

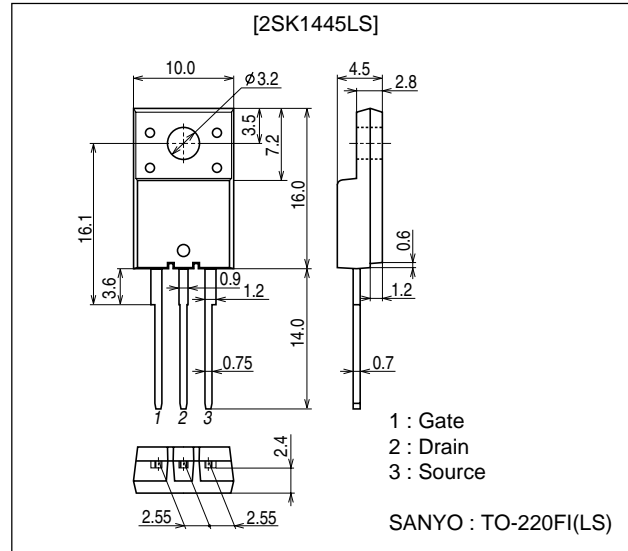
Ultrahigh-Speed Switching Applications

Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- Micaless package facilitating mounting.

Package Dimensions

unit : mm
2078C



Specifications

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|-----------|---|-------------|------------------|
| Drain-to-Source Voltage | V_{DSS} | | 450 | V |
| Gate-to-Source Voltage | V_{GSS} | | ± 30 | V |
| Drain Current (DC) | I_D | | 5 | A |
| Drain Current (Pulse) | I_{DP} | $PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$ | 20 | A |
| Allowable Power Dissipation | P_D | | 2.0 | W |
| | | $T_c=25^\circ\text{C}$ | 30 | W |
| Channel Temperature | T_{ch} | | 150 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | | -55 to +150 | $^\circ\text{C}$ |

Electrical Characteristics

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

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|-----------------------------------|---------------|--------------------------------------|---------|-----|-----------|------|
| | | | min | typ | max | |
| Drain-to-Source Breakdown Voltage | $V_{(BR)DSS}$ | $I_D=1\text{mA}$, $V_{GS}=0$ | 450 | | | V |
| Zero-Gate Voltage Drain Current | I_{DSS} | $V_{DS}=450\text{V}$, $V_{GS}=0$ | | | 1.0 | mA |
| Gate-to-Source Leakage Current | I_{GSS} | $V_{GS}=\pm 30\text{V}$, $V_{DS}=0$ | | | ± 100 | nA |

(Note) Be careful in handling the 2SK1445LS because it has no protection diode between gate and source.

