

N-Channel Silicon MOSFET

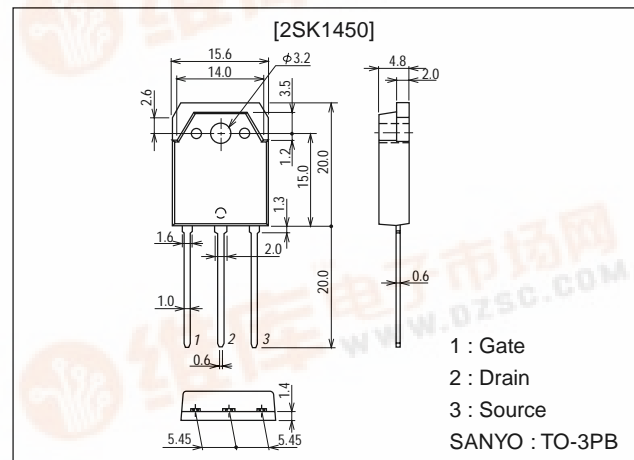
SANYO**2SK1450****Ultrahigh-Speed Switching Applications****Features**

- Low ON-state resistance.
- Ultrahigh-speed switching, converters.

Package Dimensions

unit:mm

2056A

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

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|-----------|---|-------------|------------|
| Drain-to-Source Voltage | V_{DS} | | 450 | V |
| Gate-to-Source Voltage | V_{GS} | | ± 30 | V |
| Drain Current (DC) | I_D | | 20 | A |
| Drain Current (Pulse) | I_{DP} | $PW \leq 10\mu s$, duty cycle $\leq 1\%$ | 80 | A |
| Allowable Power Dissipation | P_D | $T_c = 25^\circ C$ | 150 | W |
| | | | 2.5 | W |
| Channel Temperature | T_{ch} | | 150 | $^\circ C$ |
| Storage Temperature | T_{stg} | | -55 to +150 | $^\circ C$ |

Electrical Characteristics at Ta = 25°C

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|---------------|-----------------------------------|---------|-----|-----------|----------|
| | | | min | typ | max | |
| Drain-to-Source Breakdown Voltage | $V_{(BR)DSS}$ | $I_D = 1mA$, $V_{GS} = 0$ | 450 | | | V |
| Zero-Gate Voltage Drain Current | I_{DSS} | $V_{DS} = 450V$, $V_{GS} = 0$ | | | 1.0 | mA |
| Gate-to-Source Leakage Current | I_{GSS} | $V_{GS} = \pm 30V$, $V_{DS} = 0$ | | | ± 100 | nA |
| Cutoff Voltage | $V_{GS(off)}$ | $V_{DS} = 10V$, $I_D = 1mA$ | 2.0 | | 3.0 | V |
| Forward Transfer Admittance | $ y_{fs} $ | $V_{DS} = 10V$, $I_D = 10A$ | 7.5 | 15 | | S |
| Static Drain-to-Source ON-State Resistance | $R_{DS(on)}$ | $I_D = 10A$, $V_{GS} = 10V$ | 0.24 | 0.3 | | Ω |

(Note) Be careful in handling the 2SK1450 because it has no protection diode between gate and source.

