



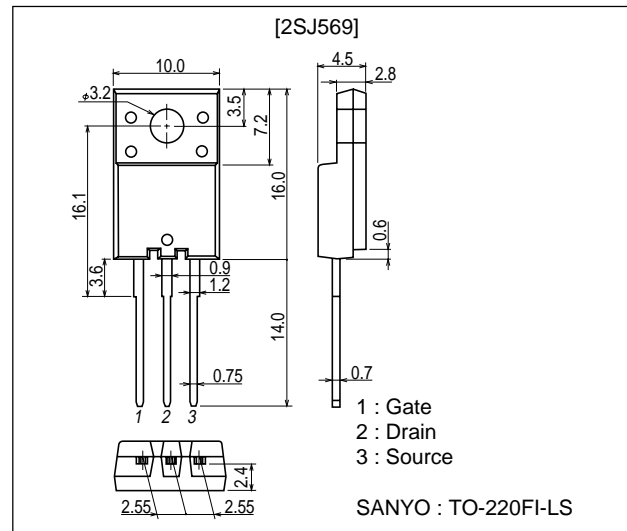
Ultrahigh-Speed Switching Applications

Features

- Low ON-resistance.
- Ultrahigh-speed switching.

Package Dimensions

unit : mm
2078B



Specifications

Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|------------------|------------------------|-------------|------|
| Drain-to-Source Voltage | V _{DSS} | | -300 | V |
| Gate-to-Source Voltage | V _{GSS} | | ±30 | V |
| Drain Current (DC) | I _D | | -5 | A |
| Drain Current (Pulse) | I _{DP} | PW≤10μs, duty cycle≤1% | -20 | 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 | -300 | | | V |
| Gate-to-Source Breakdown Voltage | V _{(BR)GSS} | I _G =±100μA, V _{DS} =0 | ±30 | | | V |
| Zero-Gate Voltage Drain Current | I _{DSS} | V _{DS} =-300V, V _{GS} =0 | | | -100 | μA |
| Gate-to-Source Leakage Current | I _{GSS} | V _{GS} =±25V, V _{DS} =0 | | | ±10 | μA |
| Cutoff Voltage | V _{GS(off)} | V _{DS} =-10V, I _D =-1mA | -1.5 | | -2.5 | V |

