



SANYO Semiconductors

DATA SHEET

2SK4098LS — 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} | | 600 | V |
| Gate-to-Source Voltage | V _{GSS} | | ±30 | V |
| Drain Current (DC) | I _{Dc} ^{*1} | Limited only by maximum temperature | 7 | A |
| | I _{Dpack} ^{*2} | SANYO's ideal heat dissipation condition | 6 | A |
| Drain Current (Pulse) | I _{DP} | PW≤10μs, duty cycle≤1% | 28 | 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} | | 292 | mJ |
| Avalanche Current ^{*4} | I _{AV} | | 7 | A |

^{*1} Shows chip capability

^{*2} Package limited

^{*3} V_{DD}=99V, L=10mH, I_{AV}=7A

^{*4} L≤10mH, single pulse

Marking : K4098

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SANYO Semiconductor Co., Ltd.

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2SK4098LS

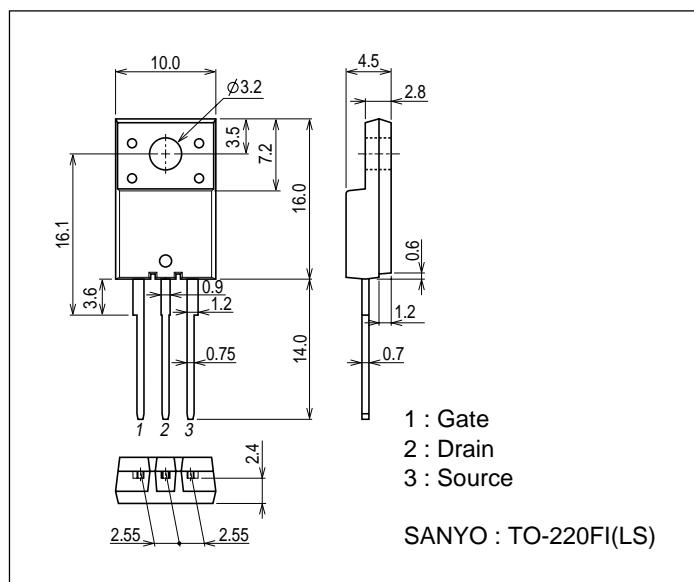
Electrical Characteristics at $T_a=25^\circ\text{C}$

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|--------------------------|--|---------|-----|-----------|----------|
| | | | min | typ | max | |
| Drain-to-Source Breakdown Voltage | $V(\text{BR})\text{DSS}$ | $I_D=10\text{mA}, V_{GS}=0\text{V}$ | 600 | | | V |
| Zero-Gate Voltage Drain Current | I_{DSS} | $V_{DS}=480\text{V}, V_{GS}=0\text{V}$ | | | 1.0 | mA |
| Gate-to-Source Leakage Current | I_{GSS} | $V_{GS}=\pm 30\text{V}, V_{DS}=0\text{V}$ | | | ± 100 | nA |
| Cutoff Voltage | $V_{GS(\text{off})}$ | $V_{DS}=10\text{V}, I_D=1\text{mA}$ | 3 | | 5 | V |
| Forward Transfer Admittance | $ y_{\text{fs}} $ | $V_{DS}=10\text{V}, I_D=3.5\text{A}$ | 2.1 | 4.2 | | S |
| Static Drain-to-Source On-State Resistance | $R_{\text{DS(on)}}$ | $I_D=3.5\text{A}, V_{GS}=10\text{V}$ | | 0.9 | 1.1 | Ω |
| Input Capacitance | C_{iss} | $V_{DS}=30\text{V}, f=1\text{MHz}$ | 600 | | | pF |
| Output Capacitance | C_{oss} | $V_{DS}=30\text{V}, f=1\text{MHz}$ | 120 | | | pF |
| Reverse Transfer Capacitance | C_{rss} | $V_{DS}=30\text{V}, f=1\text{MHz}$ | 25 | | | pF |
| Turn-ON Delay Time | $t_{\text{d(on)}}$ | See specified Test Circuit. | | 17 | | ns |
| Rise Time | t_r | See specified Test Circuit. | | 34 | | ns |
| Turn-OFF Delay Time | $t_{\text{d(off)}}$ | See specified Test Circuit. | | 80 | | ns |
| Fall Time | t_f | See specified Test Circuit. | | 30 | | ns |
| Total Gate Charge | Q_g | $V_{DS}=200\text{V}, V_{GS}=10\text{V}, I_D=7\text{A}$ | 23.5 | | | nC |
| Gate-to-Source Charge | Q_{gs} | $V_{DS}=200\text{V}, V_{GS}=10\text{V}, I_D=7\text{A}$ | 4.5 | | | nC |
| Gate-to-Drain "Miller" Charge | Q_{gd} | $V_{DS}=200\text{V}, V_{GS}=10\text{V}, I_D=7\text{A}$ | 13.5 | | | nC |
| Diode Forward Voltage | V_{SD} | $I_S=7\text{A}, V_{GS}=0\text{V}$ | 0.9 | 1.2 | | V |

