



5LN01C — N-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 2.5V drive.

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} | | ±10 | 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 | | 0.25 | 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} =0V | 50 | | | V |
| Zero-Gate Voltage Drain Current | I _{DSS} | V _{DS} =50V, V _{GS} =0V | | | 1 | μA |
| Gate-to-Source Leakage Current | I _{GSS} | V _{GS} =±8V, V _{DS} =0V | | | ±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 =50mA | 0.13 | 0.18 | | S |
| Static Drain-to-Source on-State Resistance | R _{DS(on)1} | I _D =50mA, V _{GS} =4V | | 6 | 7.8 | Ω |
| | R _{DS(on)2} | I _D =30mA, V _{GS} =2.5V | | 7.1 | 9.9 | Ω |
| | R _{DS(on)3} | I _D =10mA, V _{GS} =1.5V | | 10 | 20 | Ω |
| Input Capacitance | C _{iss} | V _{DS} =10V, f=1MHz | | 6.6 | | pF |
| Output Capacitance | C _{oss} | V _{DS} =10V, f=1MHz | | 4.7 | | pF |
| Reverse Transfer Capacitance | C _{rss} | V _{DS} =10V, f=1MHz | | 1.7 | | pF |
| Turn-ON Delay Time | t _{d(on)} | See specified Test Circuit. | | 18 | | ns |
| Rise Time | t _r | See specified Test Circuit. | | 42 | | ns |
| Turn-OFF Delay Time | t _{d(off)} | See specified Test Circuit. | | 190 | | ns |
| Fall Time | t _f | See specified Test Circuit. | | 105 | | ns |

Marking : YB

Continued on next page.

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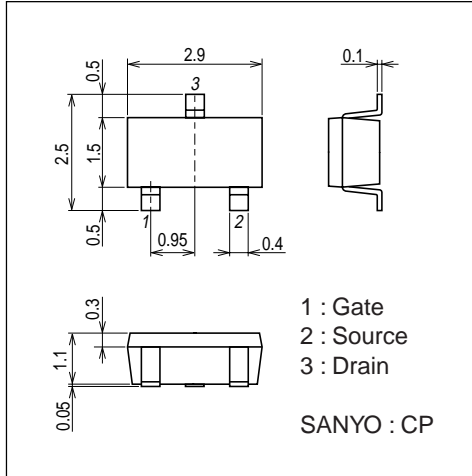
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| Parameter | Symbol | Conditions | Ratings | | | Unit |
|-------------------------------|-----------------|---|---------|------|-----|------|
| | | | min | typ | max | |
| Total Gate Charge | Qg | V _{DS} =10V, V _{GS} =10V, I _D =100mA | | 1.57 | | nC |
| Gate-to-Source Charge | Qgs | V _{DS} =10V, V _{GS} =10V, I _D =100mA | | 0.20 | | nC |
| Gate-to-Drain "Miller" Charge | Qgd | V _{DS} =10V, V _{GS} =10V, I _D =100mA | | 0.32 | | nC |
| Diode Forward Voltage | V _{SD} | I _S =100mA, V _{GS} =0V | | 0.85 | 1.2 | V |

