



General-Purpose Switching Device

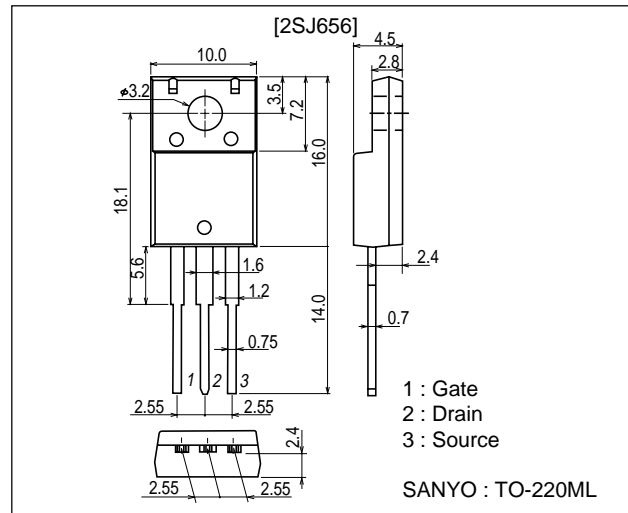
An ON Semiconductor Company

Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 4V drive.
- Motor drive, DC / DC converter.

Package Dimensions

unit : mm
2063A



Specifications

Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|------------------|------------------------|-------------|------|
| Drain-to-Source Voltage | V _{DSS} | | -100 | V |
| Gate-to-Source Voltage | V _{GSS} | | ±20 | V |
| Drain Current (DC) | I _D | | -18 | A |
| Drain Current (Pulse) | I _{DP} | PW≤10μs, duty cycle≤1% | -72 | A |
| Allowable Power Dissipation | P _D | | 2.0 | W |
| | | T _c =25°C | 30 | W |
| Channel Temperature | T _{ch} | | 150 | °C |
| Storage Temperature | T _{stg} | | -55 to +150 | °C |

Electrical Characteristics at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|-----------------------------------|----------------------|---|---------|-----|------|------|
| | | | min | typ | max | |
| Drain-to-Source Breakdown Voltage | V _{(BR)DSS} | I _D =-1mA, V _{GS} =0 | -100 | | | V |
| Zero-Gate Voltage Drain Current | I _{DSS} | V _{DS} =-100V, V _{GS} =0 | | | -1 | μA |
| Gate-to-Source Leakage Current | I _{GSS} | V _{GS} =±16V, V _{DS} =0 | | | ±10 | μA |
| Cutoff Voltage | V _{GS(off)} | V _{DS} =-10V, I _D =-1mA | -1.2 | | -2.6 | V |
| Forward Transfer Admittance | y _{fs} | V _{DS} =-10V, I _D =-9A | 14 | 20 | | S |