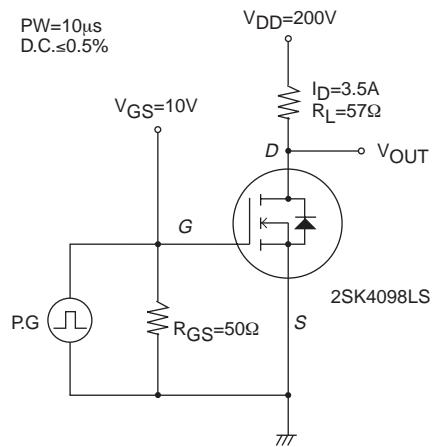
Package Dimensions

unit : mm (typ)

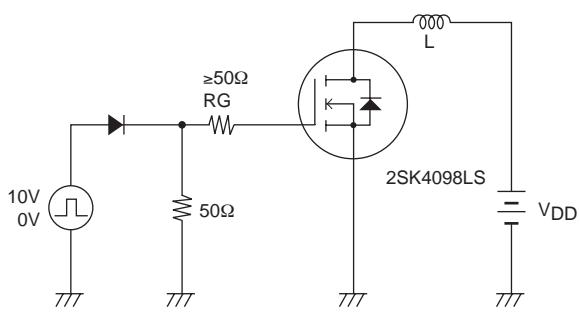
