



2SK4096LS — N-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

- Low ON-resistance, low input capacitance, ultrahigh-speed switching.
- Adoption of high reliability HVP process.
- Attachment workability is good by Mica-less package.
- Avalanche resistance guarantee.

Specifications

Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------------|-----------------------|---|-------------|------|
| Drain-to-Source Voltage | V _{DSS} | | 500 | V |
| Gate-to-Source Voltage | V _{GSS} | | ±30 | V |
| Drain Current (DC) | I _{DC} *1 | Limited only by maximum temperature | 8 | A |
| | I _{Dpack} *2 | SANYO's ideal heat dissipation condition | 7.1 | A |
| Drain Current (Pulse) | I _{DP} | PW≤10μs, duty cycle≤1% | 32 | A |
| Allowable Power Dissipation | P _D | | 2.0 | W |
| | | T _c =25°C (SANYO's ideal heat dissipation condition) | 33 | W |
| Channel Temperature | T _{ch} | | 150 | °C |
| Storage Temperature | T _{stg} | | -55 to +150 | °C |
| Avalanche Energy (Single Pulse) *3 | E _{AS} | | 397 | mJ |
| Avalanche Current *4 | I _{AV} | | 8 | A |

*1 Shows chip capability

*2 Package limited

*3 V_{DD}=99V, L=10mH, I_{AV}=8A

*4 L≤10mH, single pulse

Marking : K4096

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2SK4096LS

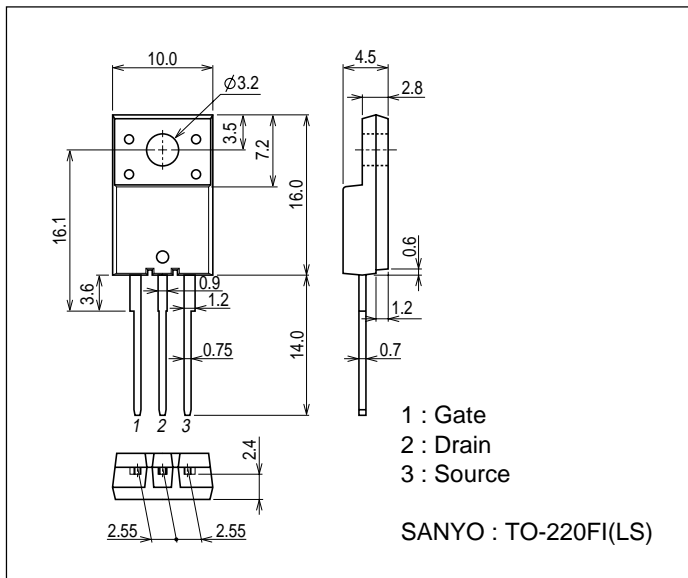
Electrical Characteristics at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|---------------|-----------------------------------|---------|------|-----------|----------|
| | | | min | typ | max | |
| Drain-to-Source Breakdown Voltage | $V_{(BR)DSS}$ | $I_D=10mA, V_{GS}=0V$ | 500 | | | V |
| Zero-Gate Voltage Drain Current | I_{DSS} | $V_{DS}=400V, V_{GS}=0V$ | | | 100 | μA |
| Gate-to-Source Leakage Current | I_{GSS} | $V_{GS}=\pm 30V, V_{DS}=0V$ | | | ± 100 | nA |
| Cutoff Voltage | $V_{GS(off)}$ | $V_{DS}=10V, I_D=1mA$ | 3 | | 5 | V |
| Forward Transfer Admittance | $ y_{fs} $ | $V_{DS}=10V, I_D=4A$ | 2.2 | 4.5 | | S |
| Static Drain-to-Source On-State Resistance | $R_{DS(on)}$ | $I_D=4A, V_{GS}=10V$ | | 0.65 | 0.85 | Ω |
| Input Capacitance | C_{iss} | $V_{DS}=30V, f=1MHz$ | | 600 | | pF |
| Output Capacitance | C_{oss} | $V_{DS}=30V, f=1MHz$ | | 130 | | pF |
| Reverse Transfer Capacitance | C_{rss} | $V_{DS}=30V, f=1MHz$ | | 28 | | pF |
| Turn-ON Delay Time | $t_d(on)$ | See specified Test Circuit. | | 18.5 | | ns |
| Rise Time | t_r | See specified Test Circuit. | | 46 | | ns |
| Turn-OFF Delay Time | $t_d(off)$ | See specified Test Circuit. | | 75 | | ns |
| Fall Time | t_f | See specified Test Circuit. | | 33 | | ns |
| Total Gate Charge | Q_g | $V_{DS}=200V, V_{GS}=10V, I_D=8A$ | | 24 | | nC |
| Gate-to-Source Charge | Q_{gs} | $V_{DS}=200V, V_{GS}=10V, I_D=8A$ | | 4.5 | | nC |
| Gate-to-Drain "Miller" Charge | Q_{gd} | $V_{DS}=200V, V_{GS}=10V, I_D=8A$ | | 14 | | nC |
| Diode Forward Voltage | V_{SD} | $I_S=8A, V_{GS}=0V$ | | 0.9 | 1.2 | V |