Marking : J656

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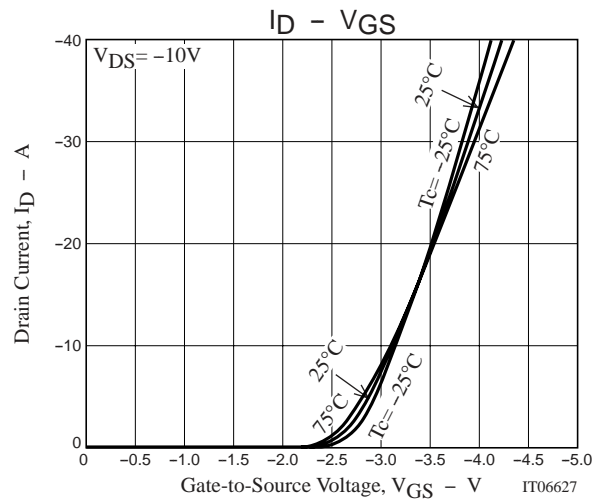
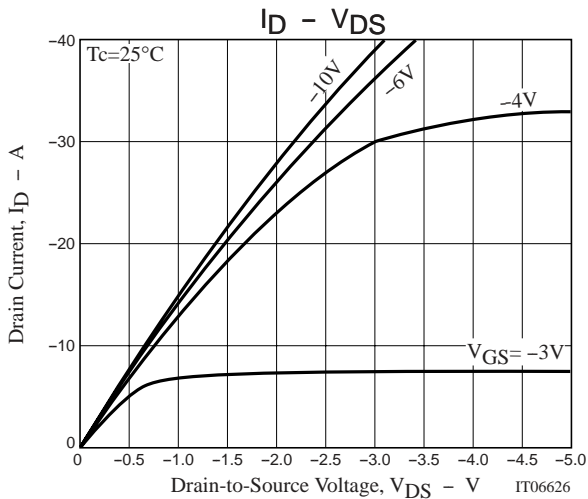
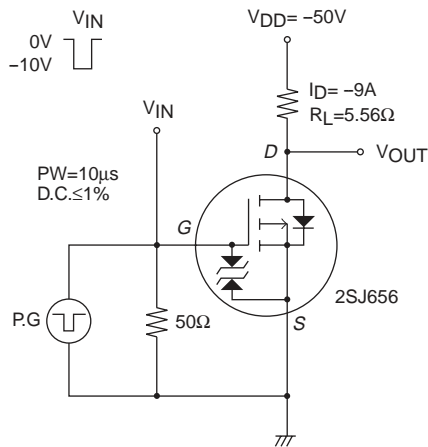
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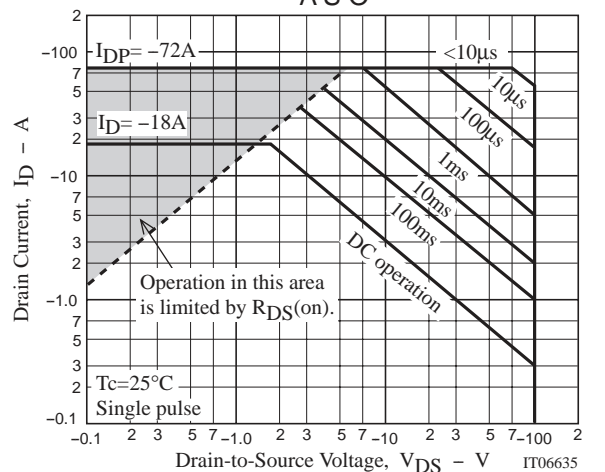
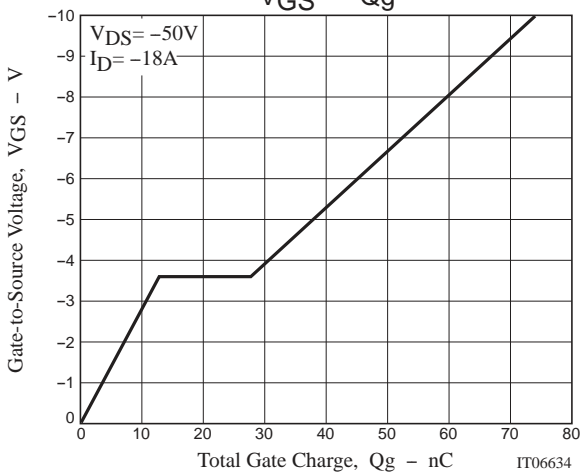
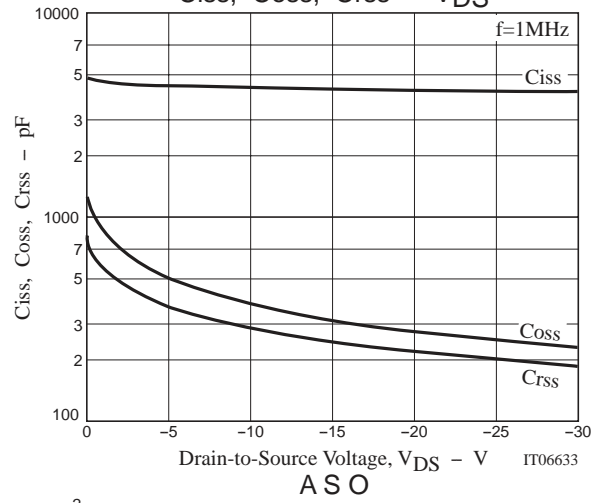
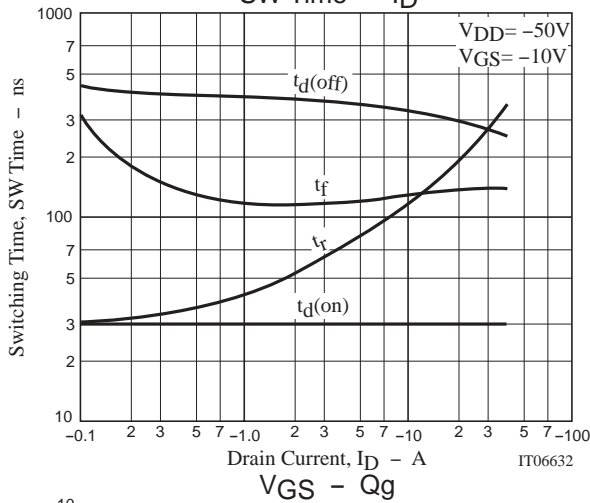
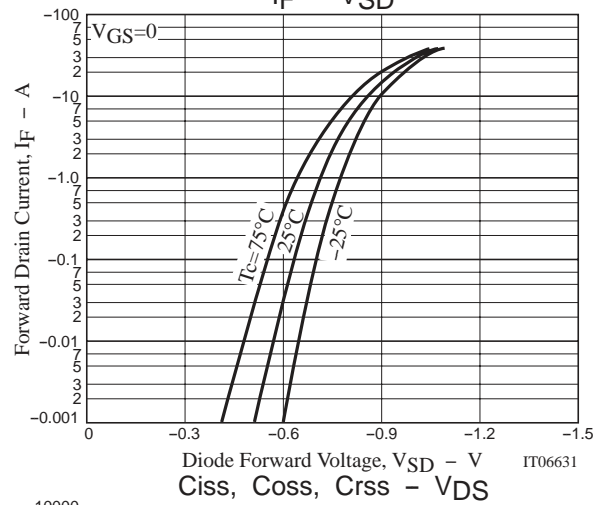
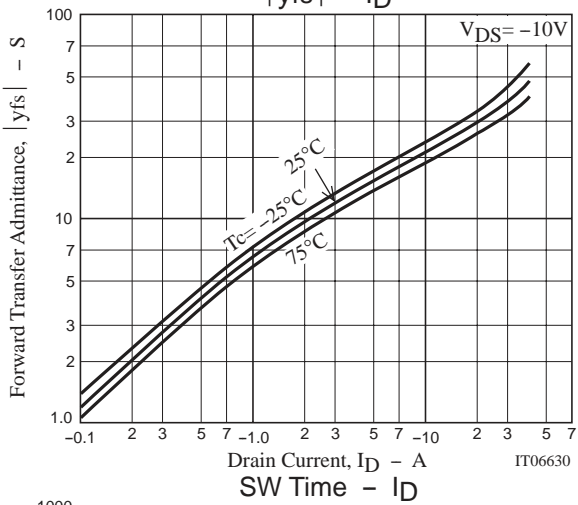
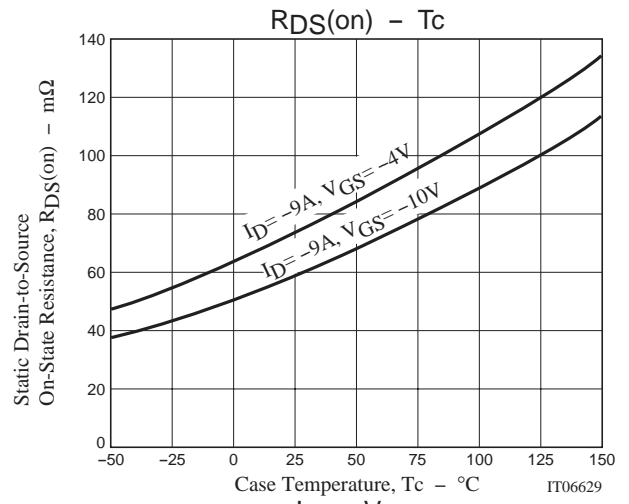
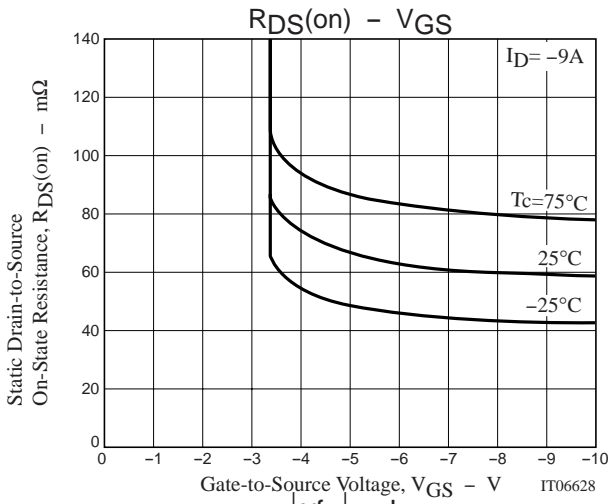
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| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|---------------|--|---------|-------|------|-----------|
| | | | min | typ | max | |
| Static Drain-to-Source On-State Resistance | $R_{DS(on)1}$ | $I_D = -9A, V_{GS} = -10V$ | | 58 | 75.5 | $m\Omega$ |
| | $R_{DS(on)2}$ | $I_D = -9A, V_{GS} = -4V$ | | 74 | 104 | $m\Omega$ |