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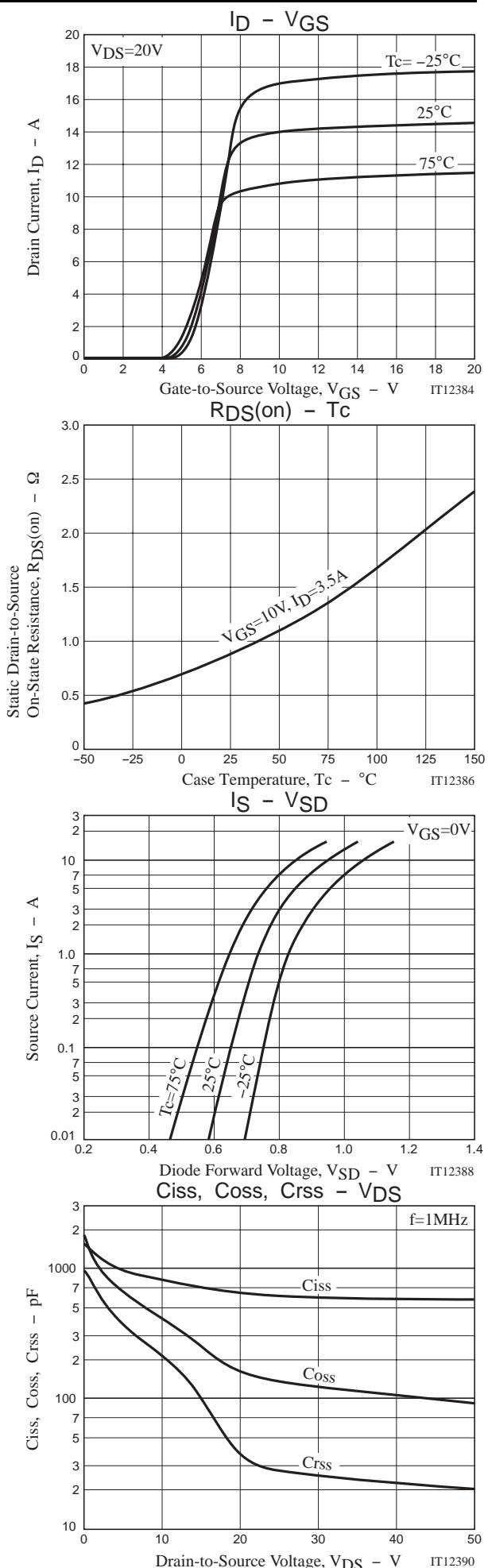
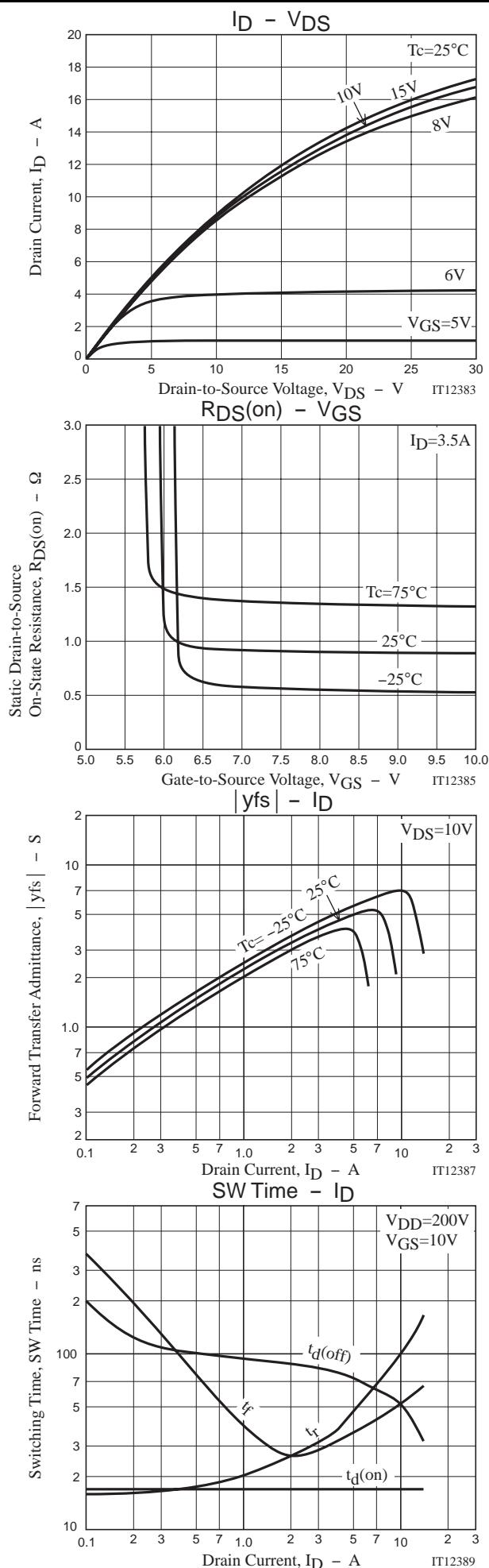
Switching Time Test Circuit



