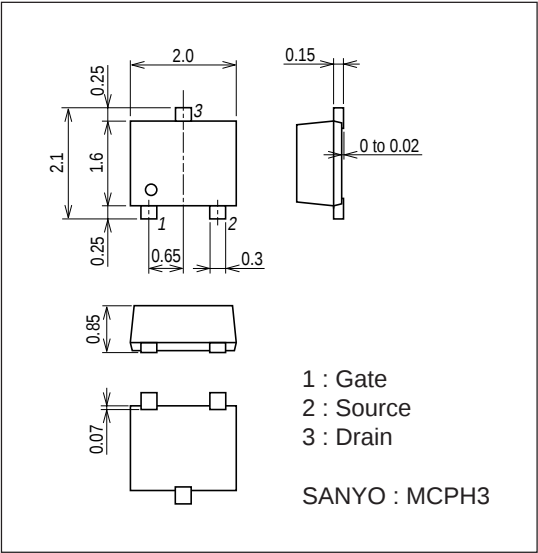
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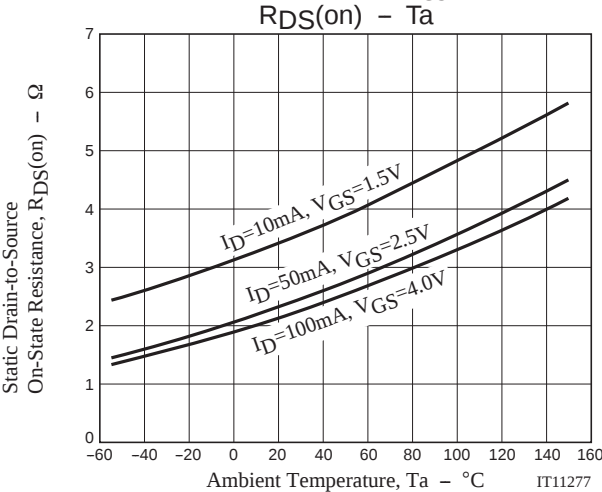
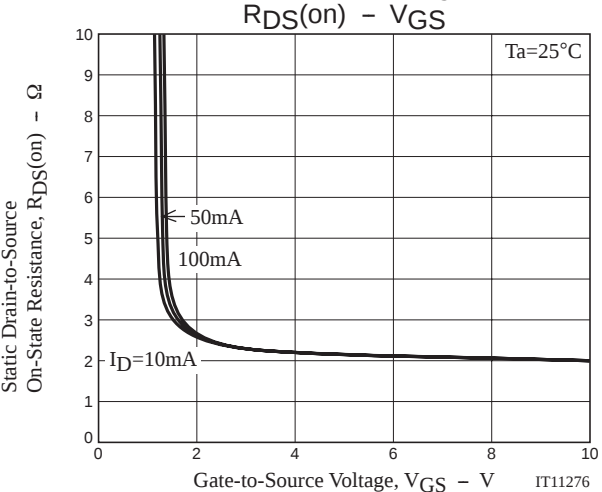
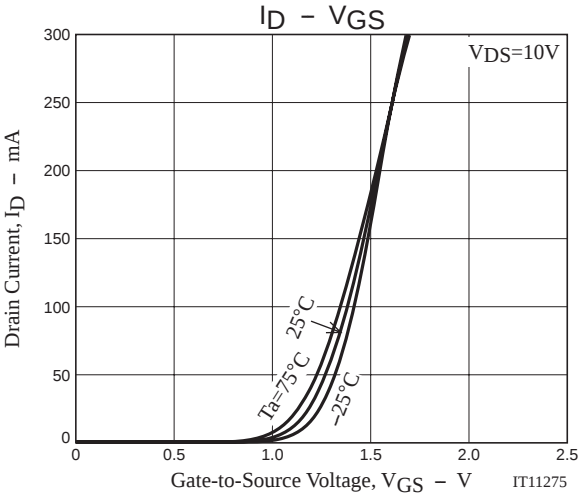
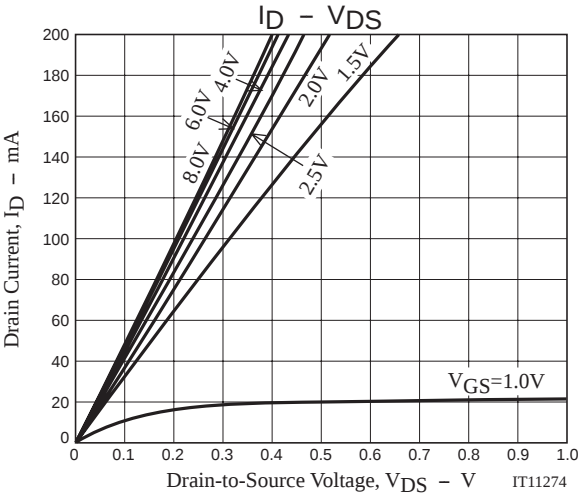
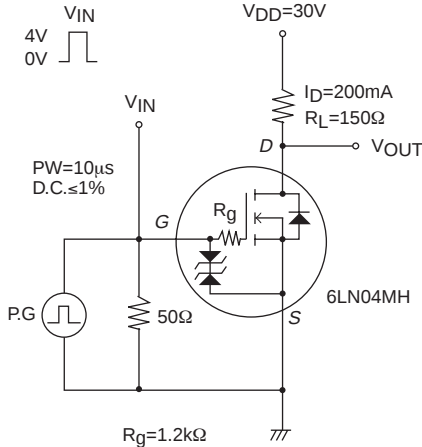
| Parameter                     | Symbol          | Conditions                                                       | Ratings |      |     | Unit |
|-------------------------------|-----------------|------------------------------------------------------------------|---------|------|-----|------|