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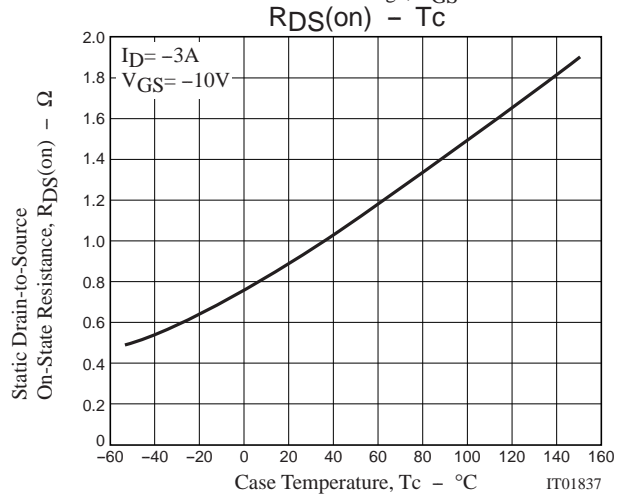
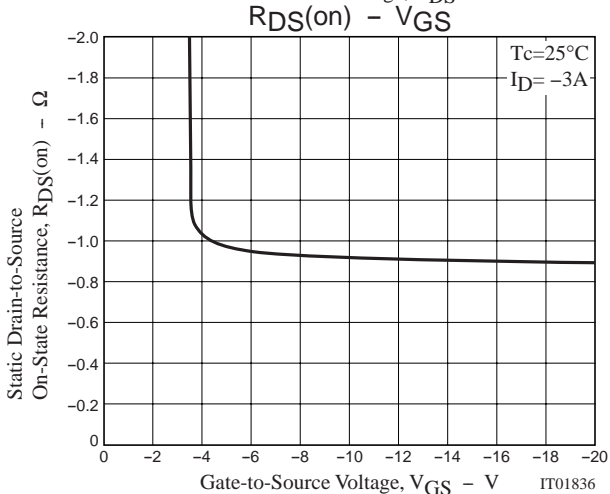
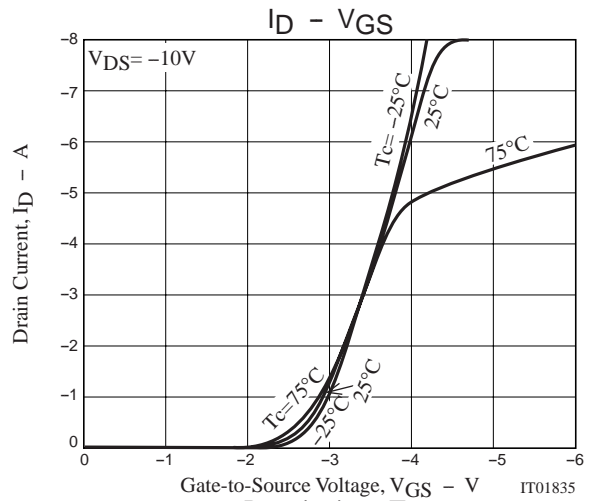
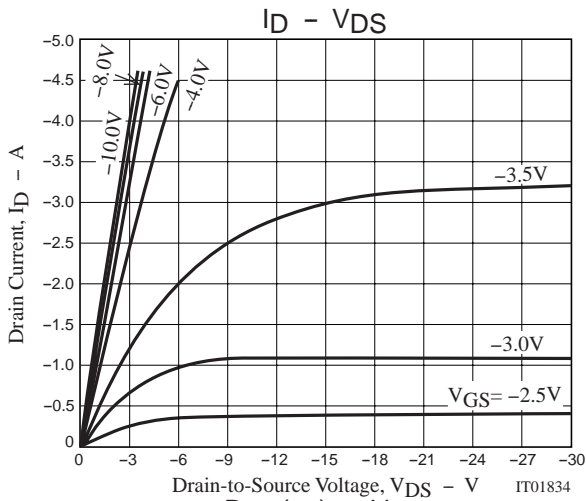
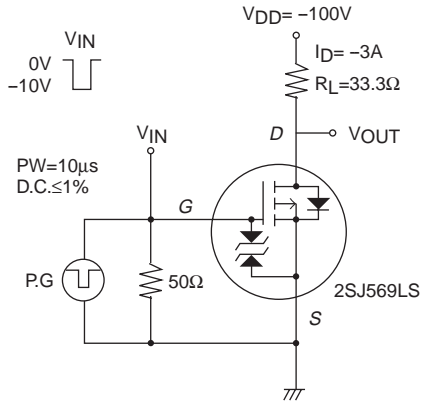
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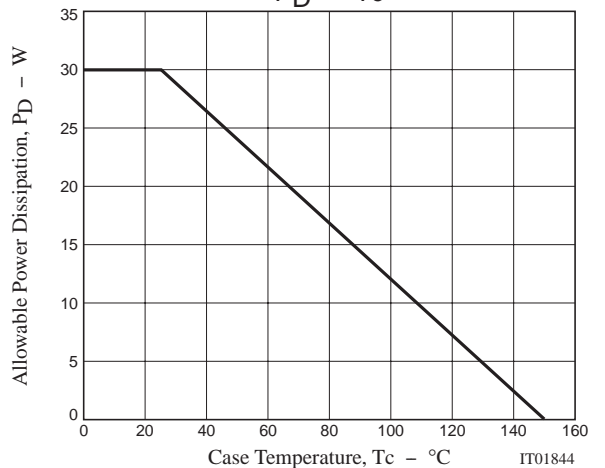
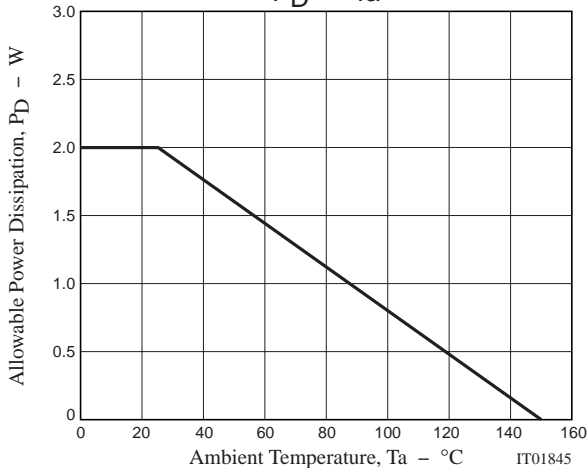
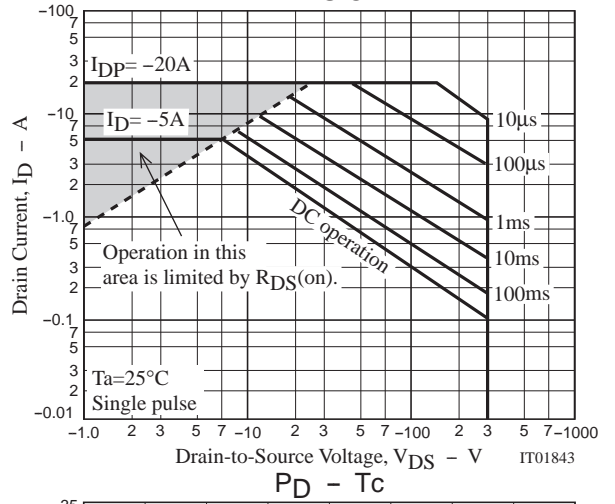
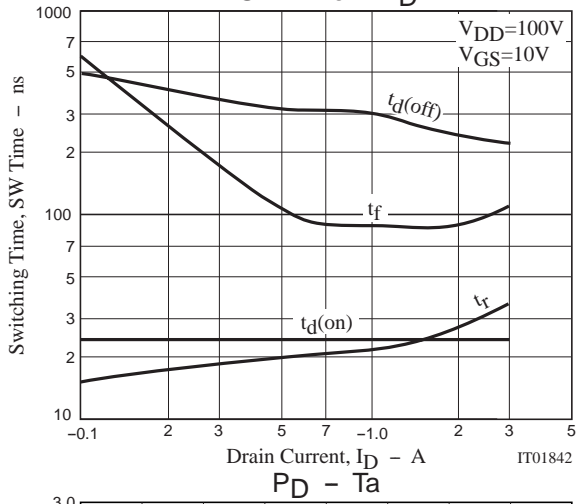
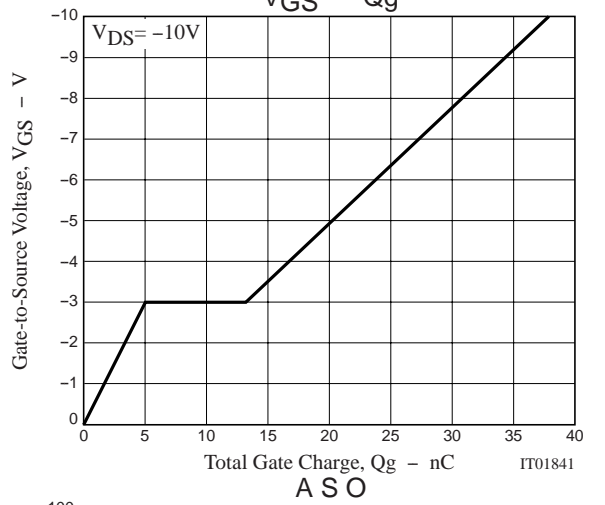
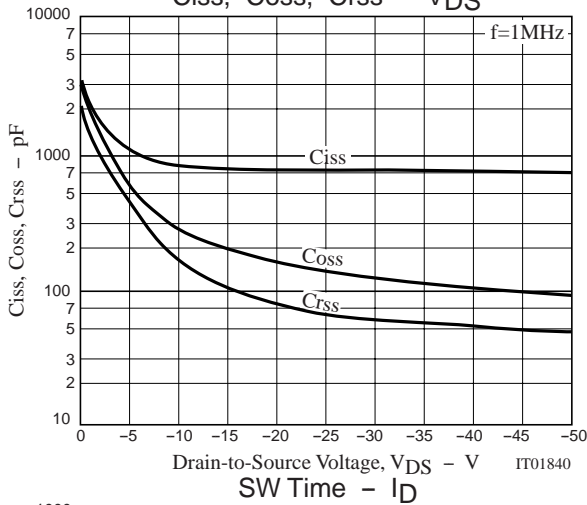
