



N-Channel Silicon MOSFET

6LN04S — General-Purpose Switching Device Applications

Features

- 1.5V drive.

Specifications

Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|--------|--|-------------|------|
| Drain-to-Source Voltage | VDSS | | 60 | V |
| Gate-to-Source Voltage | VGSS | | ±10 | V |
| Drain Current (DC) | ID | | 200 | mA |
| Drain Current (Pulse) | IDP | PW≤10μs, duty cycle≤1% | 800 | mA |
| Allowable Power Dissipation | PD | When mounted on glass epoxy substrate (145mmX80mmX1.6mm) | 0.15 | W |
| Channel Temperature | Tch | | 150 | °C |
| Storage Temperature | Tstg | | -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 | ID=1mA, VGS=0V | 60 | | | V |
| Zero-Gate Voltage Drain Current | IDSS | VDS=60V, VGS=0V | | | 1 | μA |
| Gate-to-Source Leakage Current | IGSS | VGS=±8V, VDS=0V | | | ±10 | μA |
| Cutoff Voltage | VGS(off) | VDS=10V, ID=100μA | 0.4 | | 1.3 | V |
| Forward Transfer Admittance | yfs | VDS=10V, ID=100mA | 280 | 480 | | mS |
| Static Drain-to-Source On-State Resistance | RDS(on)1 | ID=100mA, VGS=4V | | 2.2 | 2.9 | Ω |
| | RDS(on)2 | ID=50mA, VGS=2.5V | | 2.4 | 3.4 | Ω |
| | RDS(on)3 | ID=10mA, VGS=1.5V | | 3.5 | 7.0 | Ω |
| Input Capacitance | Ciss | VDS=20V, f=1MHz | | 26 | | pF |
| Output Capacitance | Coss | VDS=20V, f=1MHz | | 5.9 | | pF |
| Reverse Transfer Capacitance | Crss | VDS=20V, f=1MHz | | 3.2 | | pF |

Marking : YS

Continued on next page.

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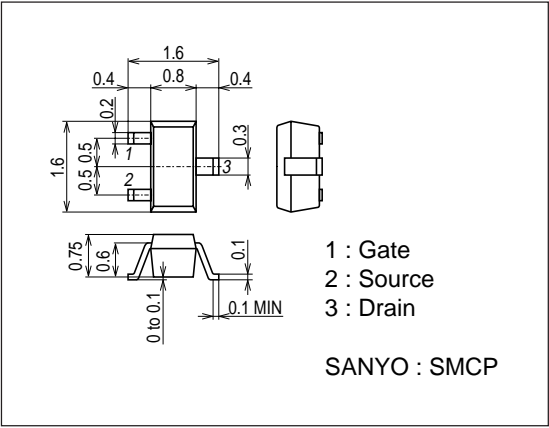
6LN04S