|                               |                 |                                                                  | min     | typ  | max |      |
| Total Gate Charge             | Qg              | V <sub>DS</sub> =30V, V <sub>GS</sub> =4V, I <sub>D</sub> =200mA |         | 1.0  |     | nC   |
| Gate-to-Source Charge         | Qgs             | V <sub>DS</sub> =30V, V <sub>GS</sub> =4V, I <sub>D</sub> =200mA |         | 0.2  |     | nC   |
| Gate-to-Drain "Miller" Charge | Qgd             | V <sub>DS</sub> =30V, V <sub>GS</sub> =4V, I <sub>D</sub> =200mA |         | 0.2  |     | nC   |
| Diode Forward Voltage         | V <sub>SD</sub> | I <sub>S</sub> =200mA, V <sub>GS</sub> =0V                       |         | 0.83 | 1.2 | V    |

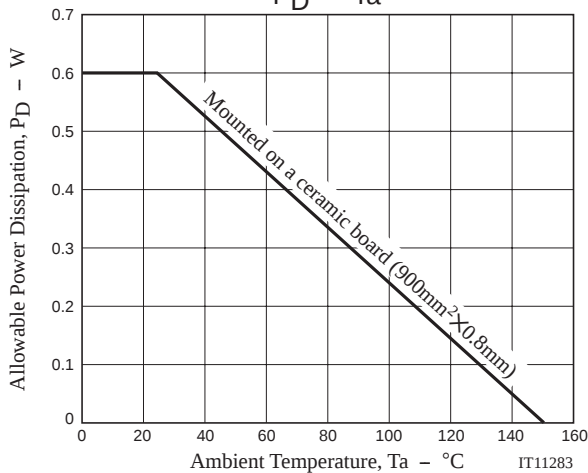
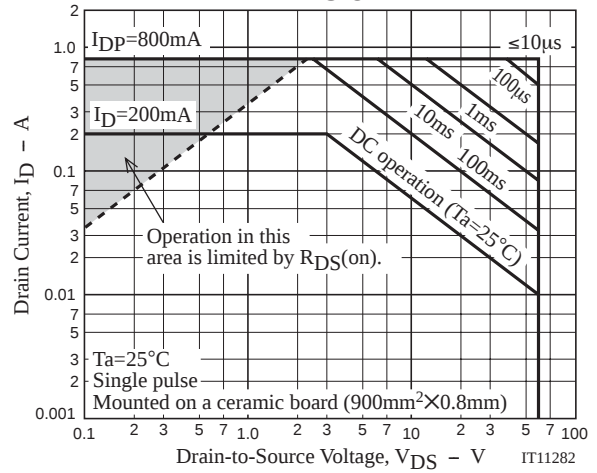
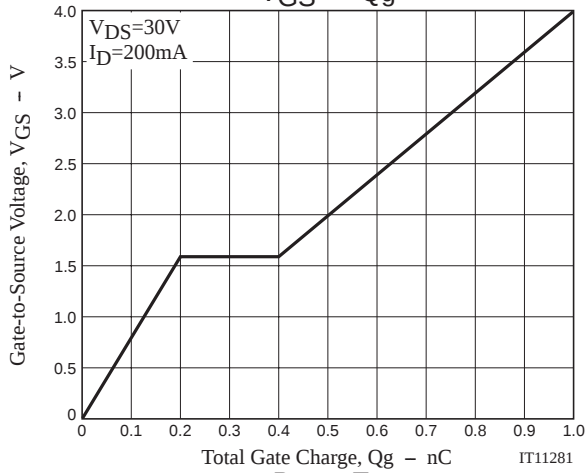
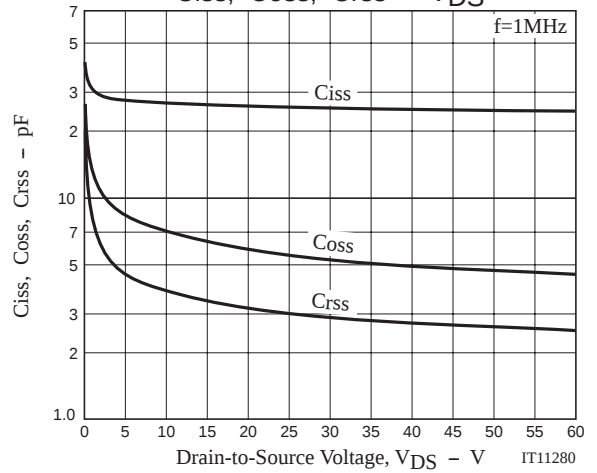
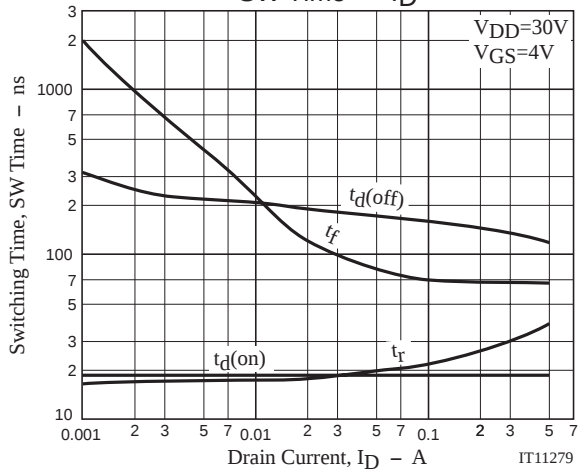
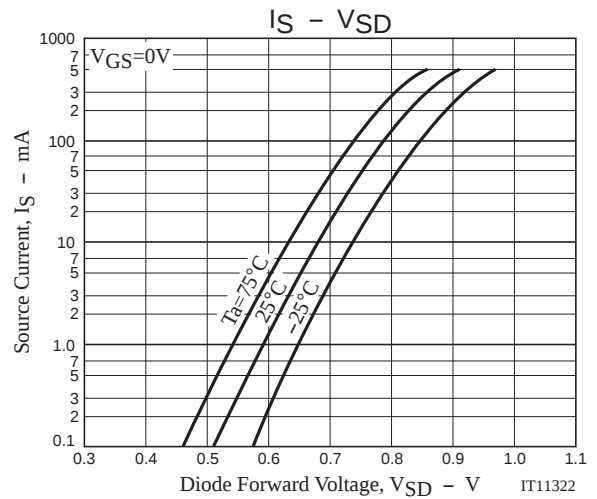
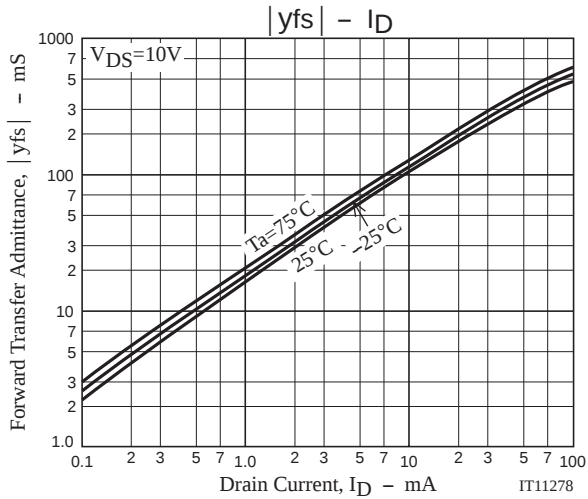
Package Dimensions

unit : mm (typ)  
7019A-003



Switching Time Test Circuit





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