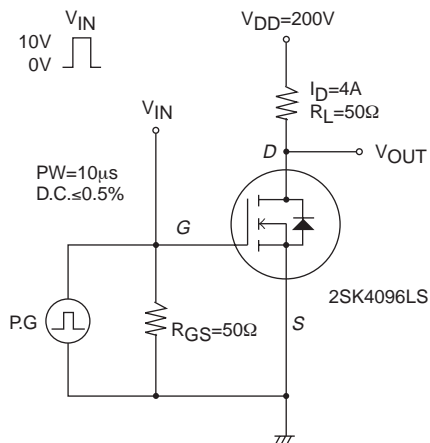
Package Dimensions

unit : mm (typ)

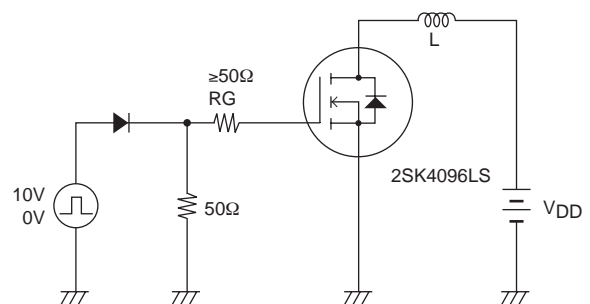
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