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Marking : K1445

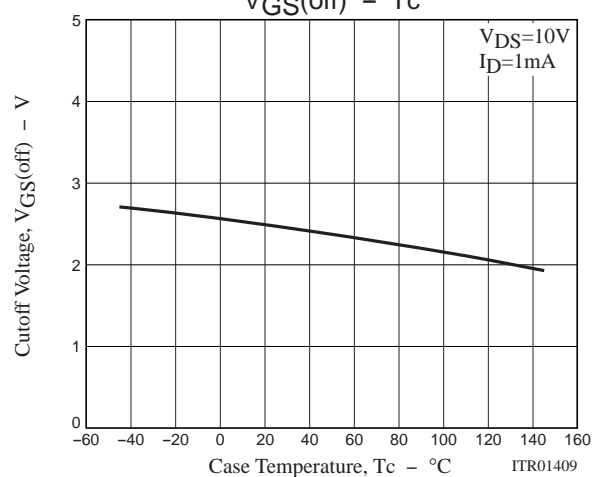
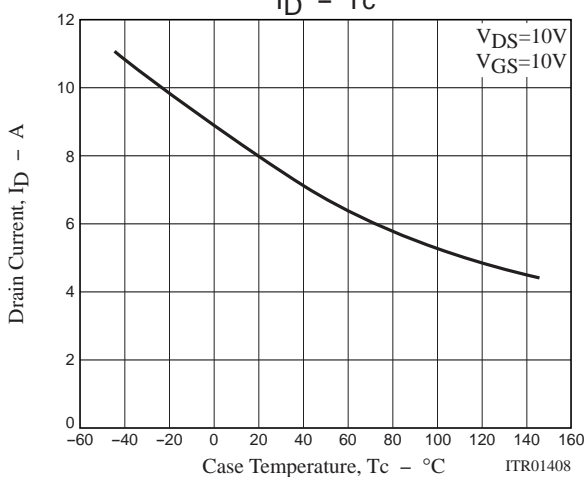
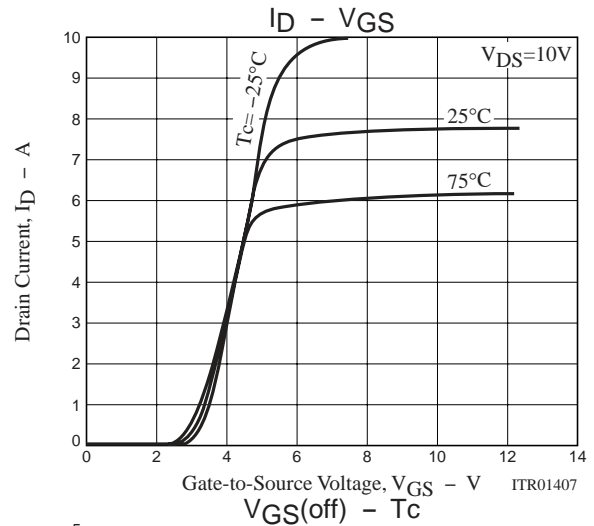
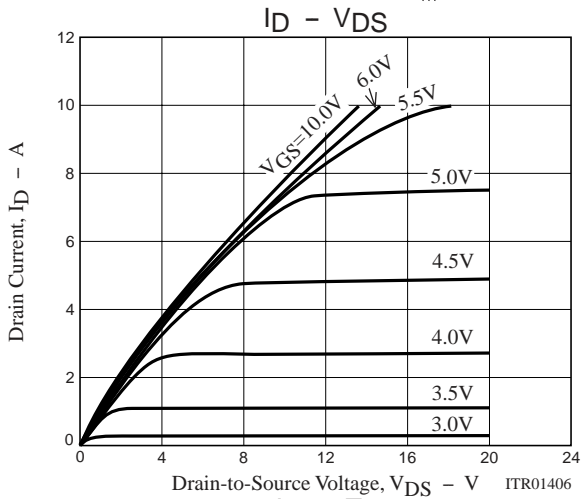
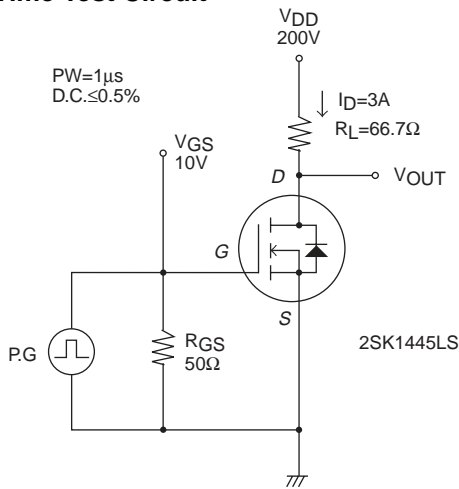
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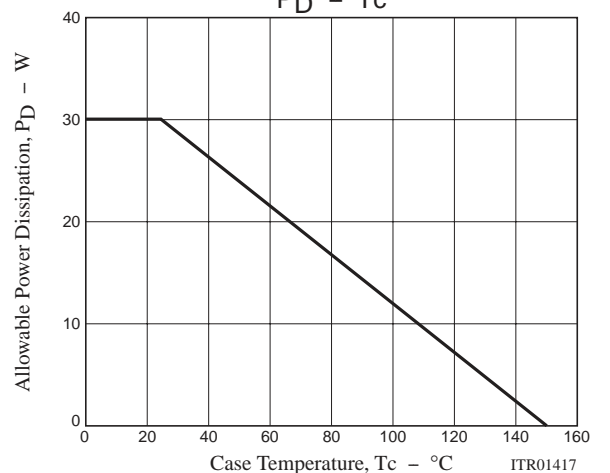
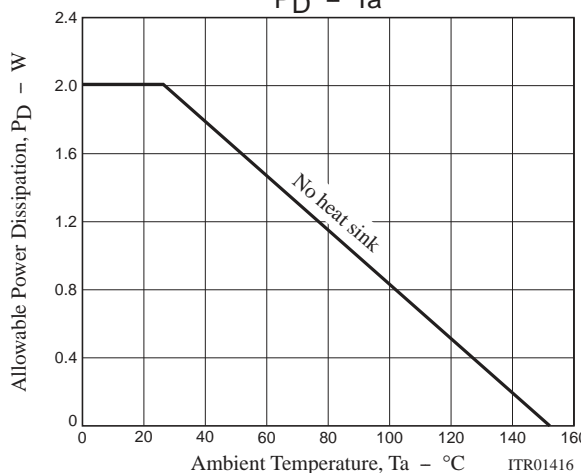
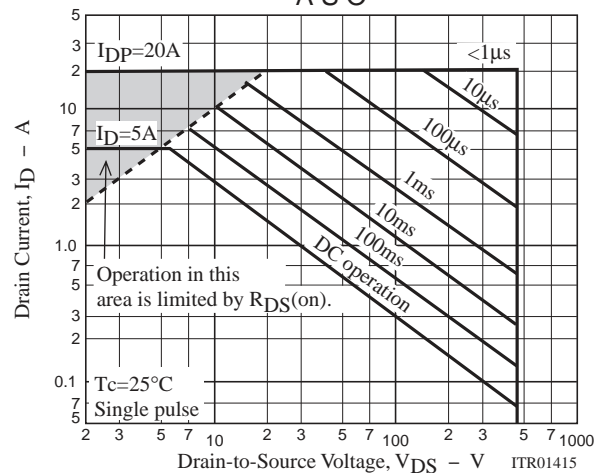
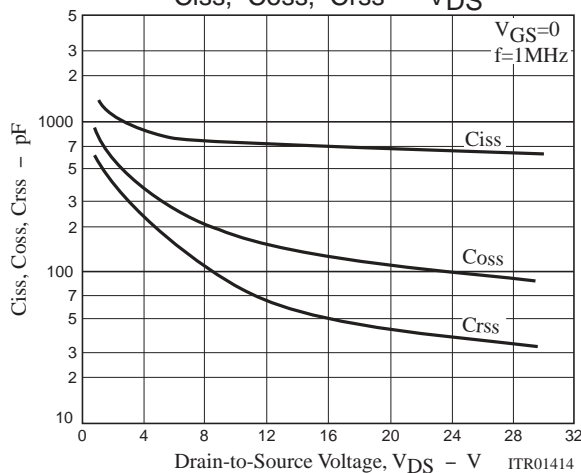
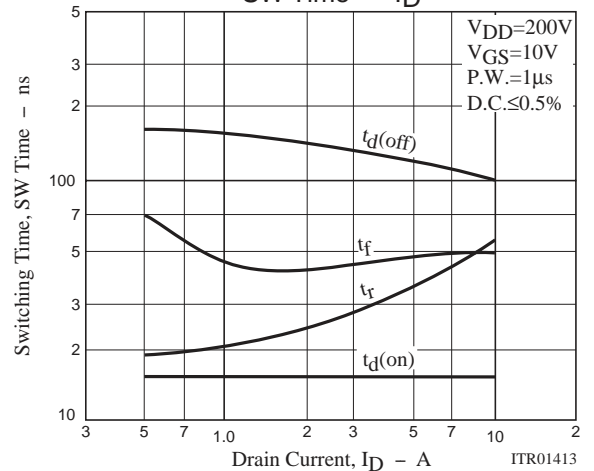
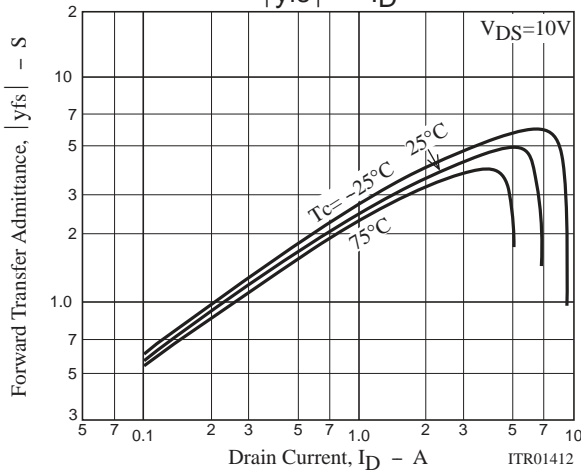
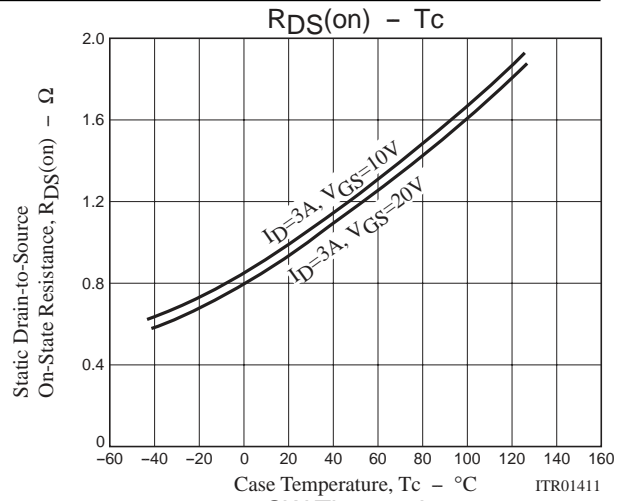
