

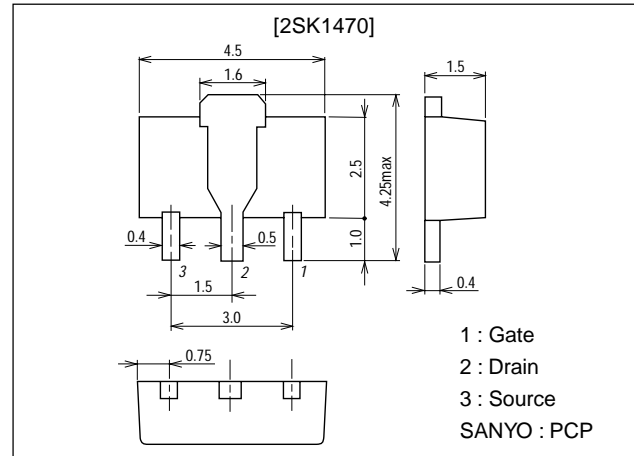
**2SK1470****Ultrahigh-Speed Switching Applications****Features**

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

**Package Dimensions**

unit:mm

2062A

**Specifications****Absolute Maximum Ratings at Ta = 25°C**

| Parameter                   | Symbol    | Conditions   | Ratings     | Unit |
|-----------------------------|-----------|--|-------------|------|
| Drain-to-Source Voltage     | $V_{DSS}$ |  | 60          | V    |
| Gate-to-Source Voltage      | $V_{GSS}$ |  | ±15         | V    |
| Drain Current (DC)          | $I_D$     |  | 2           | A    |
| Drain Current (pulse)       | $I_{DP}$  | $PW \leq 10\mu s$ , duty cycle $\leq 1\%$              | 8           | A    |
| Allowable Power Dissipation | $P_D$     | $T_c = 25^\circ C$                                     | 3.5         | W    |
|                             |           | Mounted on a ceramic board (250mm <sup>2</sup> ×0.8mm) | 1.5         | 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          | $V_{(BR)DSS}$   | $I_D = 1mA$ , $V_{GS} = 0$        | 60      |      |      | V    |
| Zero-Gate Voltage Drain Current            | $I_{DSS}$       | $V_{DS} = 60V$ , $V_{GS} = 0$     |         |      | 100  | μA   |
| Gate-to-Source Leakage Current             | $I_{GSS}$       | $V_{GS} = \pm 12V$ , $V_{DS} = 0$ |         |      | ±10  | μA   |
| Cutoff Voltage                             | $V_{GS(off)}$   | $V_{DS} = 10V$ , $I_D = 1mA$      | 1.0     |      | 2.0  | V    |
| Forward Transfer Admittance                | y <sub>fs</sub> | $V_{DS} = 10V$ , $I_D = 1A$       | 1.2     | 2.0  |      | S    |
| Static Drain-to-Source On-State Resistance | $R_{DS(on)1}$   | $I_D = 1A$ , $V_{GS} = 10V$       |         | 0.35 | 0.45 | Ω    |
|  | $R_{DS(on)2}$   | $I_D = 1A$ , $V_{GS} = 4V$        |         | 0.45 | 0.6  | Ω    |