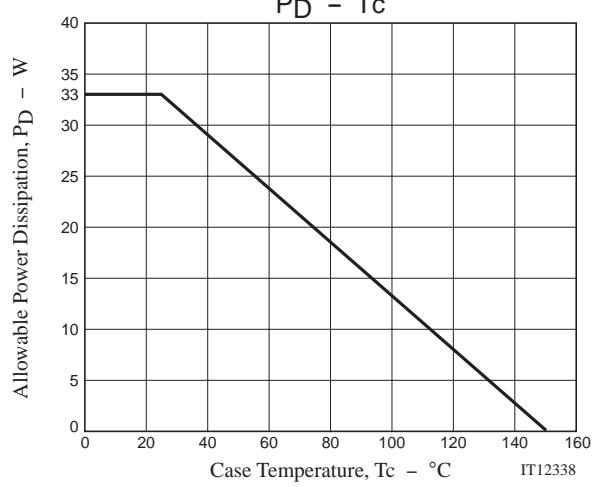
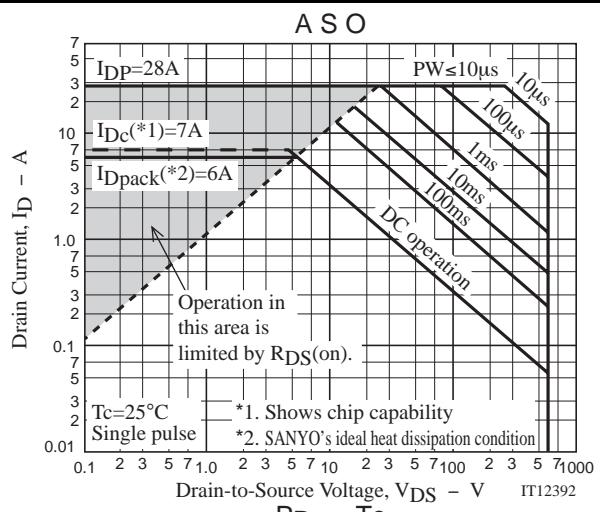
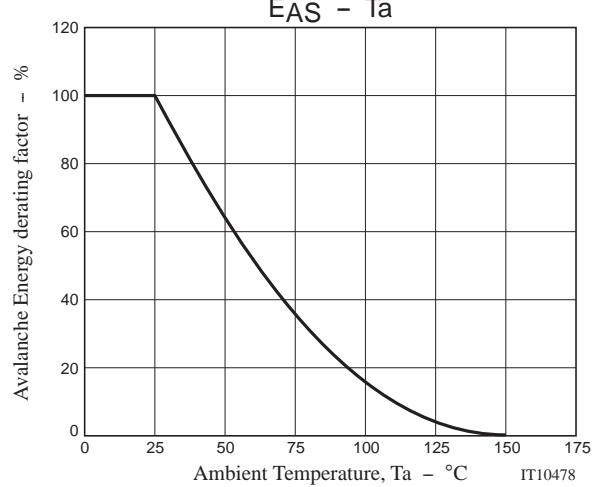
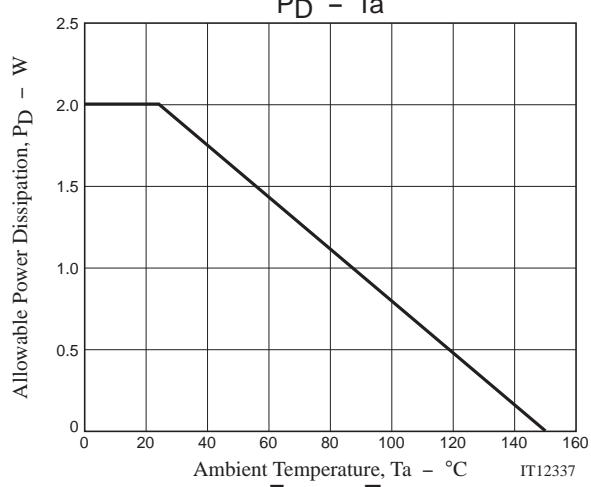
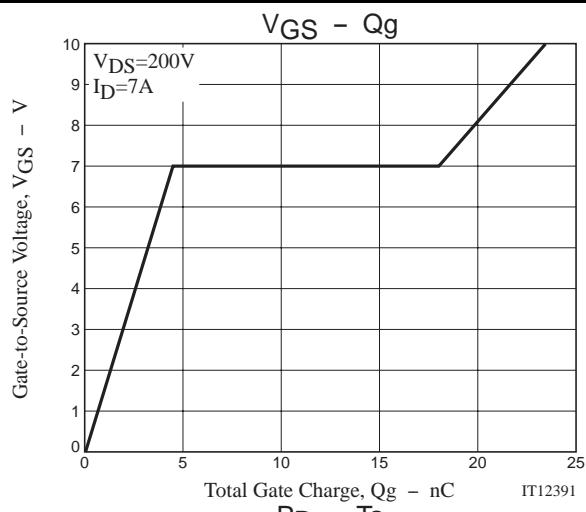
Avalanche Resistance Test Circuit



2SK4098LS



2SK4098LS



Note on usage : Since the 2SK4098LS is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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