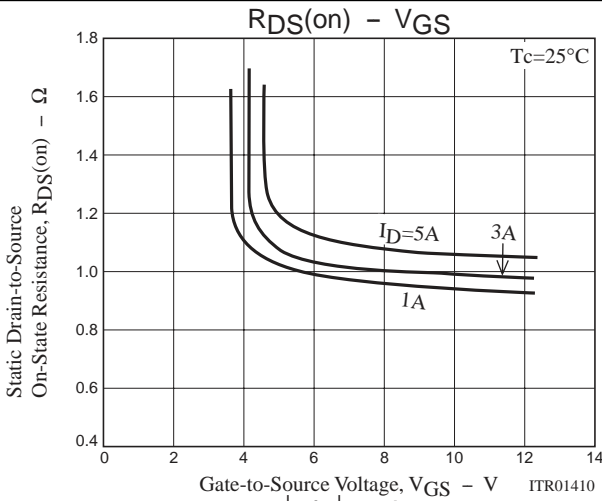
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| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|---------------|--|---------|-----|-----|----------|
| | | | min | typ | max | |
| Cutoff Voltage | $V_{GS(off)}$ | $V_{DS}=10V, I_D=1mA$ | 2.0 | | 3.0 | V |
| Forward Transfer Admittance | $ y_{fs} $ | $V_{DS}=10V, I_D=3A$ | 2.0 | 4.0 | | S |
| Static Drain-to-Source On-State Resistance | $R_{DS(on)}$ | $I_D=3A, V_{GS}=10V$ | | 1.0 | 1.4 | Ω |
| Input Capacitance | C_{iss} | $V_{DS}=20V, f=1MHz$ | | 700 | | pF |
| Output Capacitance | C_{oss} | $V_{DS}=20V, f=1MHz$ | | 100 | | pF |
| Reverse Transfer Capacitance | C_{rss} | $V_{DS}=20V, f=1MHz$ | | 40 | | pF |
| Turn-ON Delay Time | $t_d(on)$ | $I_D=3A, V_{GS}=10V, V_{DD}=200V, R_{GS}=50\Omega$ | | 15 | | ns |
| Rise Time | t_r | $I_D=3A, V_{GS}=10V, V_{DD}=200V, R_{GS}=50\Omega$ | | 30 | | ns |
| Turn-OFF Delay Time | $t_d(off)$ | $I_D=3A, V_{GS}=10V, V_{DD}=200V, R_{GS}=50\Omega$ | | 130 | | ns |
| Fall Time | t_f | $I_D=3A, V_{GS}=10V, V_{DD}=200V, R_{GS}=50\Omega$ | | 45 | | ns |
| Diode Forward Voltage | V_{SD} | $I_S=5A, V_{GS}=0$ | | | 1.8 | V |

Switching Time Test Circuit



2SK1445LS



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