



5HN01S

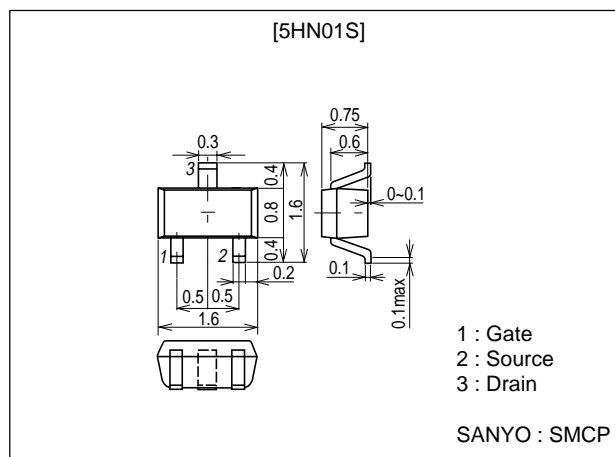
Ultrahigh-Speed Switching Applications

Features

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

Package Dimensions

unit : mm
2192



Specifications

Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|------------------|------------------------|-------------|------|
| Drain-to-Source Voltage | V _{DSS} | | 50 | V |
| Gate-to-Source Voltage | V _{GSS} | | ±20 | V |
| Drain Current (DC) | I _D | | 0.1 | A |
| Drain Current (Pulse) | I _{DP} | PW≤10μs, duty cycle≤1% | 0.4 | A |
| Allowable Power Dissipation | P _D | | 0.15 | 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 | 50 | | | V |
| Zero-Gate Voltage Drain Current | I _{DSS} | V _{DS} =50V, V _{GS} =0 | | | 10 | 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 =100μA | 1 | | 2.4 | V |
| Forward Transfer Admittance | y _{fs} | V _{DS} =10V, I _D =50mA | 85 | 120 | | mS |
| Static Drain-to-Source On-State Resistance | R _{DS(on)1} | I _D =50mA, V _{GS} =10V | | 5.8 | 7.5 | Ω |
| | R _{DS(on)2} | I _D =30mA, V _{GS} =4V | | 7.5 | 10.5 | Ω |