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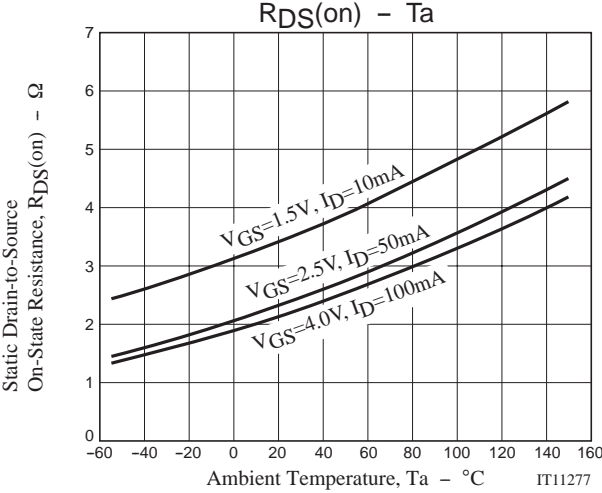
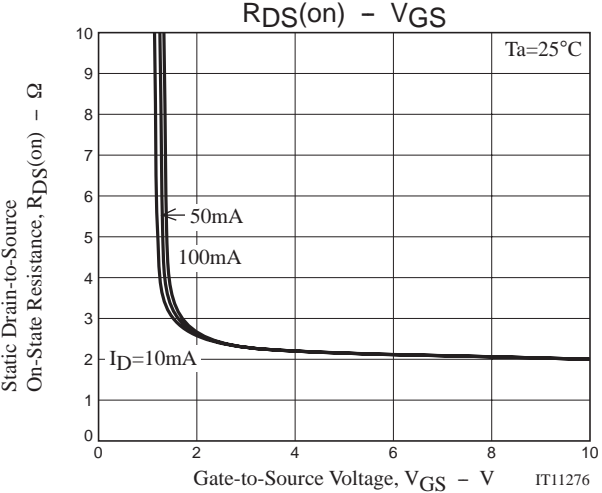
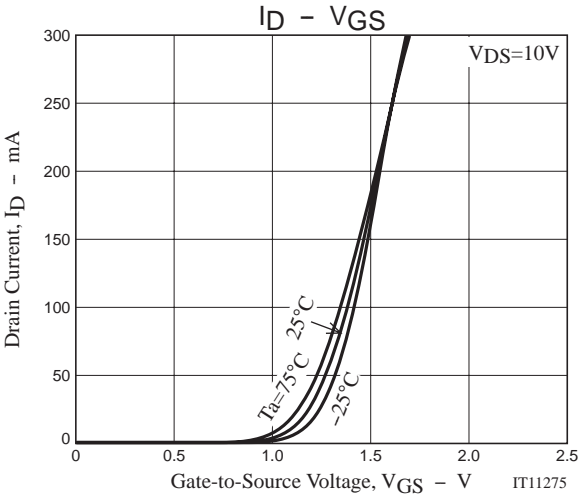
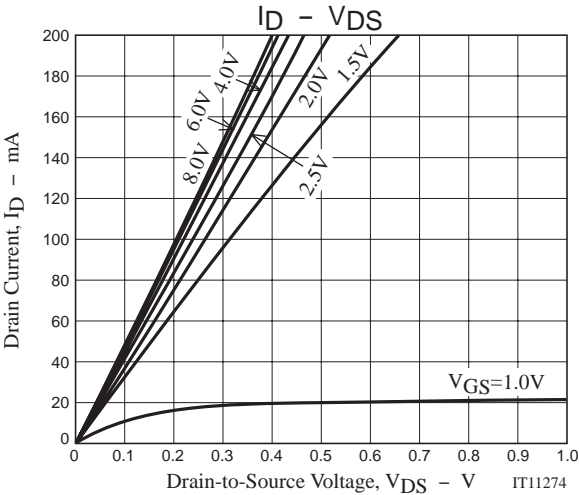
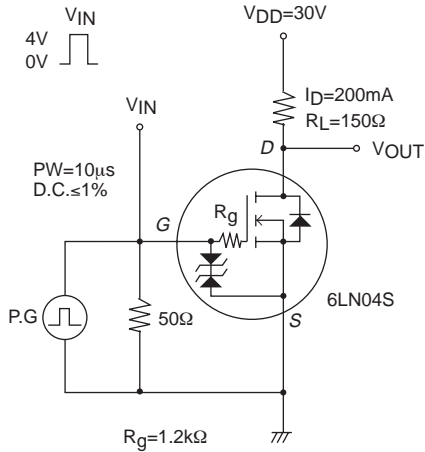
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|-------------------------------|--------------|------------------------------------|---------|------|-----|------|
| | | | min | typ | max | |
| Turn-ON Delay Time | $t_{d(on)}$ | See specified Test Circuit. | | 18.5 | | ns |
| Rise Time | t_r | See specified Test Circuit. | | 26 | | ns |
| Turn-OFF Delay Time | $t_{d(off)}$ | See specified Test Circuit. | | 146 | | ns |
| Fall Time | t_f | See specified Test Circuit. | | 69 | | ns |
| Total Gate Charge | Q_g | $V_{DS}=30V, V_{GS}=4V, I_D=200mA$ | | 1.0 | | nC |
| Gate-to-Source Charge | Q_{gs} | $V_{DS}=30V, V_{GS}=4V, I_D=200mA$ | | 0.2 | | nC |
| Gate-to-Drain "Miller" Charge | Q_{gd} | $V_{DS}=30V, V_{GS}=4V, I_D=200mA$ | | 0.2 | | nC |
| Diode Forward Voltage | V_{SD} | $I_S=200mA, V_{GS}=0V$ | | 0.83 | 1.2 | V |

