



Ultrahigh-Speed Switching Applications

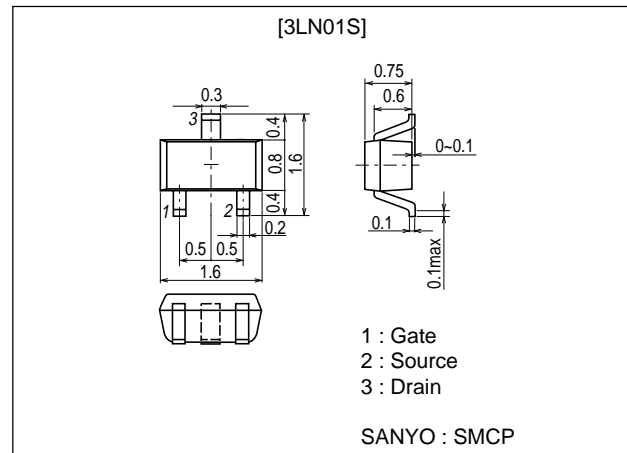
Features

- Low ON-resistance.
- Ultrahigh-Speed Switching.
- 2.5V 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} | | 30 | V |
| Gate-to-Source Voltage | V _{GSS} | | ±10 | V |
| Drain Current (DC) | I _D | | 0.15 | A |
| Drain Current (Pulse) | I _{DP} | PW≤10μs, duty cycle≤1% | 0.6 | 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 | 30 | | | V |
| Zero-Gate Voltage Drain Current | I _{DSS} | V _{DS} =30V, V _{GS} =0 | | | 10 | μA |
| Gate-to-Source Leakage Current | I _{GSS} | V _{GS} =±8V, V _{DS} =0 | | | ±10 | μA |
| Cutoff Voltage | V _{GS(off)} | V _{DS} =10V, I _D =100μA | 0.4 | | 1.3 | V |
| Forward Transfer Admittance | y _{fs} | V _{DS} =10V, I _D =80mA | 0.15 | 0.22 | | S |
| Static Drain-to-Source On-State Resistance | R _{DS(on)1} | I _D =80mA, V _{GS} =4V | | 2.9 | 3.7 | Ω |
| | R _{DS(on)2} | I _D =40mA, V _{GS} =2.5V | | 3.7 | 5.2 | Ω |
| | R _{DS(on)3} | I _D =10mA, V _{GS} =1.5V | | 6.4 | 12.8 | Ω |

