

**2SJ231**

Ultrahigh-Speed Switching Applications

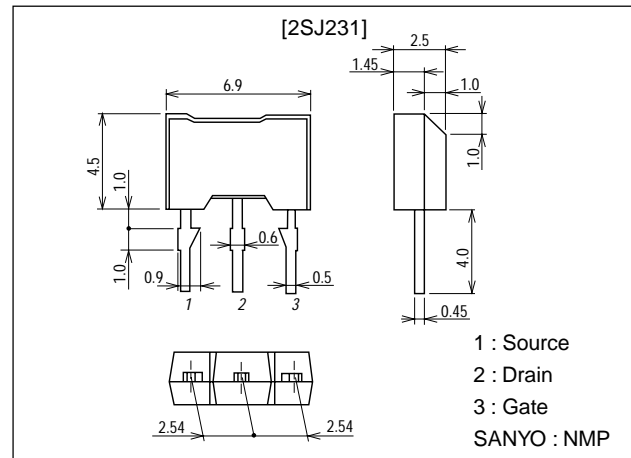
Features

- Low ON resistance.
- Ultrahigh-speed switching.
- Low-voltage drive.
- Meets radial taping.

Package Dimensions

unit:mm

2087A



Specifications

Absolute Maximum Ratings at Ta = 25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|-----------|---|-------------|------|
| Drain-to-Source Voltage | V_{DSS} | | -100 | V |
| Gate-to-Source Voltage | V_{GSS} | | ±15 | V |
| Drain Current (DC) | I_D | | -0.5 | A |
| Drain Current (Pulse) | I_{DP} | $PW \leq 10\mu s$, duty cycle $\leq 1\%$ | -2 | A |
| Allowable Power Dissipation | P_D | | 1 | 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 | $V_{(BR)DSS}$ | $I_D = -1mA$, $V_{GS} = 0$ | -100 | | | V |
| Zero-Gate Voltage Drain Current | I_{DSS} | $V_{DS} = -100V$, $V_{GS} = 0$ | | | -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_{fs} $ | $V_{DS} = -10V$, $I_D = -250mA$ | 400 | 700 | | mS |
| Static Drain-to-Source ON-State Resistance | $R_{DS(on)}$ | $I_D = -250mA$, $V_{GS} = -10V$ | | 1.8 | 2.4 | Ω |
| | $R_{DS(on)}$ | $I_D = -250mA$, $V_{GS} = -4V$ | | 2.4 | 3.5 | Ω |