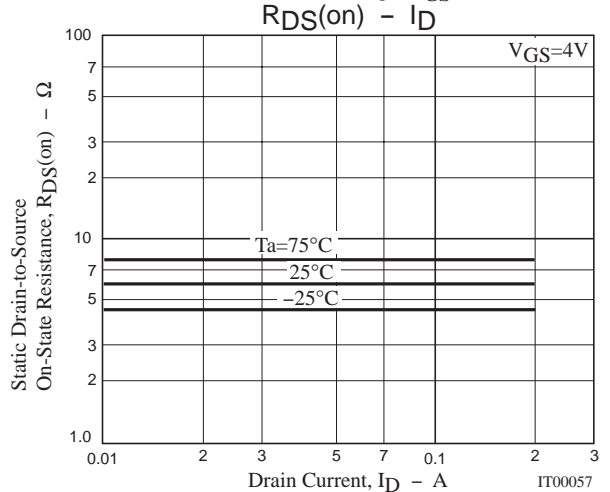
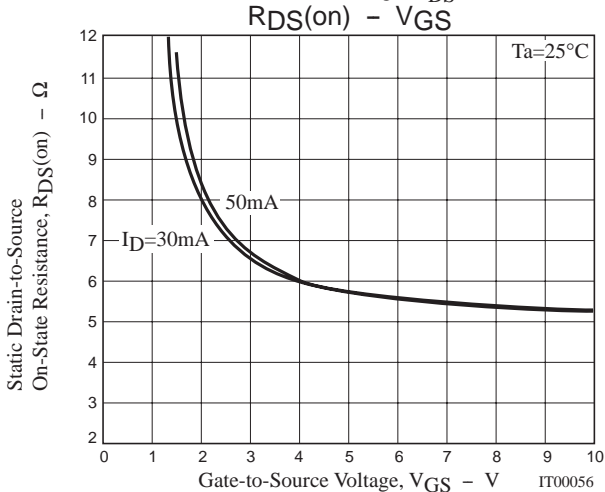
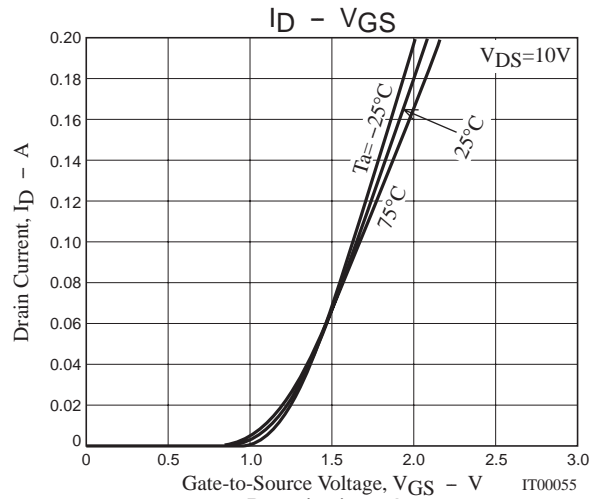
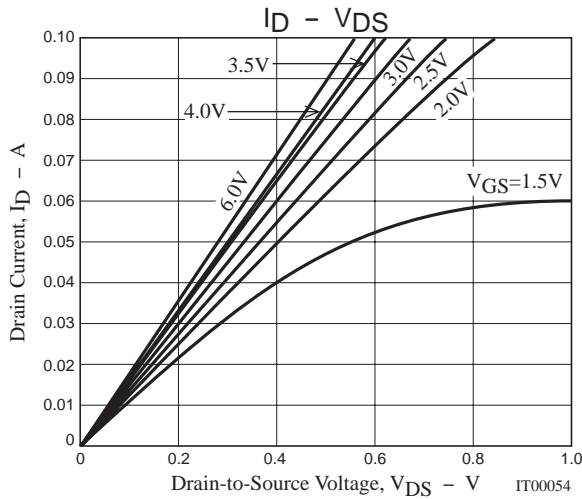
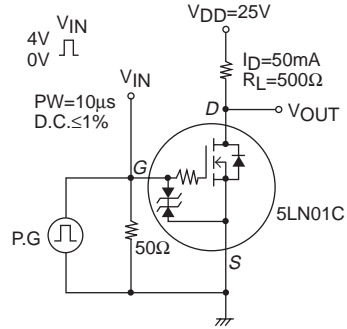
Package Dimensions

