

**2SK1921**

Ultrahigh-Speed Switching Applications

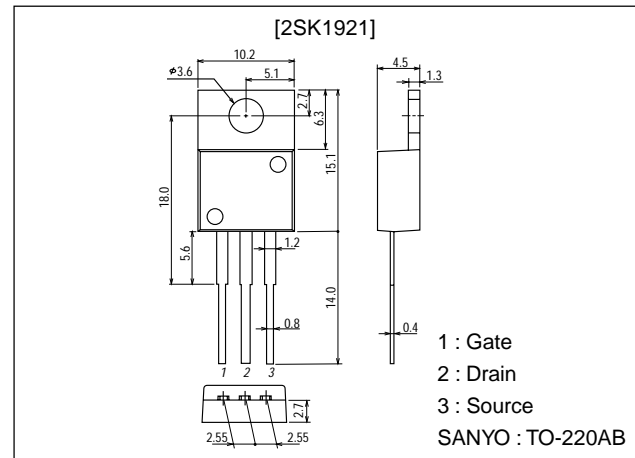
Features

- Low ON resistance.
- Ultrahigh-speed switching.
- Low-voltage drive.

Package Dimensions

unit:mm

2052C



Specifications

Absolute Maximum Ratings at Ta = 25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|-----------|--|-------------|------|
| Drain-to-Source Voltage | V_{DS} | | 250 | V |
| Gate-to-Source Voltage | V_{GS} | | ±30 | V |
| Drain Current (DC) | I_D | | 4 | A |
| Drain Current (pulse) | I_{DP} | $PW \leq 10 \mu s$, duty cycle $\leq 1\%$ | 16 | A |
| Allowable Power Dissipation | P_D | | 1.75 | W |
| | | $T_c = 25^\circ C$ | 50 | 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 | $V_{(BR)DSS}$ | $I_D = 1mA$, $V_{GS} = 0$ | 250 | | | V |
| Gate-to-Source Breakdown Voltage | $V_{(BR)GSS}$ | $I_G = \pm 100 \mu A$, $V_{DS} = 0$ | ±30 | | | V |
| Zero-Gate Voltage Drain Current | I_{DSS} | $V_{DS} = 250V$, $V_{GS} = 0$ | | | 100 | μA |
| Gate-to-Source Leakage Current | I_{GSS} | $V_{GS} = \pm 25V$, $V_{DS} = 0$ | | | ±10 | μA |
| Cutoff Voltage | $V_{GS(off)}$ | $V_{DS} = 10V$, $I_D = 1mA$ | 1.5 | | 2.5 | V |
| Forward Transfer Admittance | $ y_{fs} $ | $V_{DS} = 10V$, $I_D = 2A$ | 2.5 | 4 | | S |
| Static Drain-to-Source On-State Resistance | $R_{DS(on)}$ | $I_D = 2A$, $V_{GS} = 10V$ | | 0.5 | 0.7 | Ω |