| Input Capacitance | C_{iss} | $V_{DS} = -20V, f = 1MHz$ | | 4200 | | μF |
| Output Capacitance | C_{oss} | $V_{DS} = -20V, f = 1MHz$ | | 280 | | μF |
| Reverse Transfer Capacitance | C_{rss} | $V_{DS} = -20V, f = 1MHz$ | | 220 | | μF |
| Turn-ON Delay Time | $t_d(on)$ | See specified Test Circuit. | | 30 | | ns |
| Rise Time | t_r | See specified Test Circuit. | | 110 | | ns |
| Turn-OFF Delay Time | $t_d(off)$ | See specified Test Circuit. | | 340 | | ns |
| Fall Time | t_f | See specified Test Circuit. | | 128 | | ns |
| Total Gate Charge | Q_g | $V_{DS} = -50V, V_{GS} = -10V, I_D = -18A$ | | 74 | | nC |
| Gate-to-Source Charge | Q_{gs} | $V_{DS} = -50V, V_{GS} = -10V, I_D = -18A$ | | 12.8 | | nC |
| Gate-to-Drain "Miller" Charge | Q_{gd} | $V_{DS} = -50V, V_{GS} = -10V, I_D = -18A$ | | 14.7 | | nC |
| Diode Forward Voltage | V_{SD} | $I_S = -18A, V_{GS} = 0$ | | -0.93 | -1.2 | V |