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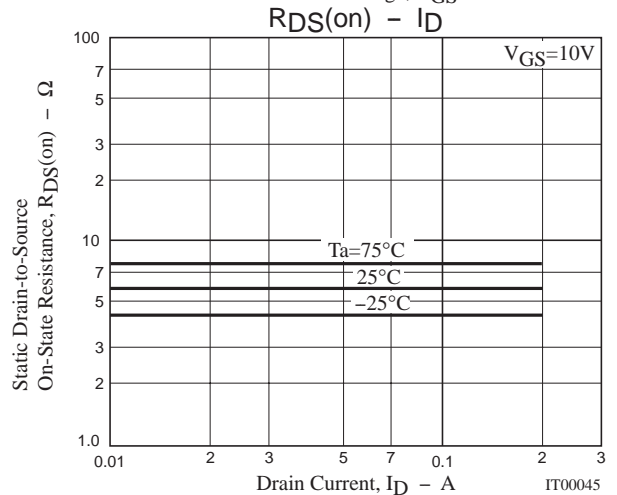
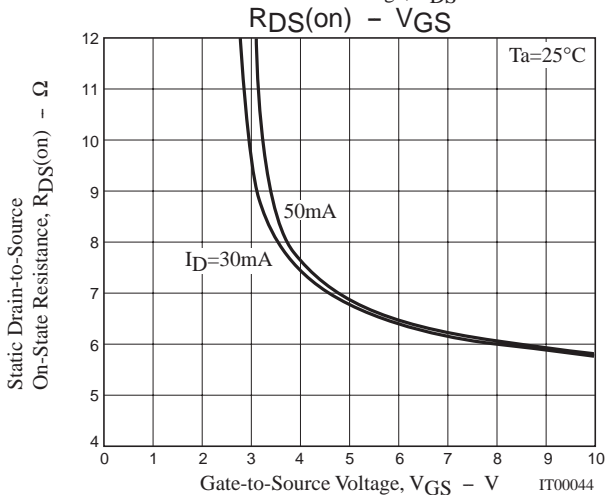
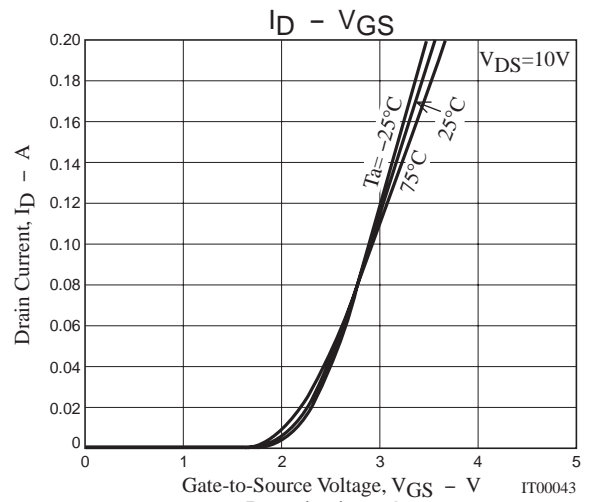
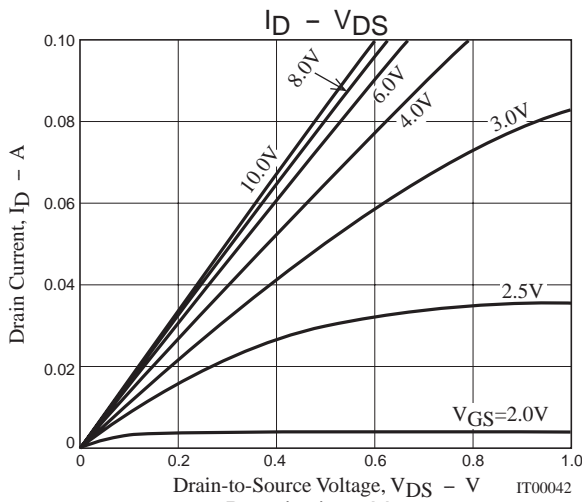
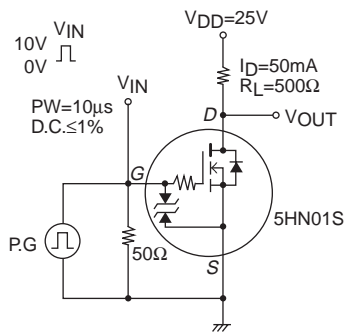
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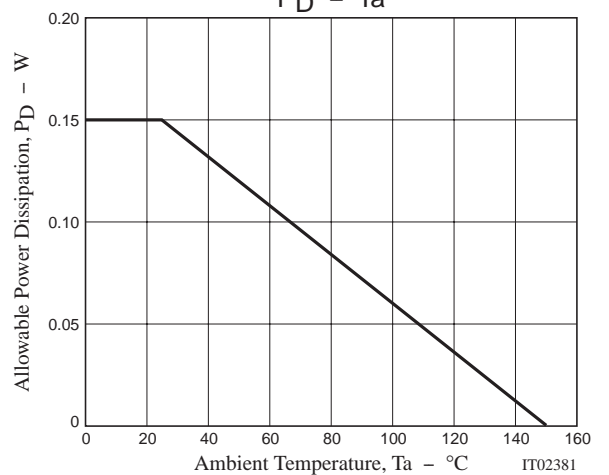
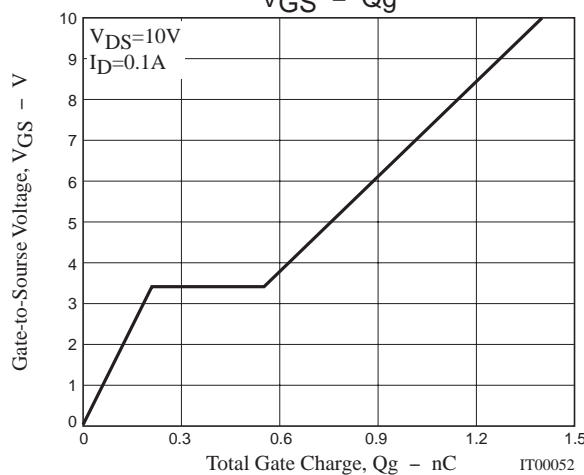
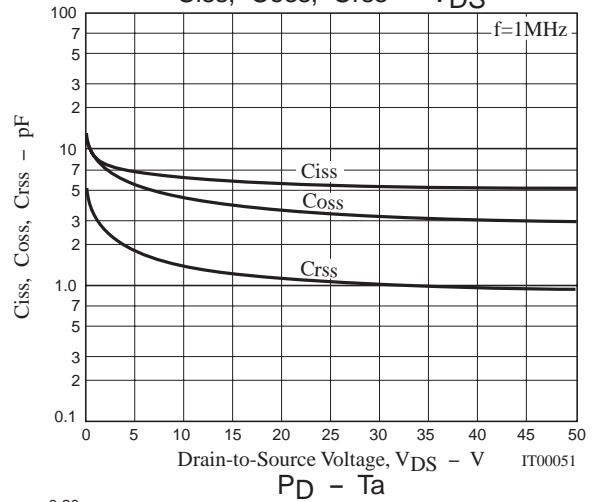
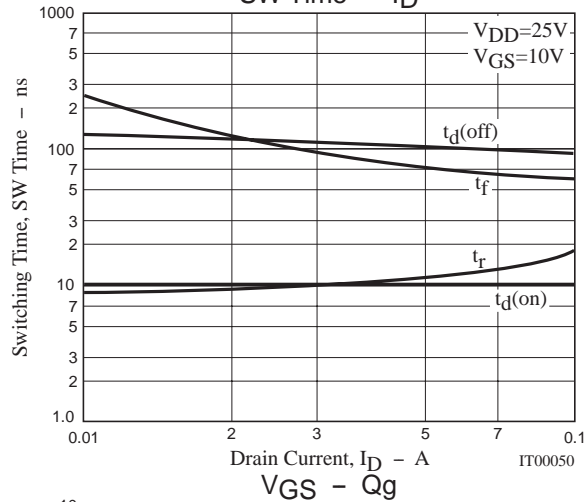
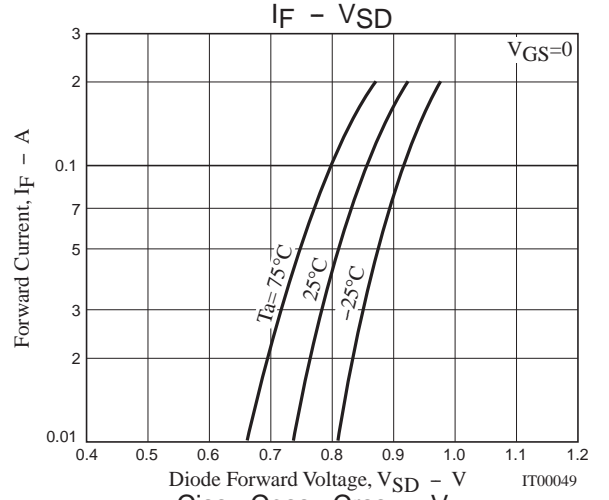
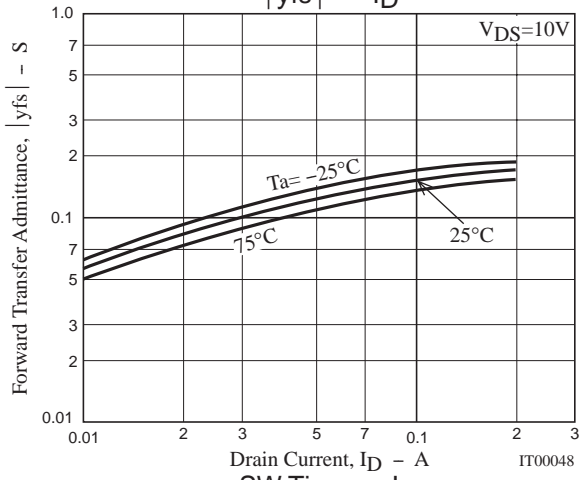
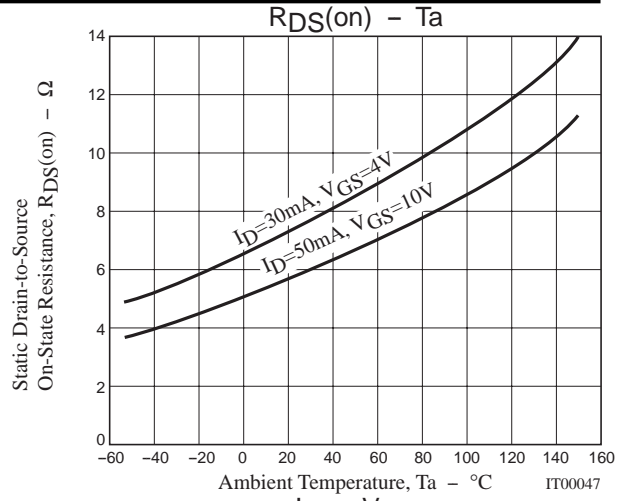
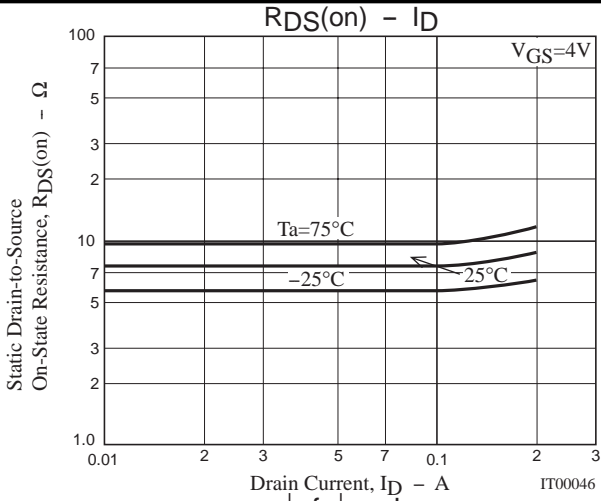