Marking : YA

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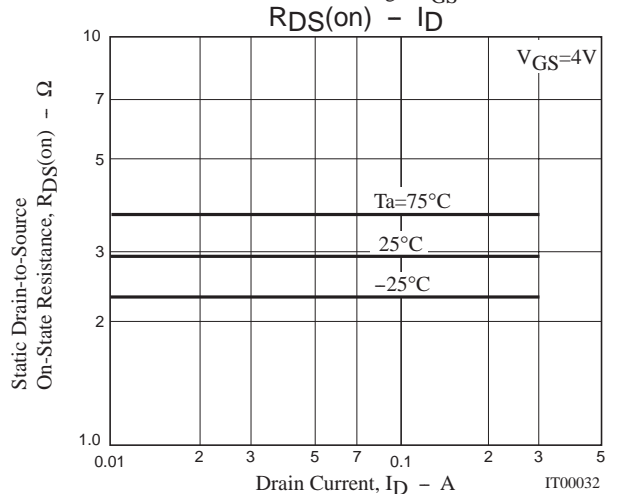
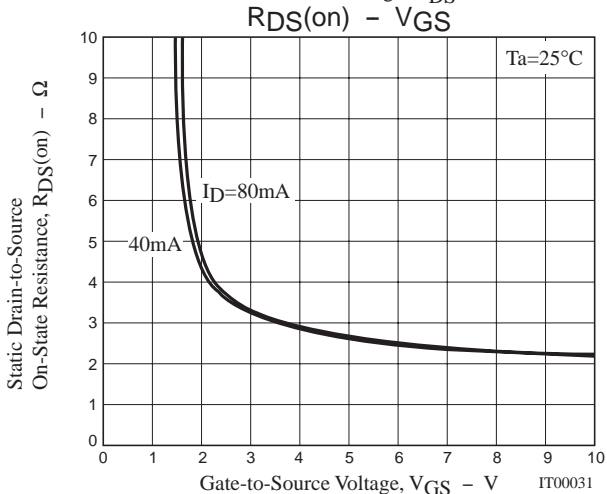
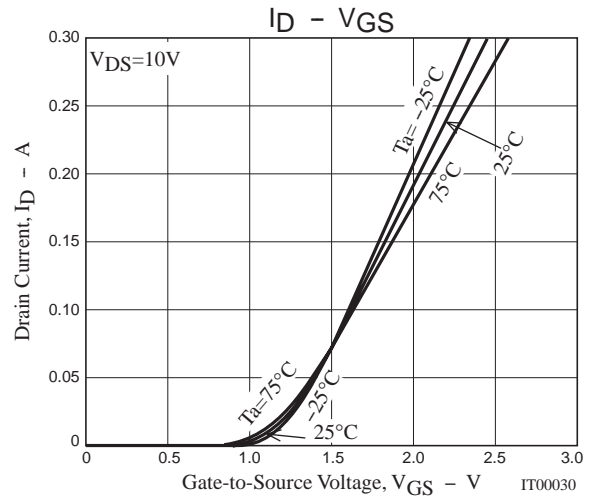
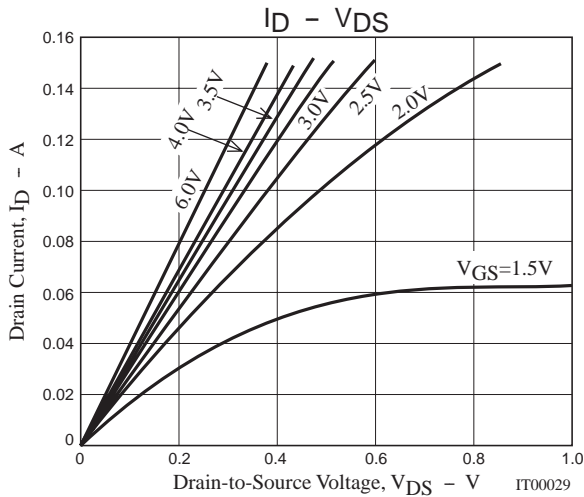
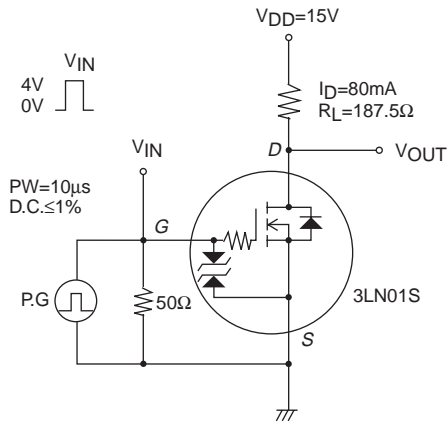
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3LN01S