unit : mm

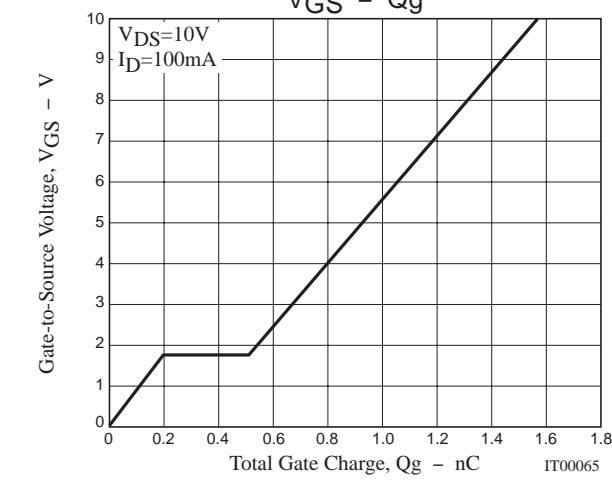
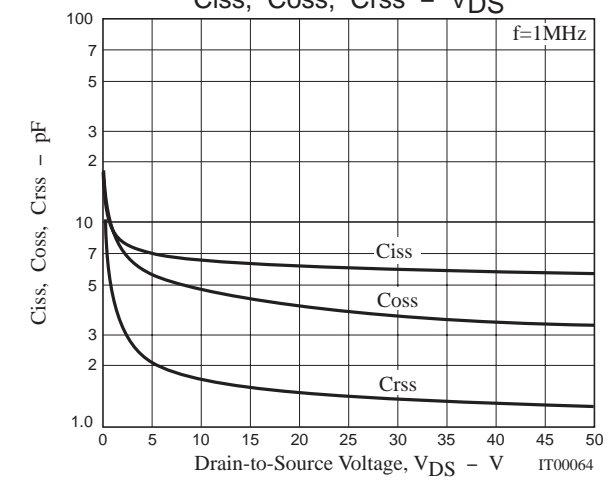
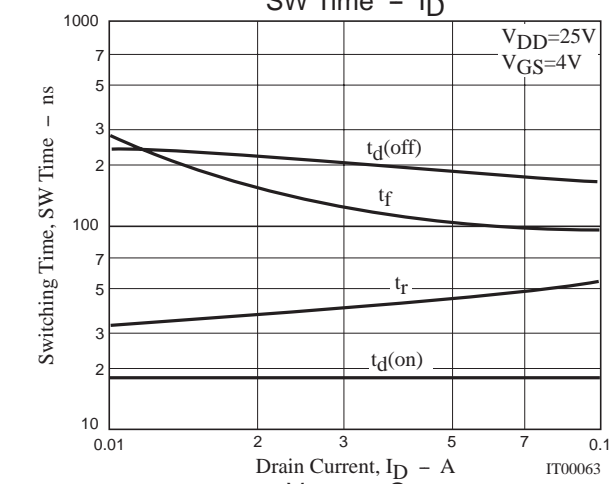
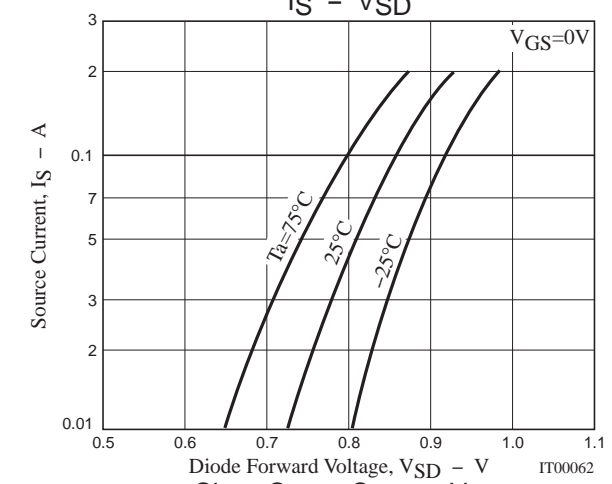
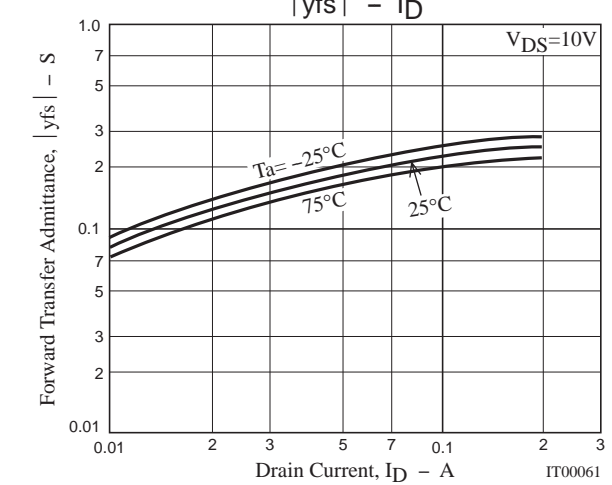
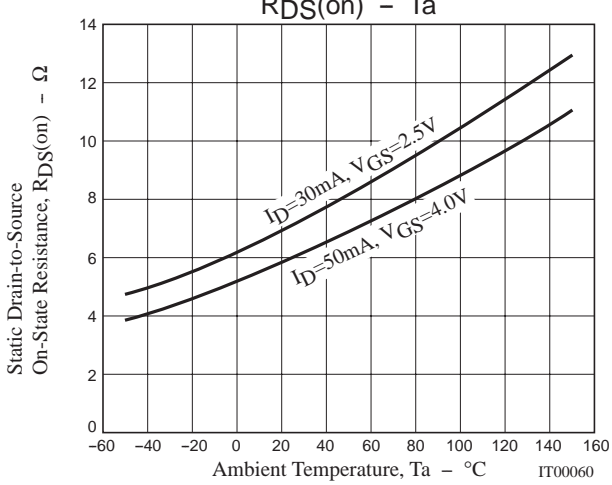
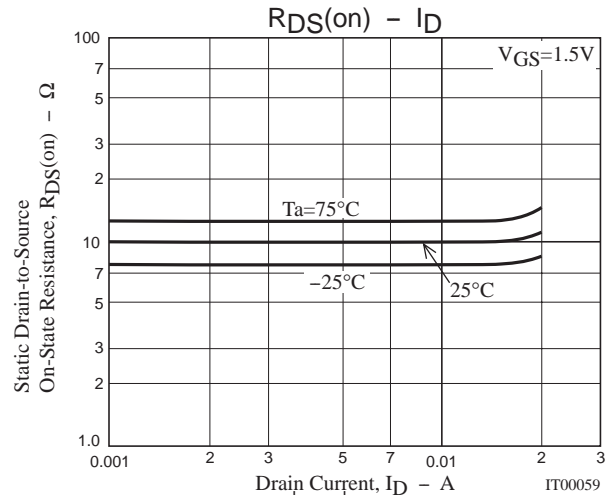