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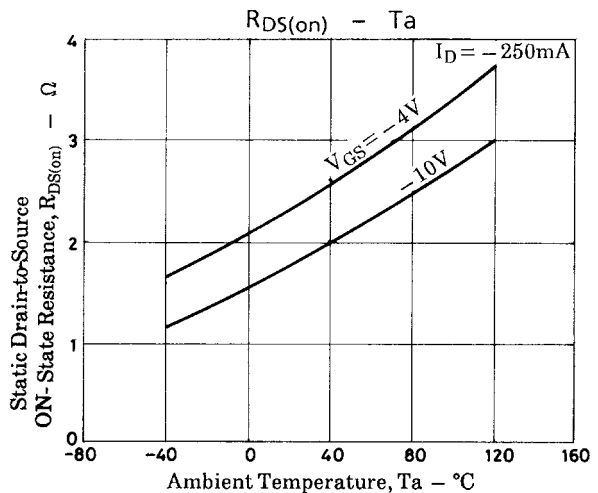
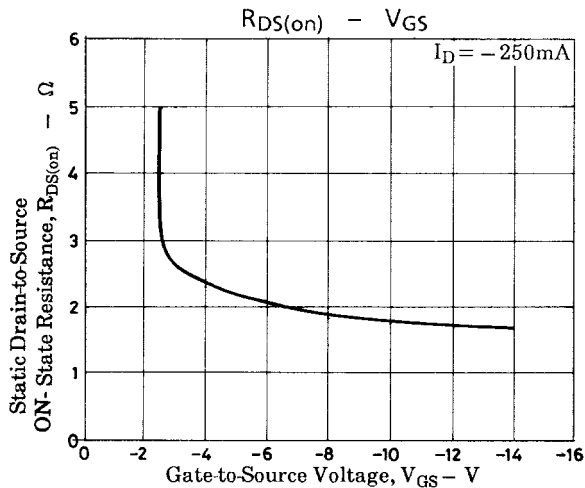
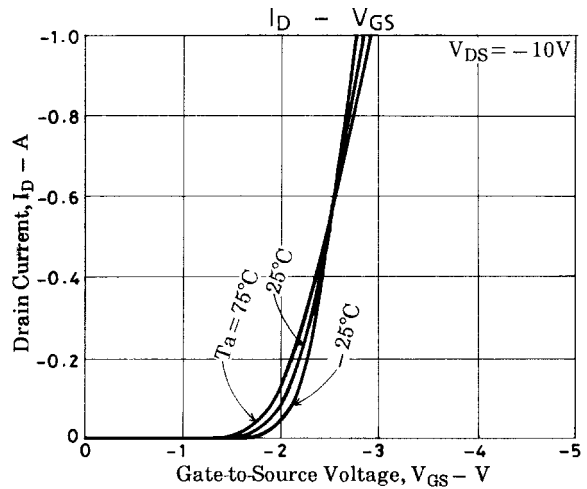
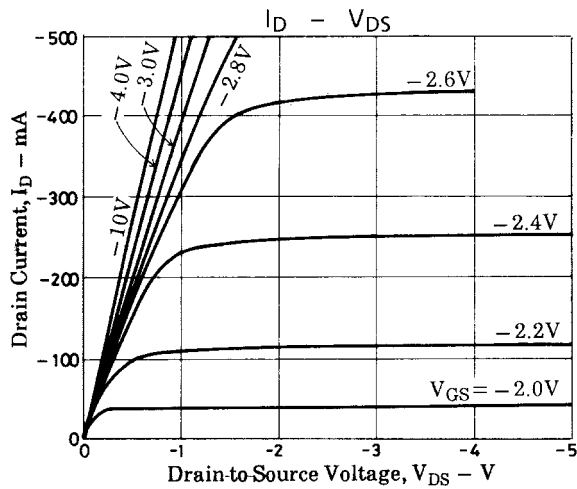
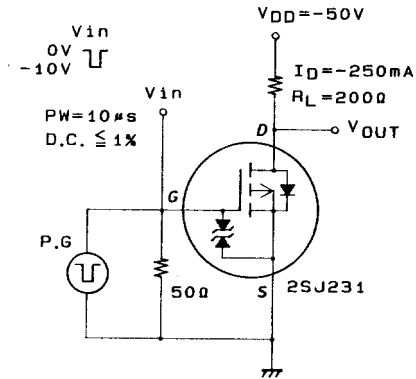
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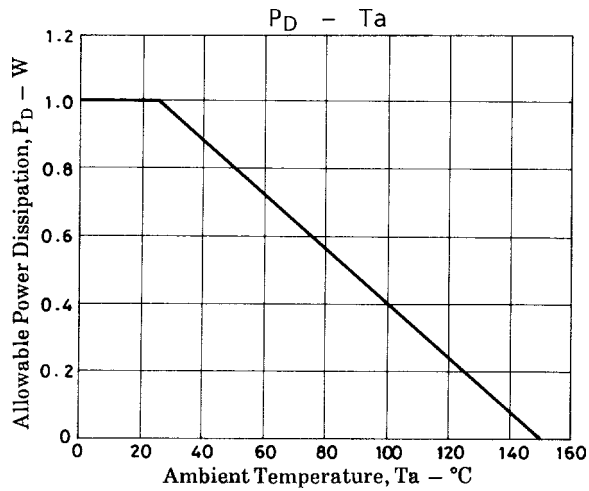
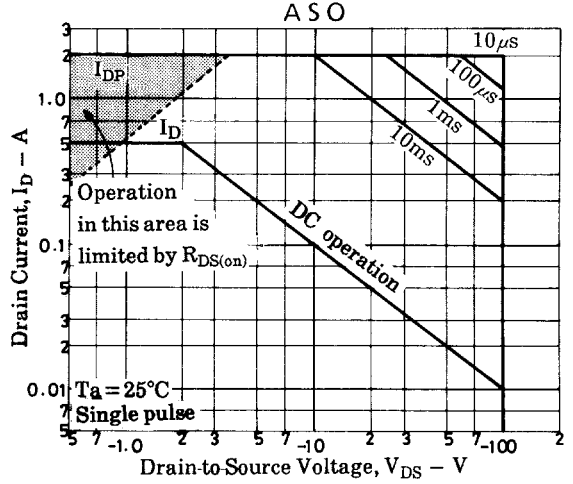
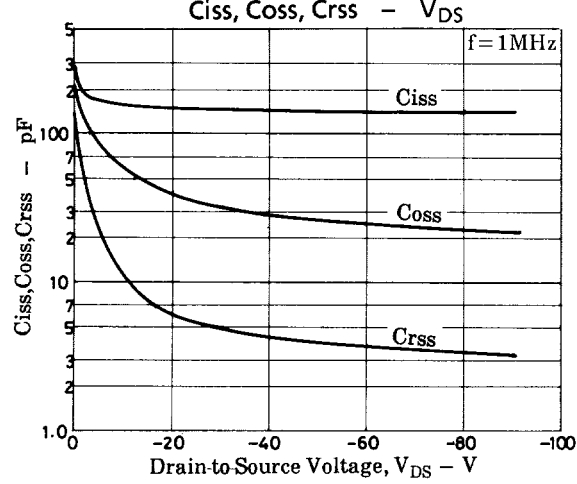
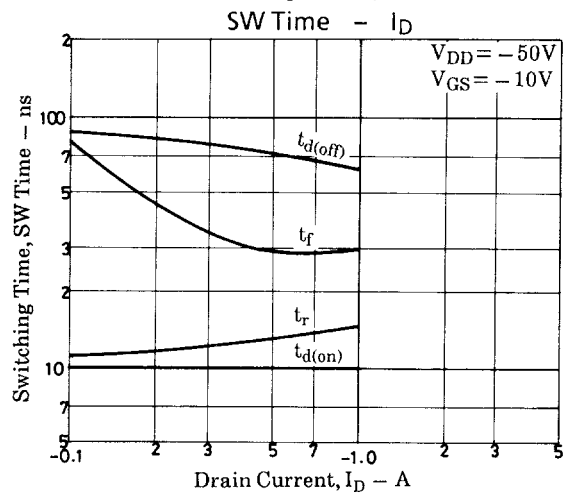
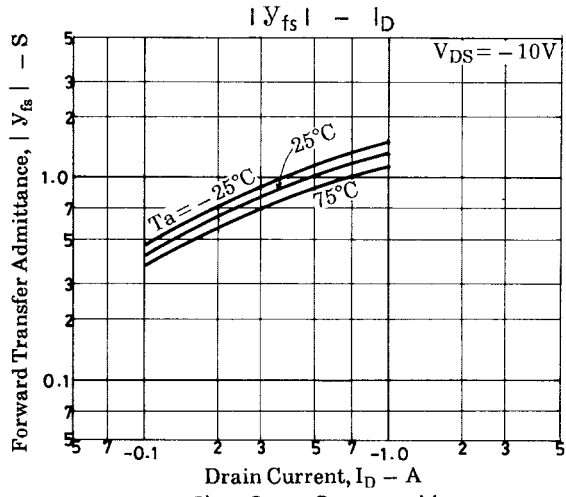
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| Parameter | Symbol | Conditions | Ratings | | | Unit |
|------------------------------|--------------|----------------------------|---------|------|-----|------|
| | | | min | typ | max | |
| Input Capacitance | C_{iss} | $V_{DS} = -20V, f = 1MHz$ | | 160 | | pF |
| Output Capacitance | C_{oss} | $V_{DS} = -20V, f = 1MHz$ | | 40 | | pF |
| Reverse Transfer Capacitance | C_{rss} | $V_{DS} = -20V, f = 1MHz$ | | 6 | | pF |
| Turn-ON Delay Time | $t_{d(on)}$ | See specified Test Circuit | | 10 | | ns |
| Rise Time | t_r | See specified Test Circuit | | 12 | | ns |
| Turn-OFF Delay Time | $t_{d(off)}$ | See specified Test Circuit | | 80 | | ns |
| Fall Time | t_f | See specified Test Circuit | | 40 | | ns |
| Diode Forward Voltage | V_{SD} | $I_S = -500mA, V_{GS} = 0$ | | -0.9 | | V |

Switching Time Test Circuit



2SJ231



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