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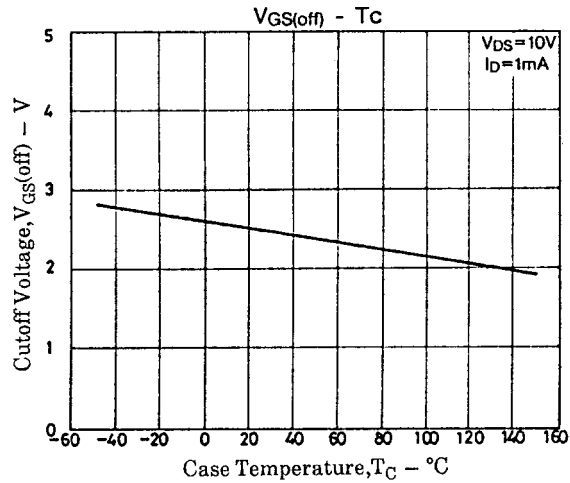
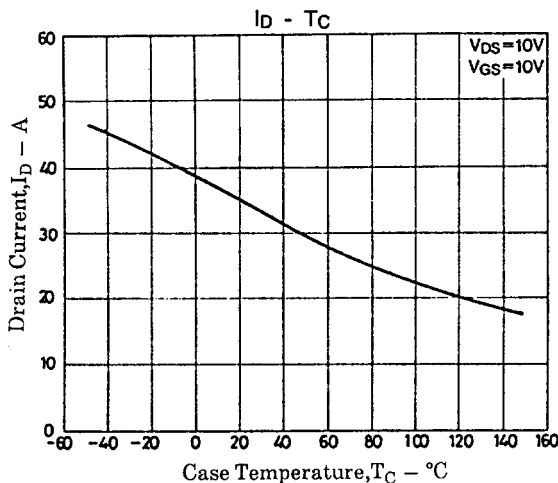
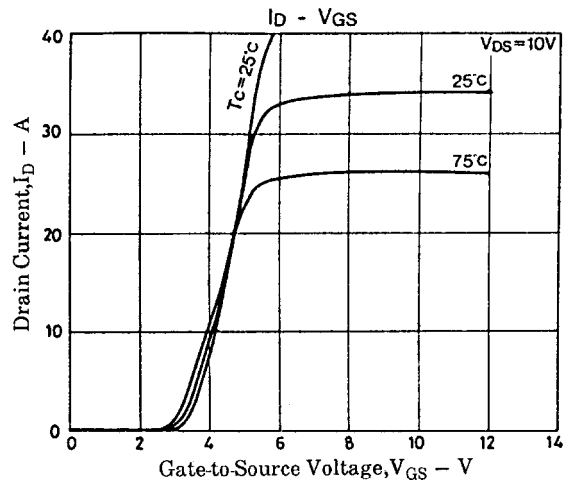
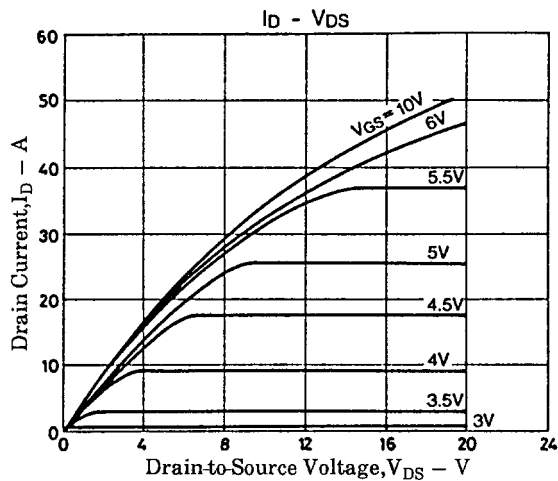
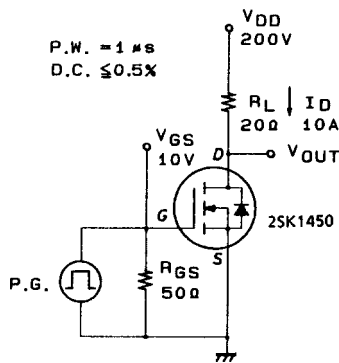
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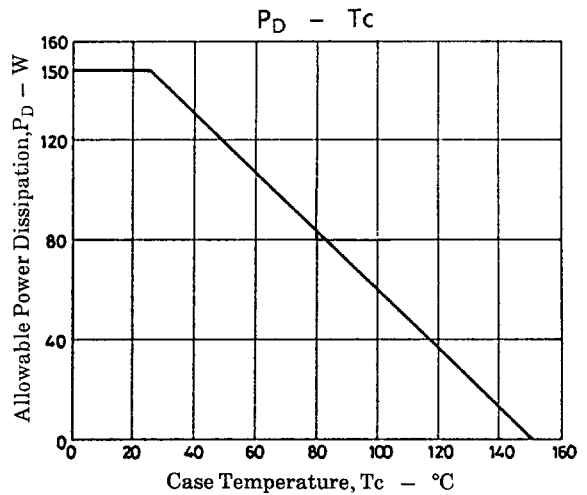
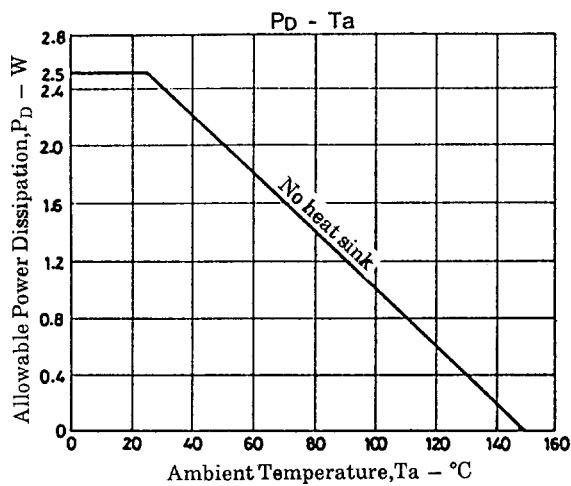
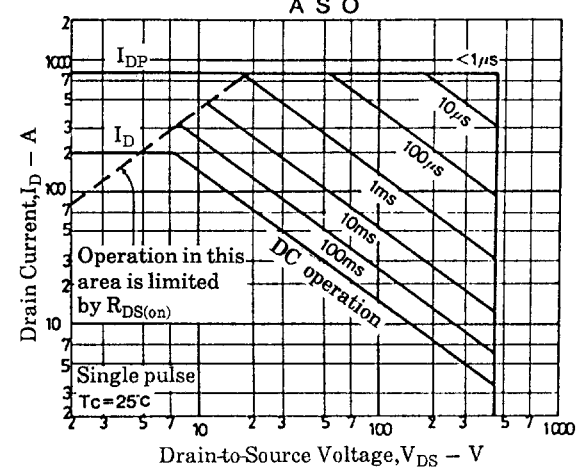
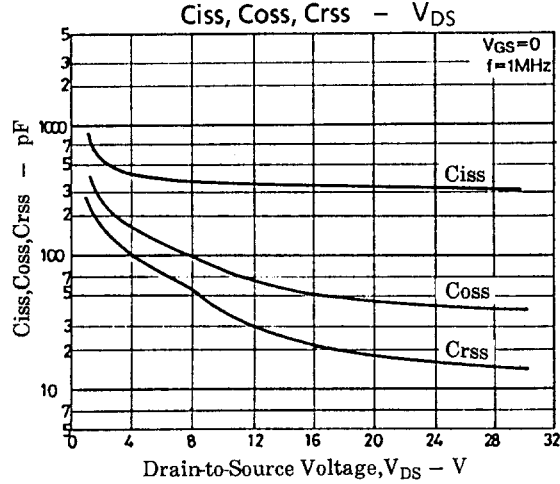
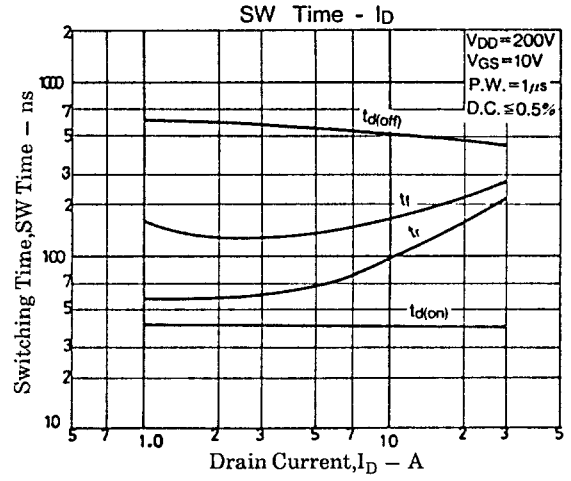
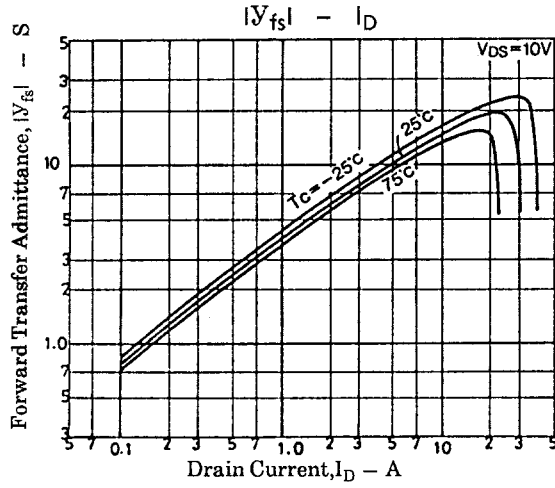