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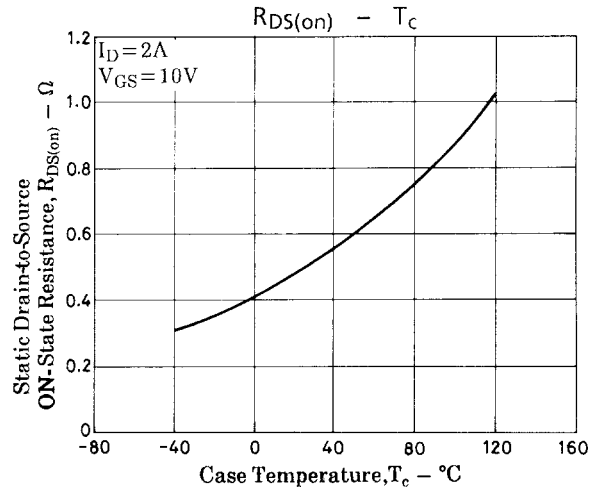
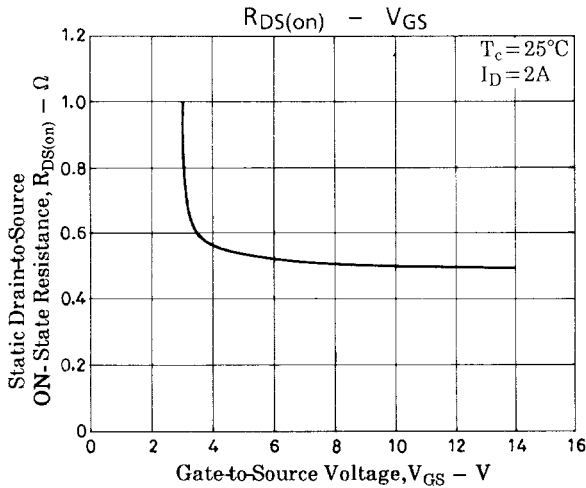
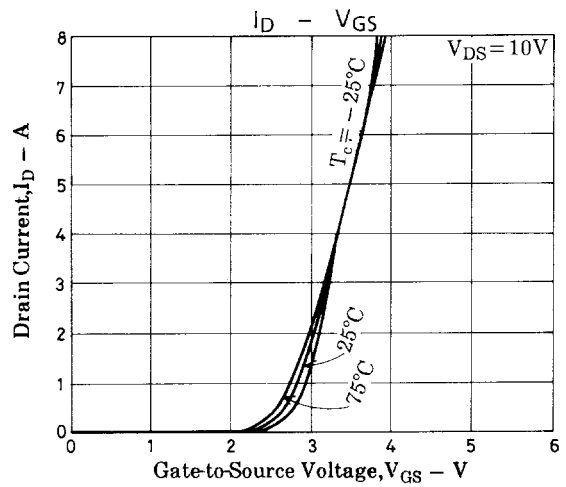
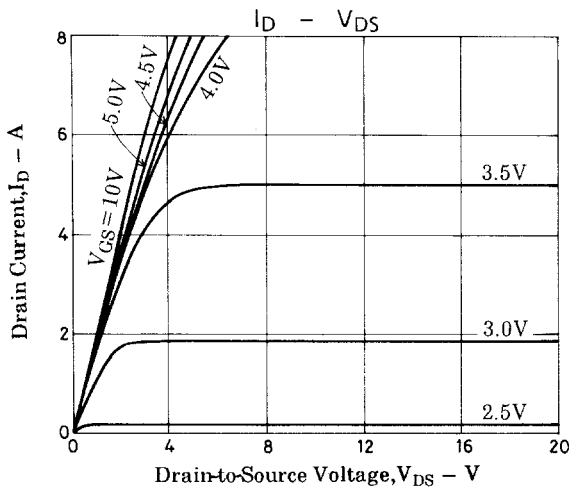
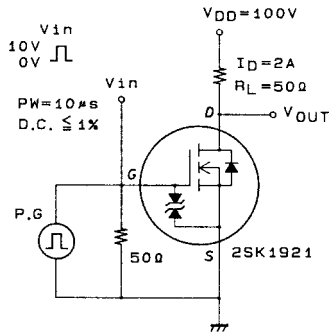
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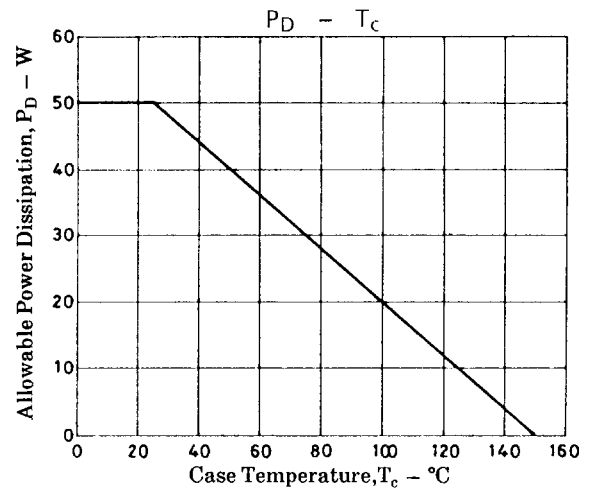
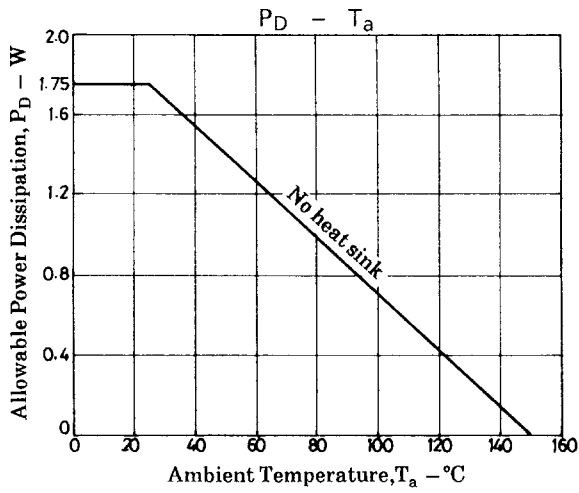
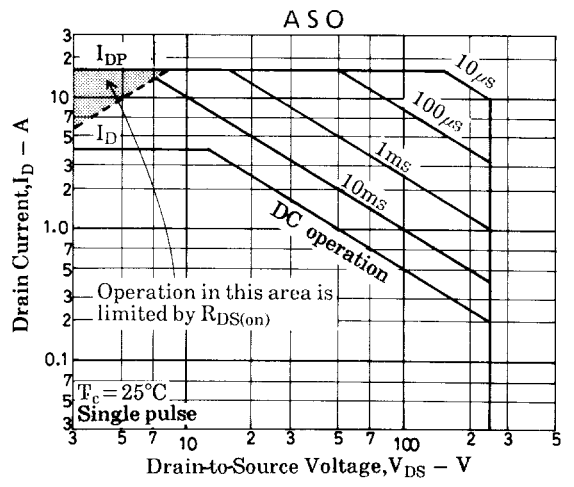
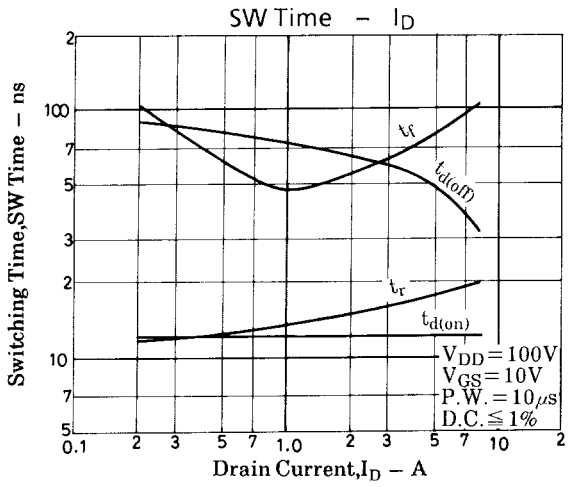
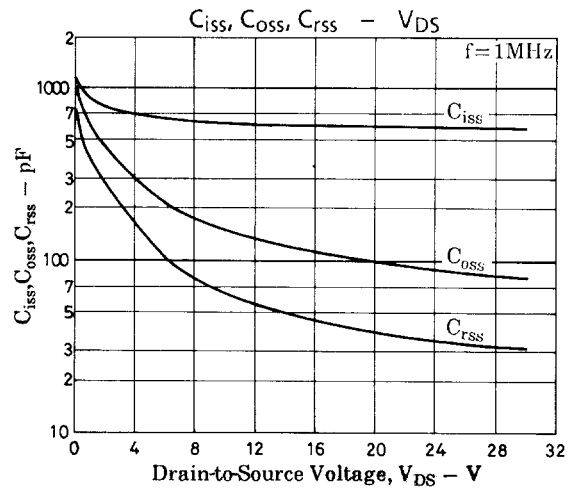
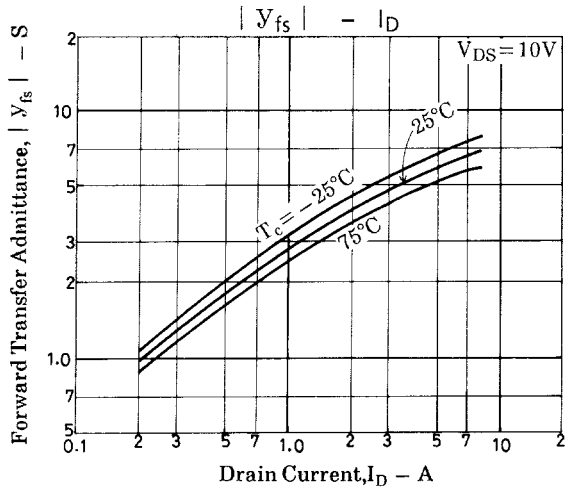
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| Parameter | Symbol | Conditions | Ratings | | Unit |
|------------------------------|--------------|-----------------------------|---------|-----|------|
| Input Capacitance | Ciss | $V_{DS}=20V, f=1MHz$ | 600 | | pF |
| Output Capacitance | Coss | $V_{DS}=20V, f=1MHz$ | 100 | | pF |
| Reverse Transfer Capacitance | Crss | $V_{DS}=20V, f=1MHz$ | 40 | | pF |
| Turn-ON Delay Time | $t_{d(on)}$ | See specified Test Circuit. | 12 | | ns |
| Rise Time | t_r | See specified Test Circuit. | 15 | | ns |
| Turn-OFF Delay Time | $t_{d(off)}$ | See specified Test Circuit. | 65 | | ns |
| Fall Time | t_f | See specified Test Circuit. | 55 | | ns |
| Diode Forward Voltage | V_{SD} | $I_S=4A, V_{GS}=0$ | 1.0 | 1.5 | V |

Switching Time Test Circuit



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