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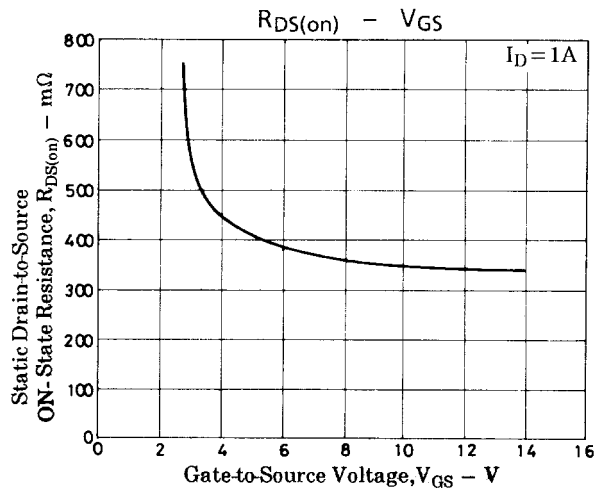
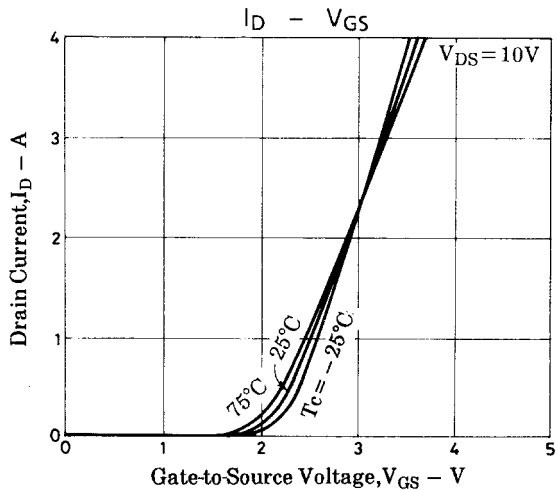
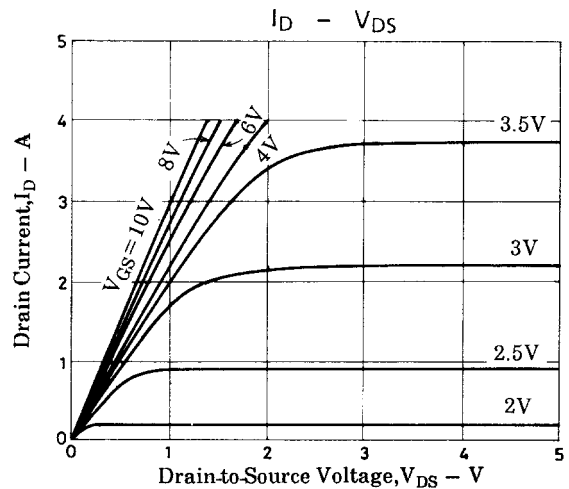
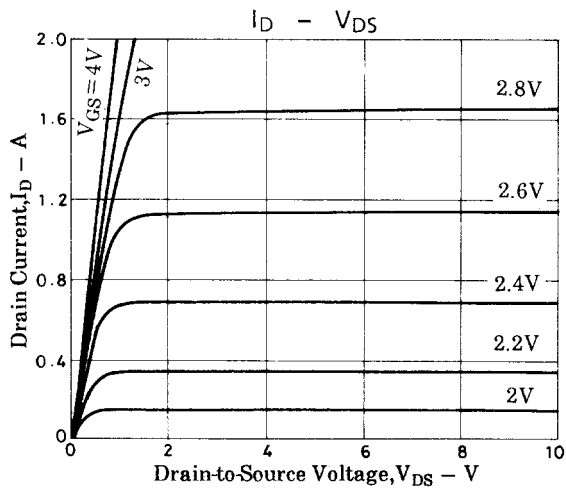
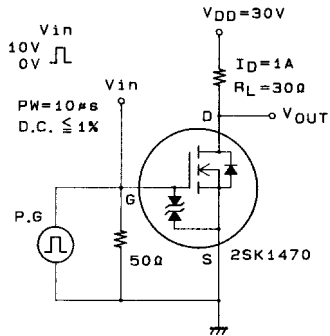
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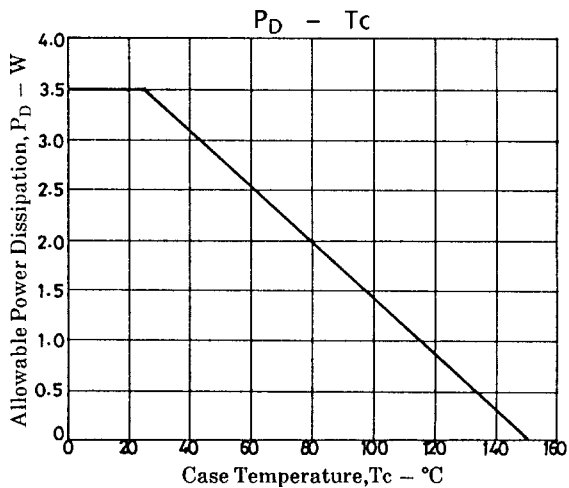
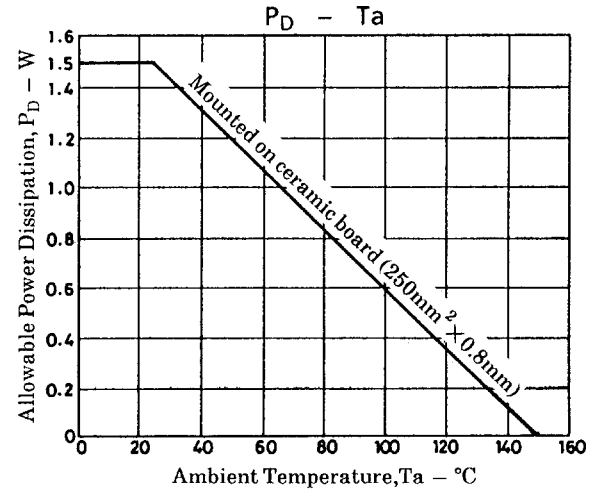
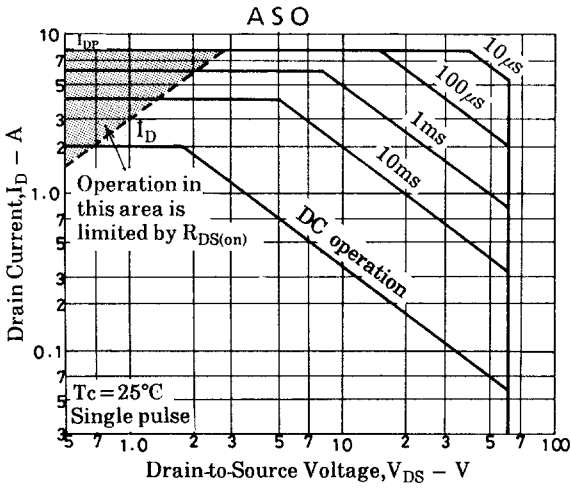
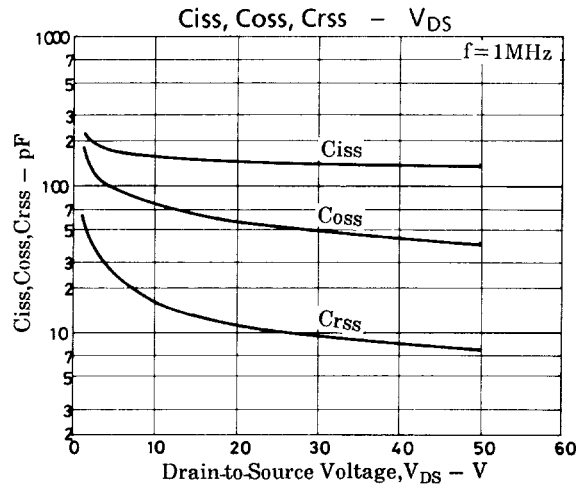
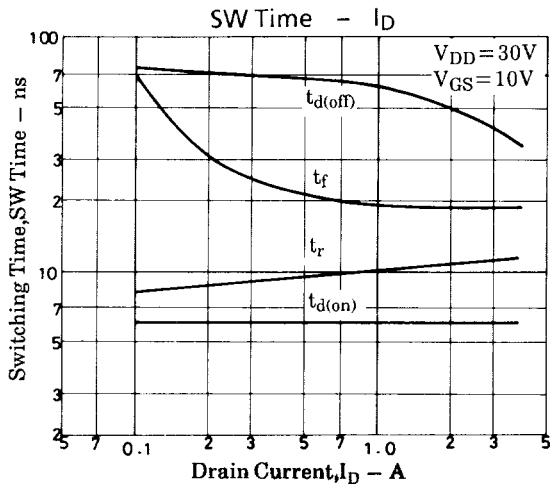
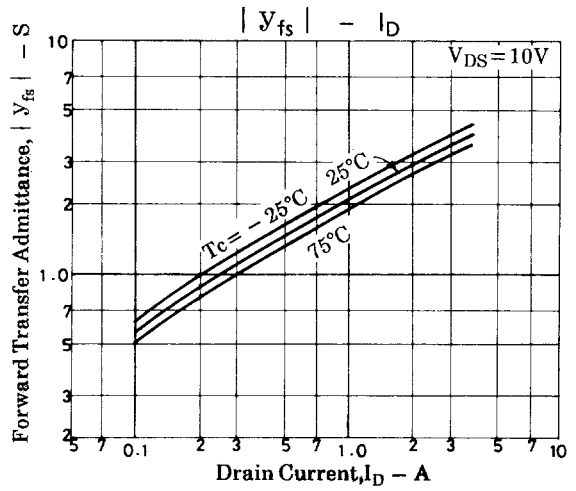
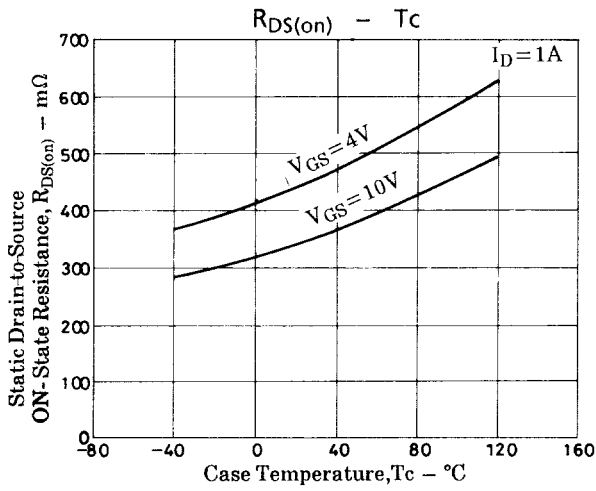
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| Parameter                    | Symbol       | Conditions                 | Ratings | Unit |
|------------------------------|--------------|----------------------------|---------|------|
| Input Capacitance            | Ciss         | $V_{DS}=20V, f=1MHz$       | 150     | pF   |
| Output Capacitance           | Coss         | $V_{DS}=20V, f=1MHz$       | 60      | pF   |
| Reverse Transfer Capacitance | Crss         | $V_{DS}=20V, f=1MHz$       | 12      | pF   |
| Turn-ON Delay Time           | $t_{d(on)}$  | See specified Test Circuit | 6       | ns   |
| Rise Time                    | $t_r$        | See specified Test Circuit | 10      | ns   |
| Turn-OFF Delay Time          | $t_{d(off)}$ | See specified Test Circuit | 60      | ns   |
| Fall Time                    | $t_f$        | See specified Test Circuit | 20      | ns   |
| Diode Forward Voltage        | $V_{SD}$     | $I_S=2A, V_{GS}=0$         | 1.0     | V    |

## Switching Time Test Circuit



# 2SK1470



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