Package Dimensions

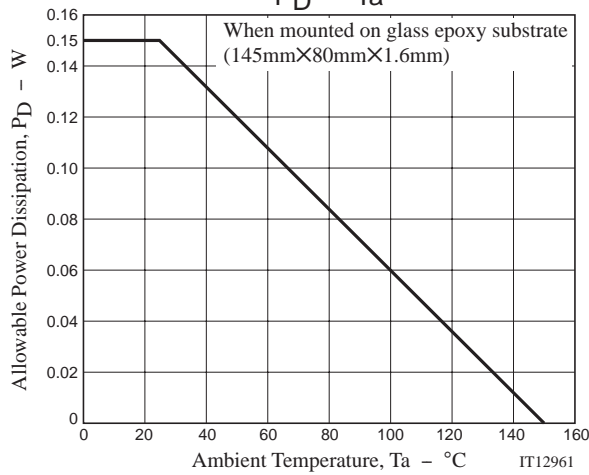
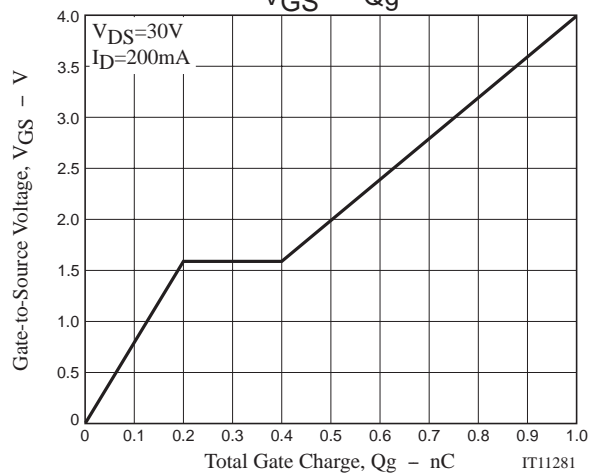
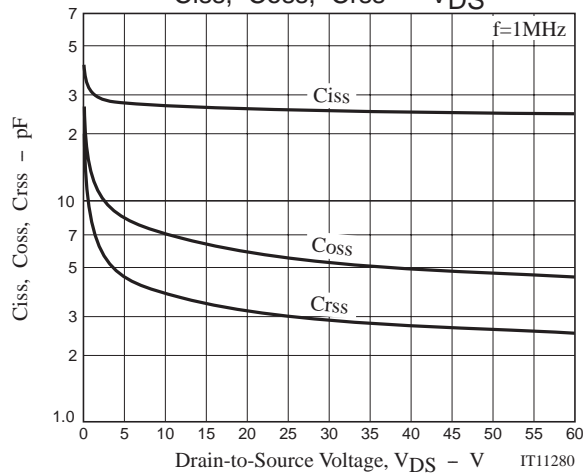
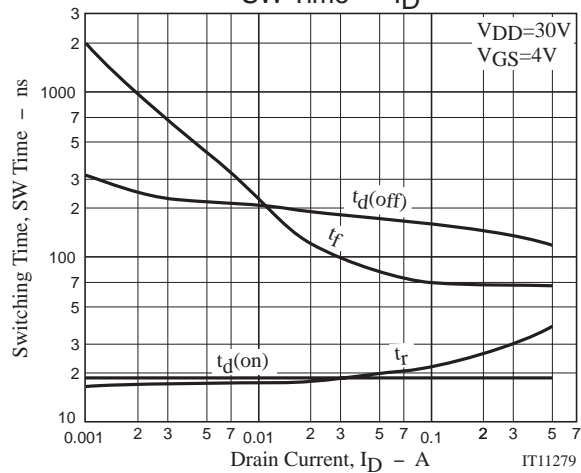
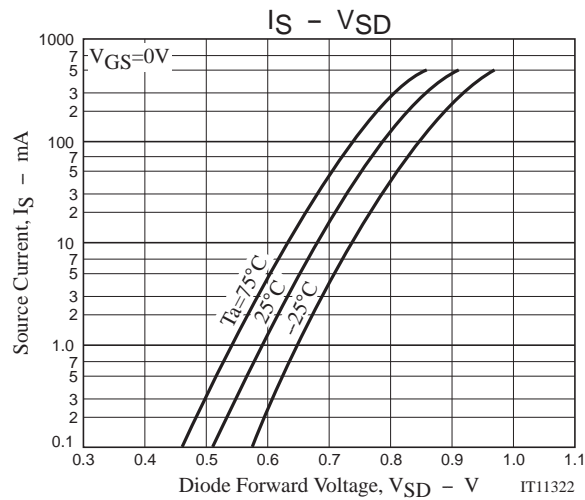
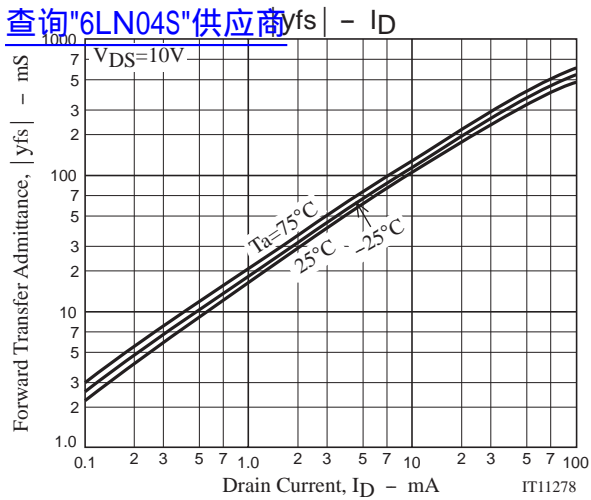
unit : mm (typ)
 7027-004



Switching Time Test Circuit



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Note on usage : Since the 6LN04S is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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