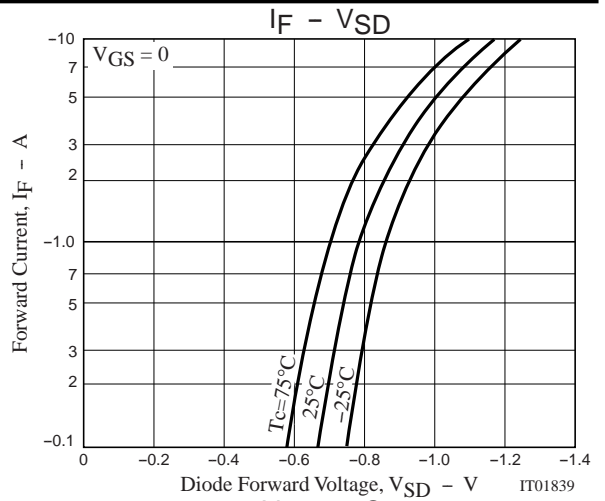
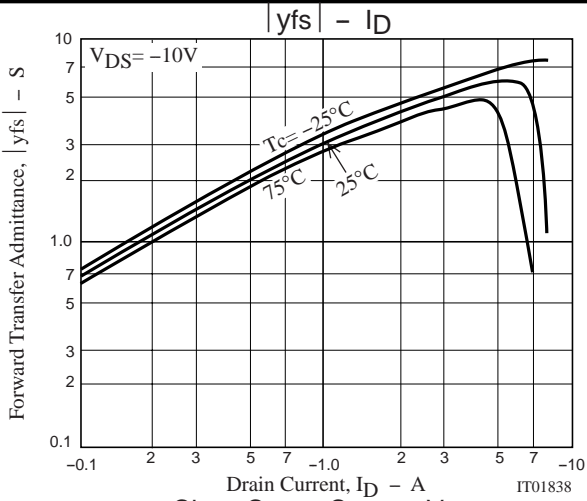
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| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|--------------|----------------------------|---------|------|------|----------|
| | | | min | typ | max | |
| Forward Transfer Admittance | $ y_{fs} $ | $V_{DS}=-10V, I_D=-3A$ | 3 | 5 | | S |
| Static Drain-to-Source On-State Resistance | $R_{DS(on)}$ | $I_D=-3A, V_{GS}=-10V$ | | 0.95 | 1.25 | Ω |
| Input Capacitance | C_{iss} | $V_{DS}=-20V, f=1MHz$ | | 750 | | pF |
| Output Capacitance | C_{oss} | $V_{DS}=-20V, f=1MHz$ | | 170 | | pF |
| Reverse Transfer Capacitance | C_{rss} | $V_{DS}=-20V, f=1MHz$ | | 76 | | pF |
| Turn-ON Delay Time | $t_d(on)$ | See specified Test Circuit | | 24 | | ns |
| Rise Time | t_r | See specified Test Circuit | | 37 | | ns |
| Turn-OFF Delay Time | $t_d(off)$ | See specified Test Circuit | | 230 | | ns |
| Fall Time | t_f | See specified Test Circuit | | 110 | | ns |
| Diode Forward Voltage | V_{SD} | $I_S=-5A, V_{GS}=0$ | | -1.0 | -1.5 | V |

Switching Time Test Circuit



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