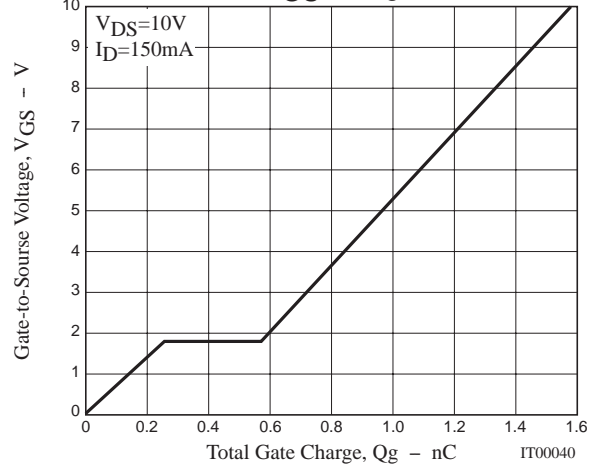
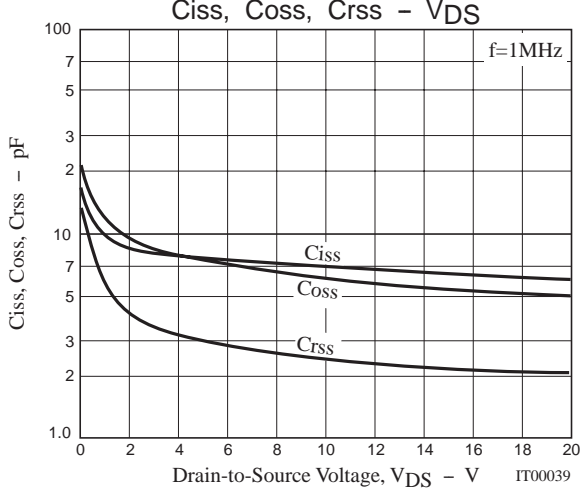
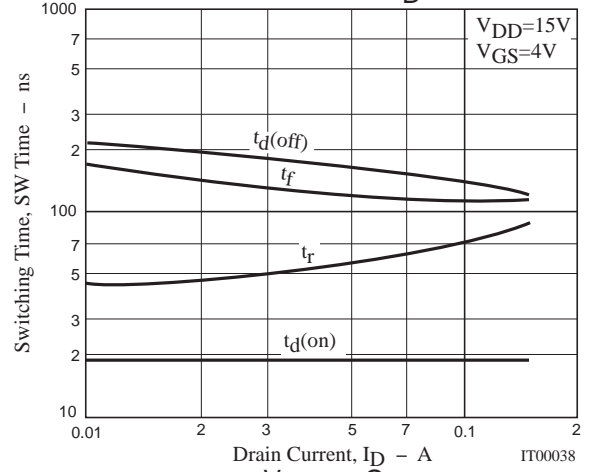
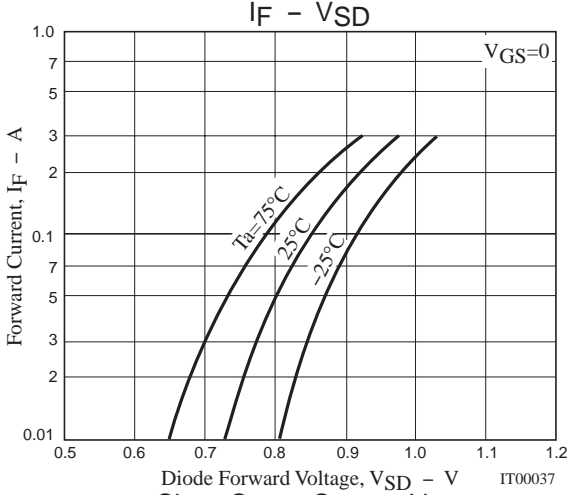
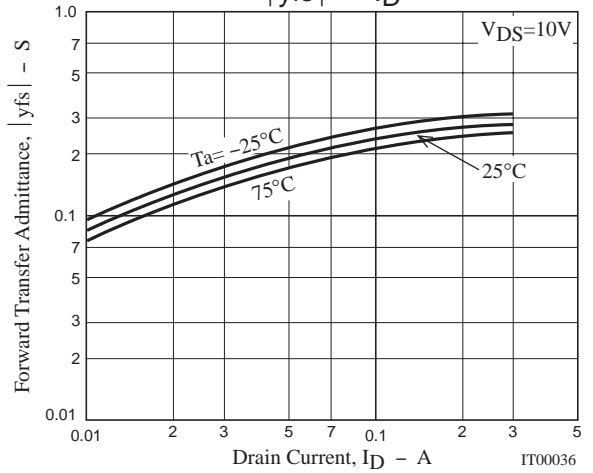
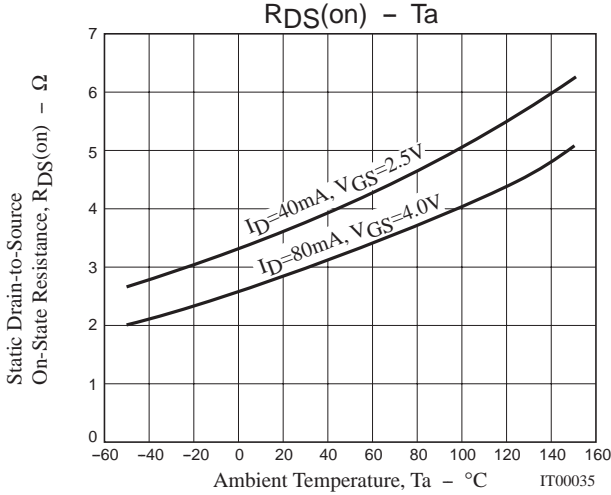
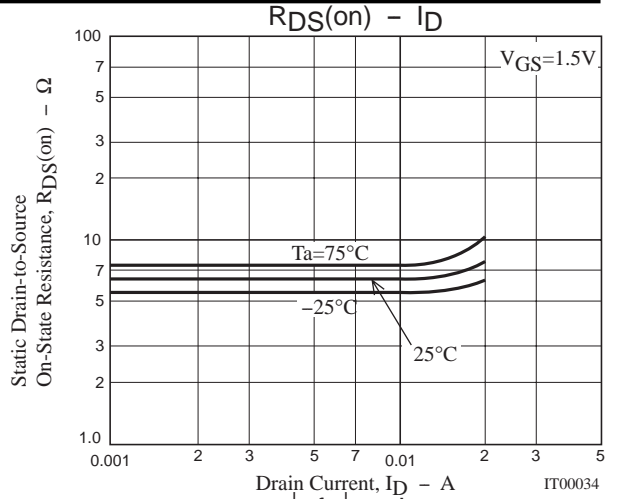
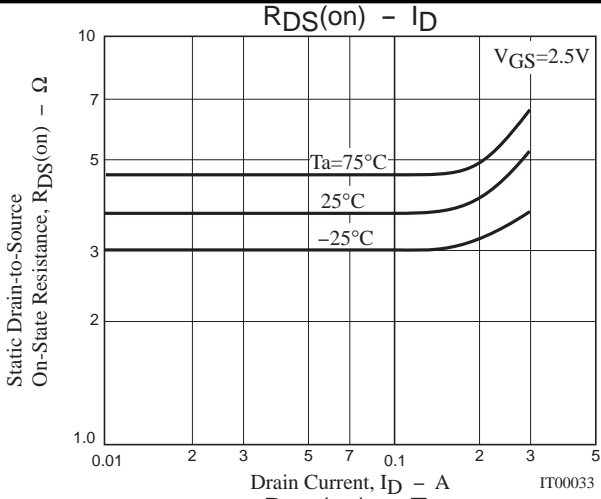
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| Parameter | Symbol | Conditions | Ratings | | | Unit |
|-------------------------------|---------------------|---|---------|------|-----|------|
| | | | min | typ | max | |
| Input Capacitance | Ciss | V _{DS} =10V, f=1MHz | | 7.0 | | pF |
| Output Capacitance | Coss | V _{DS} =10V, f=1MHz | | 5.9 | | pF |
| Reverse Transfer Capacitance | Crss | V _{DS} =10V, f=1MHz | | 2.3 | | pF |
| Turn-ON Delay Time | t _{d(on)} | See specified Test Circuit | | 19 | | ns |