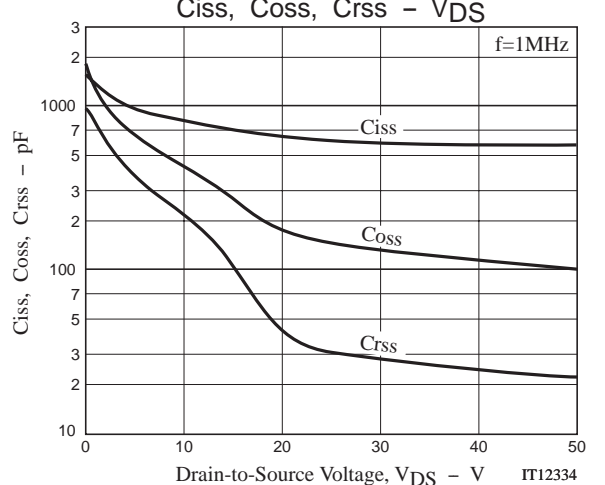
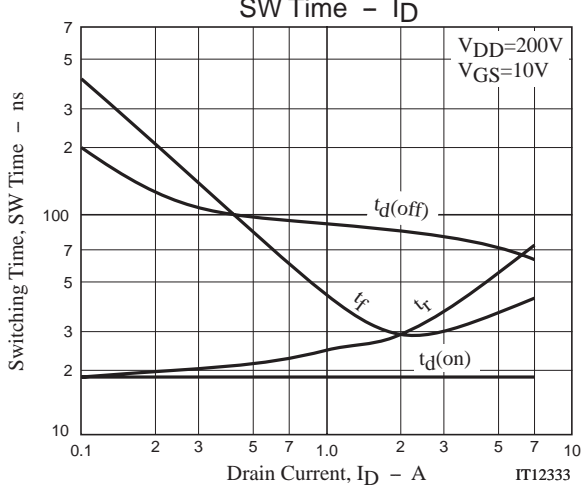
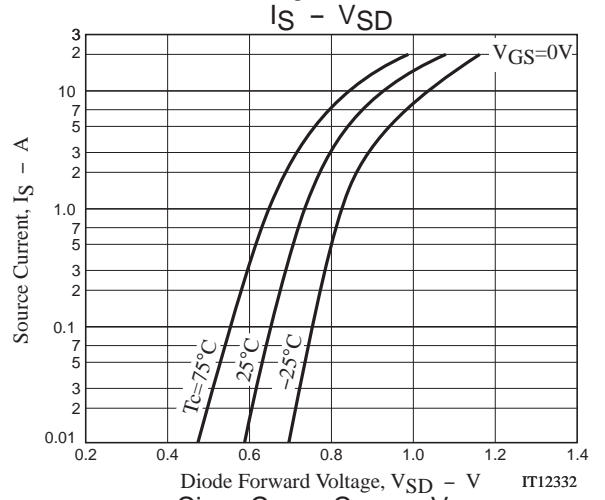
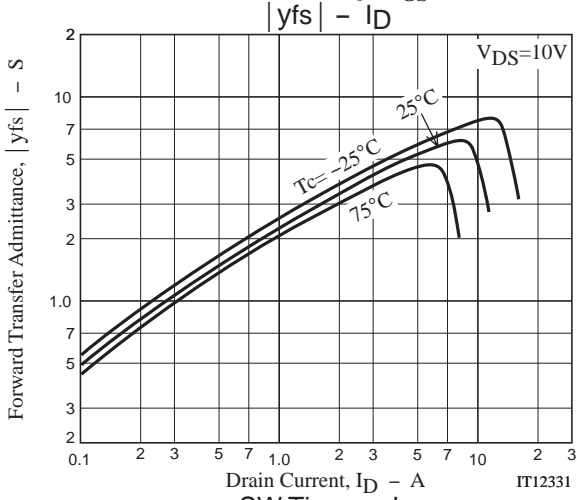
