



# 2SJ616

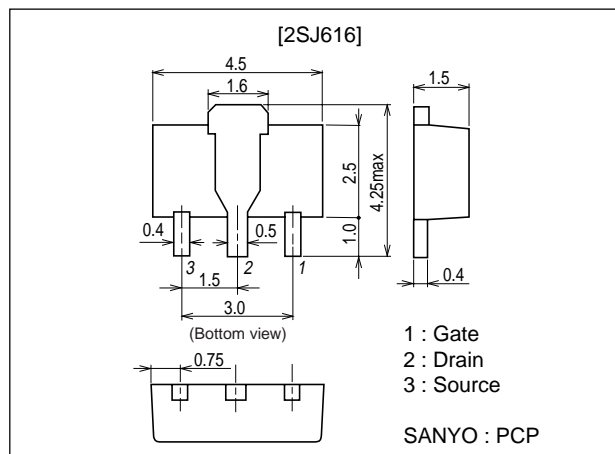
## Ultrahigh-Speed Switching Applications

### Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 4V drive.

### Package Dimensions

unit : mm  
2062A



### Specifications

Absolute Maximum Ratings at Ta=25°C

| Parameter                   | Symbol           | Conditions                                | Ratings     | Unit |
|-----------------------------|------------------|---|-------------|------|
| Drain-to-Source Voltage     | V <sub>DSS</sub> |   | -30         | V    |
| Gate-to-Source Voltage      | V <sub>GSS</sub> |   | ±20         | V    |
| Drain Current (DC)          | I <sub>D</sub>   |   | -6          | A    |
| Drain Current (Pulse)       | I <sub>DP</sub>  | PW≤10μs, duty cycle≤1%                    | -24         | A    |
| Allowable Power Dissipation | P <sub>D</sub>   | Mounted on a ceramic board (250mm²×0.8mm) | 1.5         | W    |
|                             |                  | T <sub>c</sub> =25°C                      | 3.5         | 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> =0    | -30     |     |      | V    |
| Zero-Gate Voltage Drain Current            | I <sub>DSS</sub>     | V <sub>DS</sub> =-30V, V <sub>GS</sub> =0   |         |     | -1   | μA   |
| Gate-to-Source Leakage Current             | I <sub>GSS</sub>     | V <sub>GS</sub> =±16V, V <sub>DS</sub> =0   |         |     | ±10  | μA   |
| Cutoff Voltage                             | V <sub>GS(off)</sub> | V <sub>DS</sub> =-10V, I <sub>D</sub> =-1mA | -1.2    |     | -2.6 | V    |
| Forward Transfer Admittance                | y <sub>fs</sub>      | V <sub>DS</sub> =-10V, I <sub>D</sub> =-3A  | 2.9     | 4.2 |      | S    |
| Static Drain-to-Source On-State Resistance | R <sub>DS(on)1</sub> | I <sub>D</sub> =-3A, V <sub>GS</sub> =-10V  |         | 53  | 69   | mΩ   |
|  | R <sub>DS(on)2</sub> | I <sub>D</sub> =-1.5A, V <sub>GS</sub> =-4V |         | 105 | 147  | mΩ   |