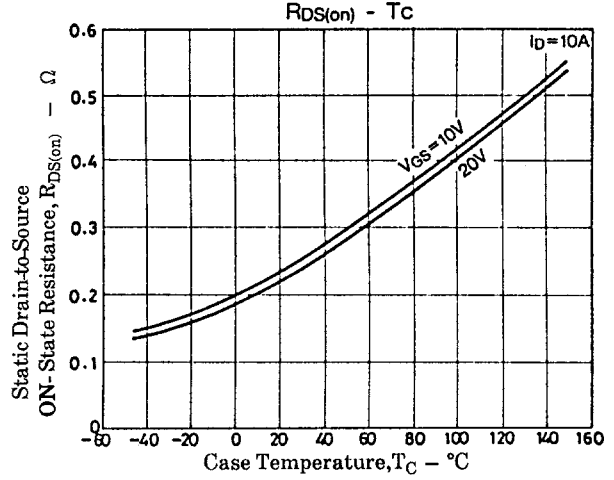
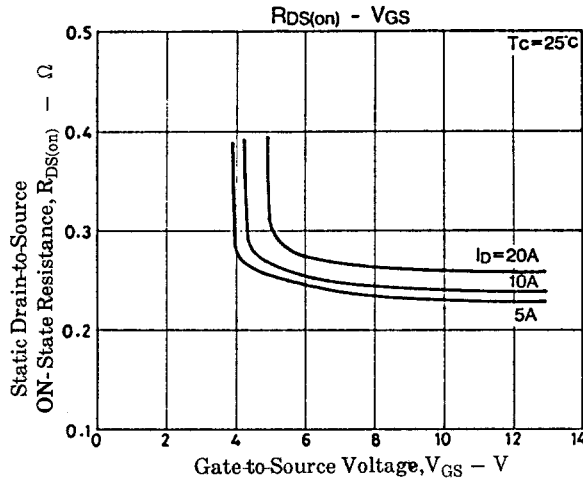
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| Parameter | Symbol | Conditions | Ratings | | | Unit |
|------------------------------|---------------------|--|---------|------|-----|------|
| | | | min | typ | max | |
| Input Capacitance | Ciss | V _{DS} =20V, f=1MHz | | 3200 | | pF |
| Output Capacitance | Coss | V _{DS} =20V, f=1MHz | | 440 | | pF |
| Reverse Transfer Capacitance | Crss | V _{DS} =20V, f=1MHz | | 160 | | pF |
| Turn-ON Delay Time | t _{d(on)} | I _D =10A, V _{GS} =10V, V _{DD} =200V, R _{GS} =50Ω | | 40 | | ns |
| Rise Time | t _r | I _D =10A, V _{GS} =10V, V _{DD} =200V, R _{GS} =50Ω | | 100 | | ns |
| Turn-OFF Delay Time | t _{d(off)} | I _D =10A, V _{GS} =10V, V _{DD} =200V, R _{GS} =50Ω | | 450 | | ns |
| Fall Time | t _f | I _D =10A, V _{GS} =10V, V _{DD} =200V, R _{GS} =50Ω | | 150 | | ns |
| Diode Forward Voltage | V _{SD} | I _S =20A, V _{GS} =0 | | | 1.8 | V |

Switching Time Test Circuit



2SK1450



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