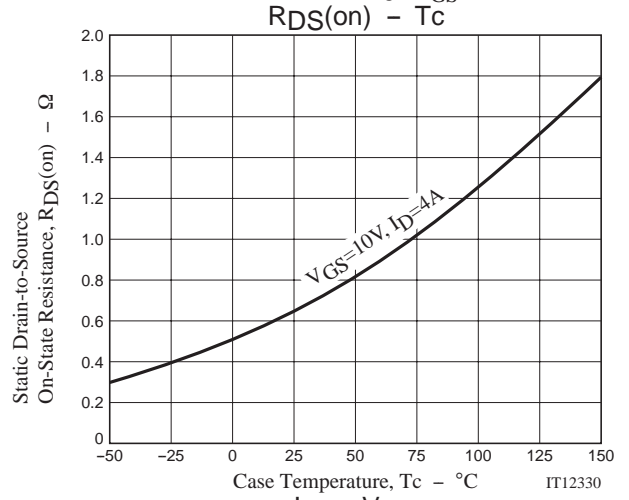
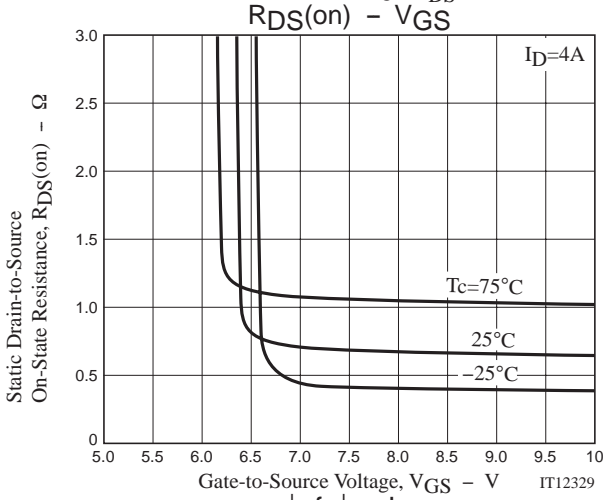
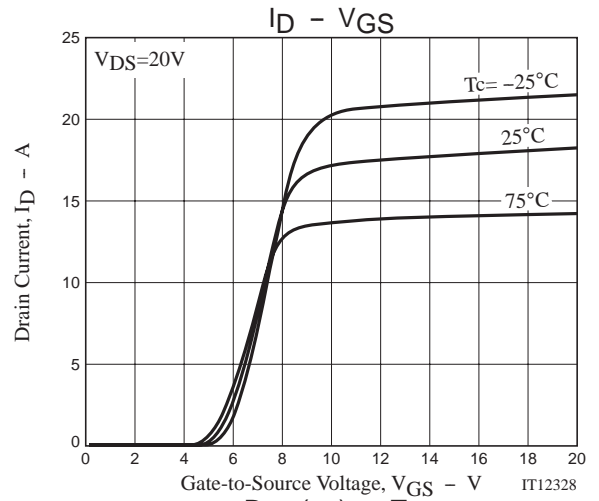
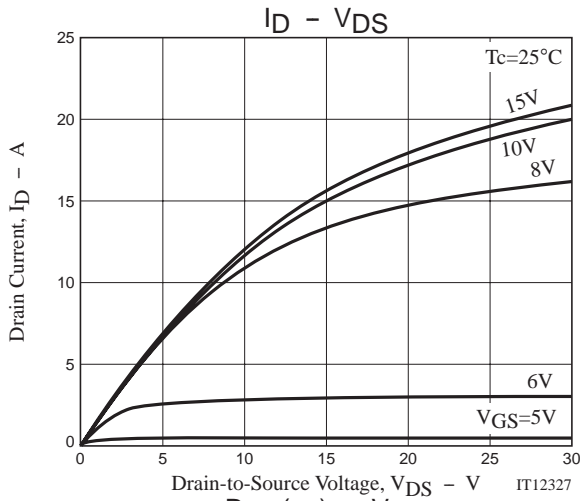
Switching Time Test Circuit