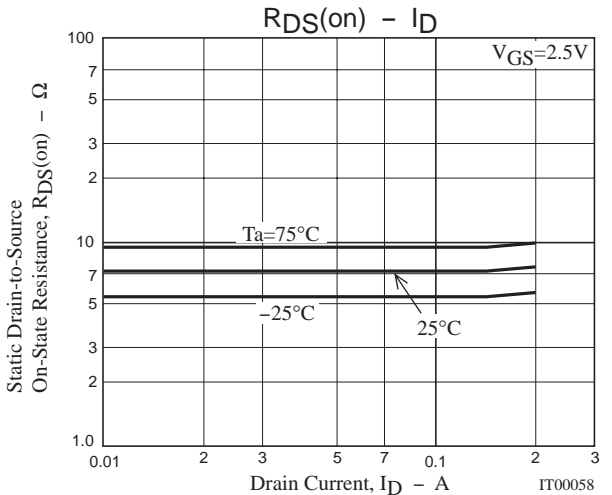
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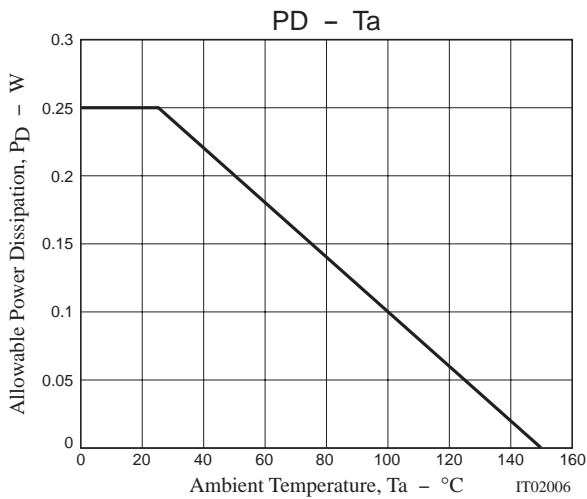


Switching Time Test Circuit



5LN01C





Note on usage : Since the 5LN01C is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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