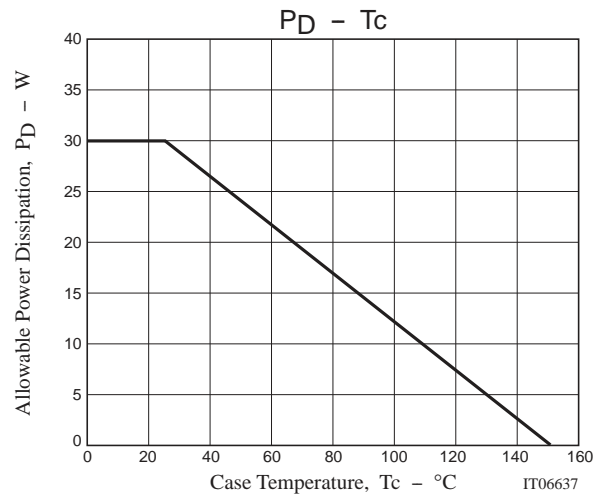
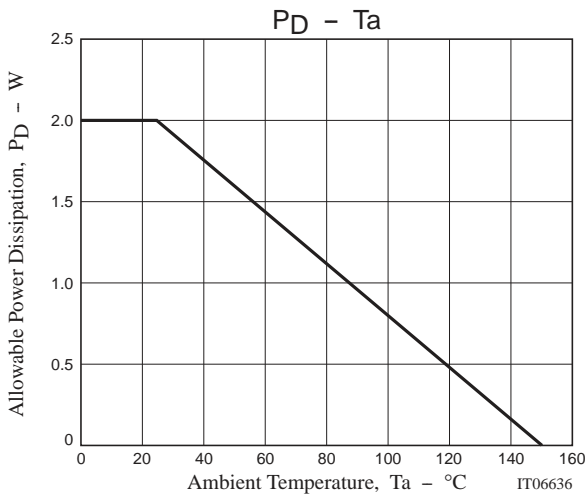
Switching Time Test Circuit



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