Marking : JW

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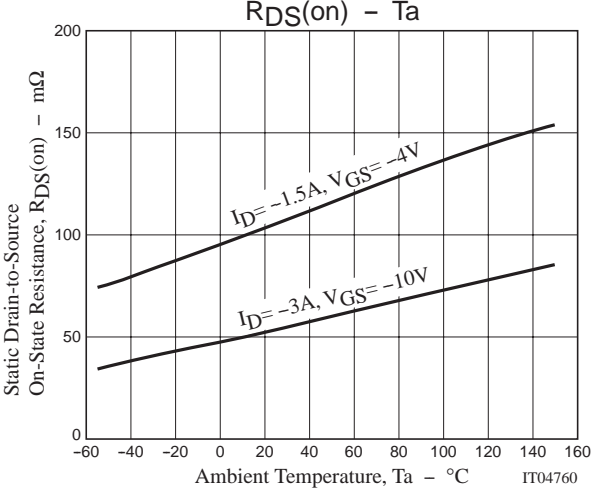
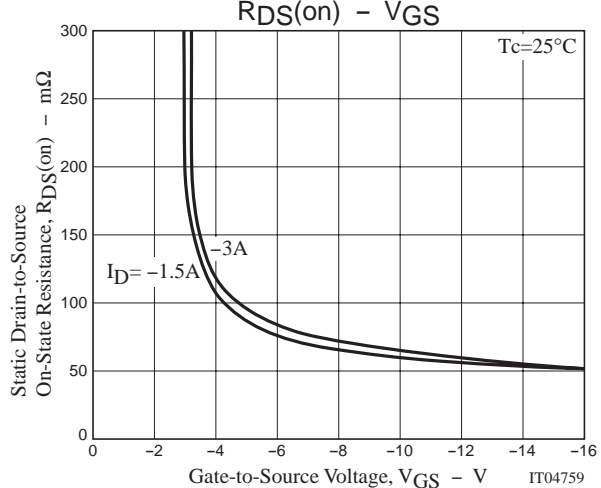
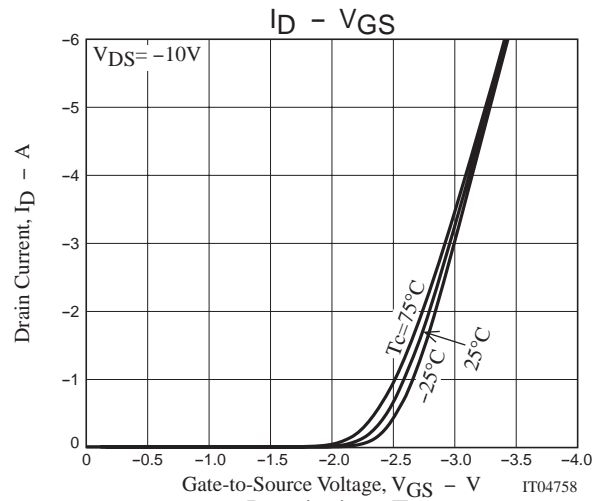
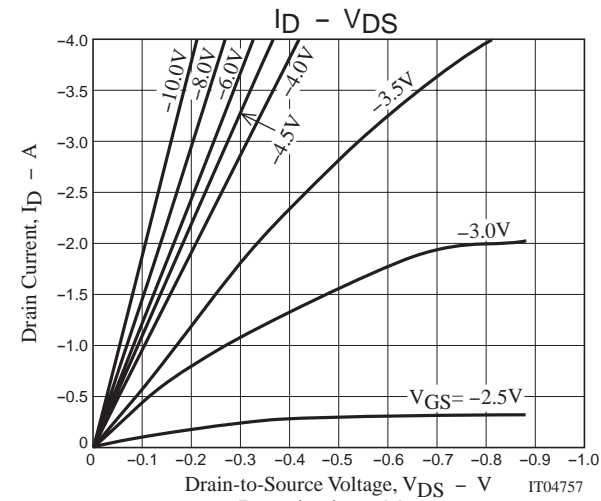
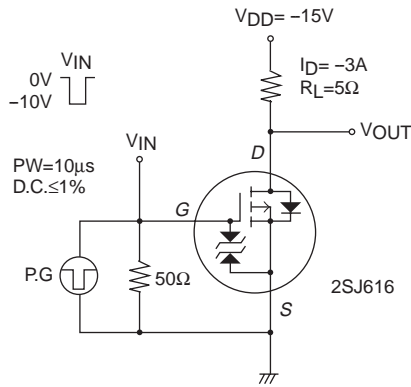
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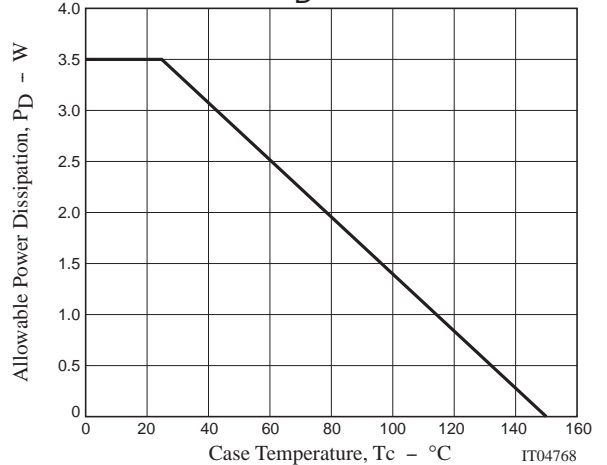
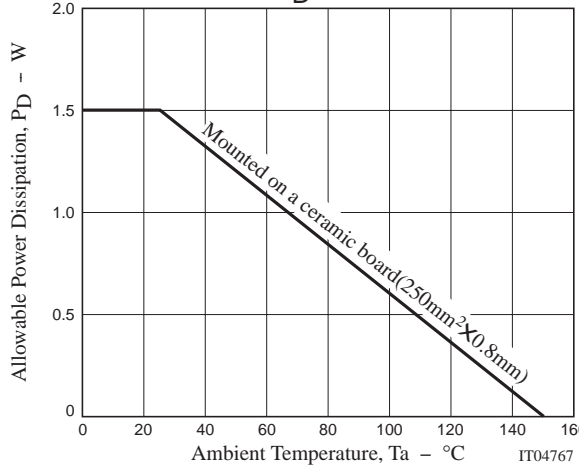
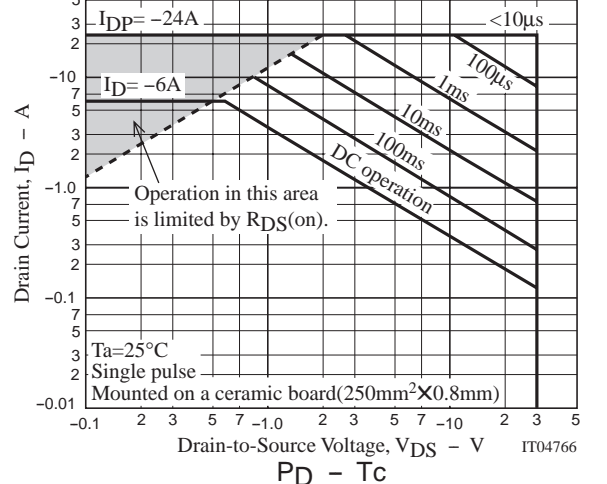
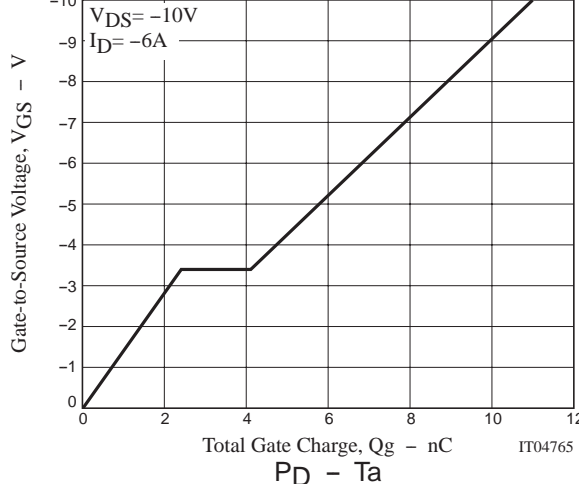
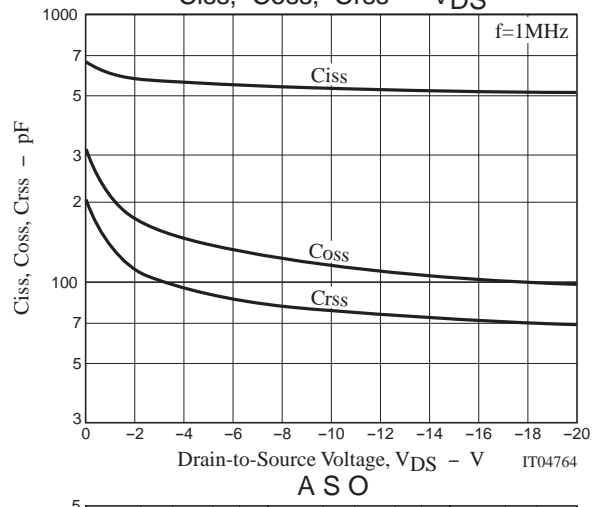
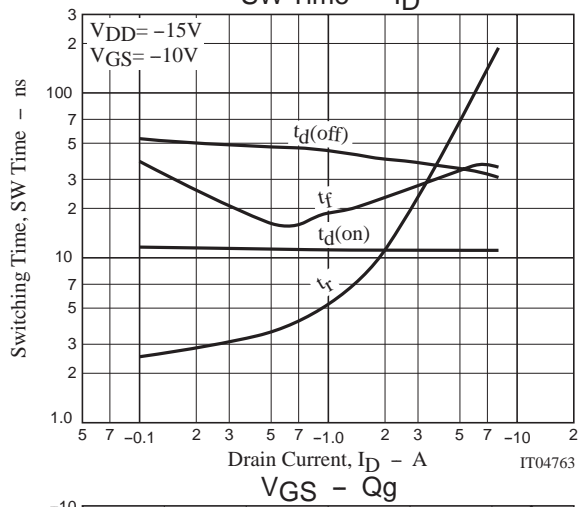
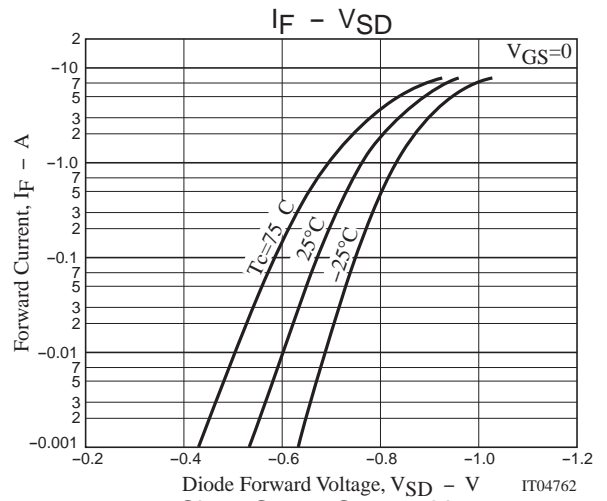
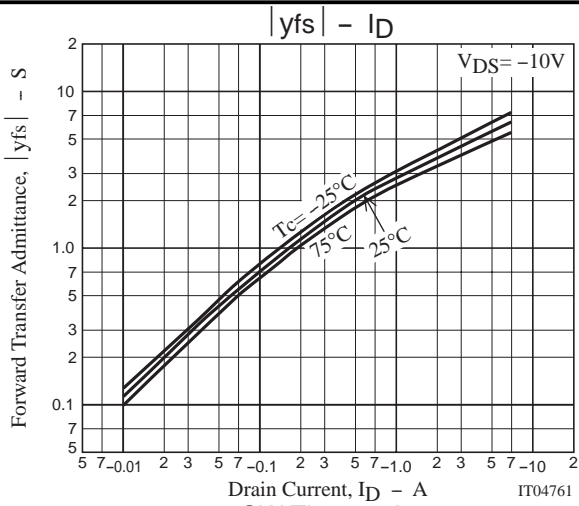
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| Parameter                     | Symbol              | Conditions  | Ratings |      |      | Unit |
|-------------------------------|---------------------|---|---------|------|------|------|