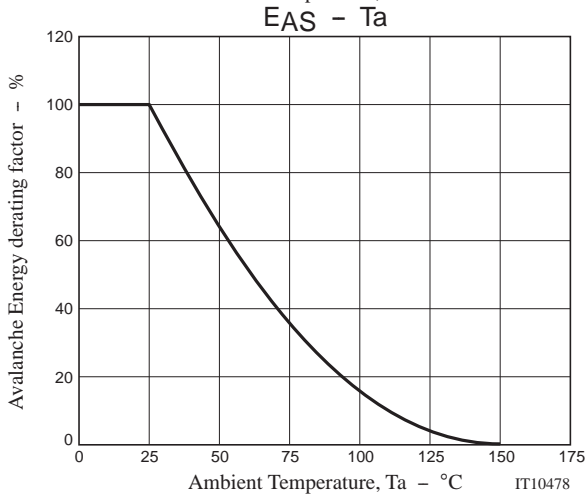
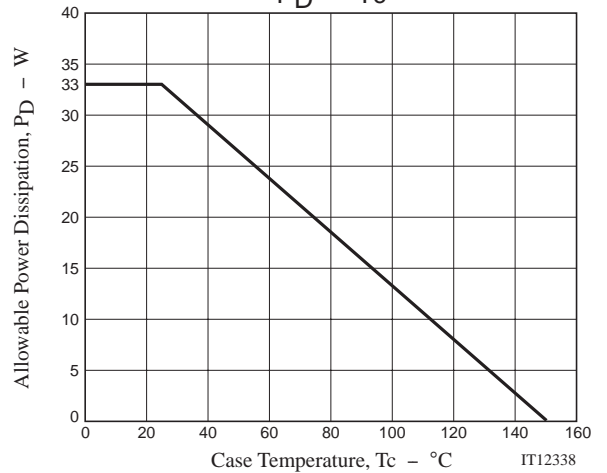
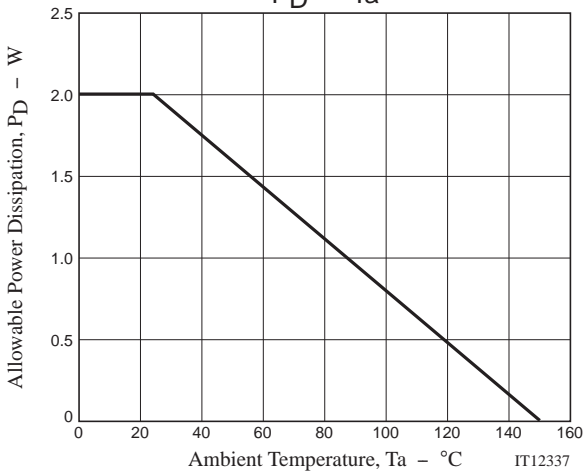
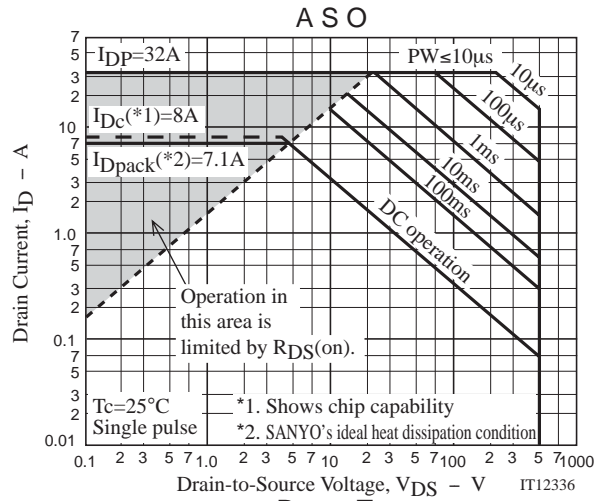
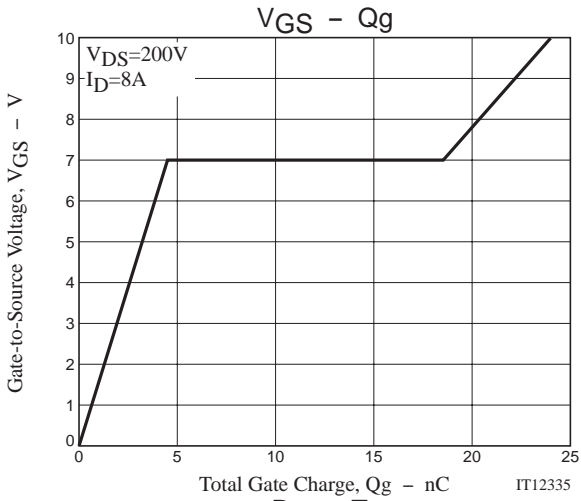
Avalanche Resistance Test Circuit



2SK4096LS



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Note on usage : Since the 2SK4096LS is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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