| Rise Time | t _r | See specified Test Circuit | | 65 | | ns |
| Turn-OFF Delay Time | t _{d(off)} | See specified Test Circuit | | 155 | | ns |
| Fall Time | t _f | See specified Test Circuit | | 120 | | ns |
| Total Gate Charge | Q _g | V _{DS} =10V, V _{GS} =10V, I _D =150mA | | 1.58 | | nC |
| Gate-to-Source Charge | Q _{gs} | V _{DS} =10V, V _{GS} =10V, I _D =150mA | | 0.26 | | nC |
| Gate-to-Drain "Miller" Charge | Q _{gd} | V _{DS} =10V, V _{GS} =10V, I _D =150mA | | 0.31 | | nC |
| Diode Forward Voltage | V _{SD} | I _S =150mA, V _{GS} =0 | | 0.87 | 1.2 | V |

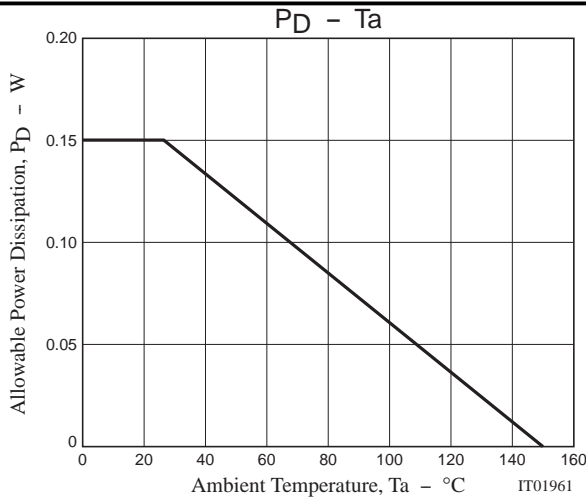
Switching Time Test Circuit



3LN01S



3LN01S



Note on usage : Since the 3LN01S is designed for high-speed switching applications, please avoid using this device in the vicinity of highly charged objects.

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