|                               |                     |   | min     | typ  | max  |      |
| Input Capacitance             | Ciss                | V <sub>DS</sub> =-10V, f=1MHz                                     |         | 510  |      | pF   |
| Output Capacitance            | Coss                | V <sub>DS</sub> =-10V, f=1MHz                                     |         | 115  |      | pF   |
| Reverse Transfer Capacitance  | Crss                | V <sub>DS</sub> =-10V, f=1MHz                                     |         | 78   |      | pF   |
| Turn-ON Delay Time            | t <sub>d(on)</sub>  | See specified Test Circuit.                                       |         | 11   |      | ns   |
| Rise Time                     | t <sub>r</sub>      | See specified Test Circuit.                                       |         | 12   |      | ns   |
| Turn-OFF Delay Time           | t <sub>d(off)</sub> | See specified Test Circuit.                                       |         | 34   |      | ns   |
| Fall Time                     | t <sub>f</sub>      | See specified Test Circuit.                                       |         | 23.5 |      | ns   |
| Total Gate Charge             | Q <sub>g</sub>      | V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-6A |         | 11   |      | nC   |
| Gate-to-Source Charge         | Q <sub>gs</sub>     | V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-6A |         | 2.4  |      | nC   |
| Gate-to-Drain "Miller" Charge | Q <sub>gd</sub>     | V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-6A |         | 1.7  |      | nC   |
| Diode Forward Voltage         | V <sub>SD</sub>     | I <sub>S</sub> =-6A, V <sub>GS</sub> =0                           | -0.9    |      | -1.5 | V    |

## Switching Time Test Circuit



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