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|-------------------------------|------------|-------------------------------------|---------|------|-----|------|
| | | | min | typ | max | |
| Input Capacitance | C_{iss} | $V_{DS}=10V, f=1MHz$ | | 6.2 | | pF |
| Output Capacitance | C_{oss} | $V_{DS}=10V, f=1MHz$ | | 4.4 | | pF |
| Reverse Transfer Capacitance | C_{rss} | $V_{DS}=10V, f=1MHz$ | | 1.5 | | pF |
| Turn-ON Delay Time | $t_d(on)$ | See specified Test Circuit | | 10 | | ns |
| Rise Time | t_r | See specified Test Circuit | | 11 | | ns |
| Turn-OFF Delay Time | $t_d(off)$ | See specified Test Circuit | | 105 | | ns |
| Fall Time | t_f | See specified Test Circuit | | 75 | | ns |
| Total Gate Charge | Q_g | $V_{DS}=10V, V_{GS}=10V, I_D=100mA$ | | 1.40 | | nC |
| Gate-to-Source Charge | Q_{gs} | $V_{DS}=10V, V_{GS}=10V, I_D=100mA$ | | 0.21 | | nC |
| Gate-to-Drain "Miller" Charge | Q_{gd} | $V_{DS}=10V, V_{GS}=10V, I_D=100mA$ | | 0.34 | | nC |
| Diode Forward Voltage | V_{SD} | $I_S=100mA, V_{GS}=0$ | | 0.85 | 1.2 | V |

Marking : YC

Switching Time Test Circuit



5HN01S



Note on usage : Since the 5HN01S is designed for high-speed switching applications, please avoid using this device in the vicinity of highly charged objects.

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