



Ultrahigh-Speed Switching Applications

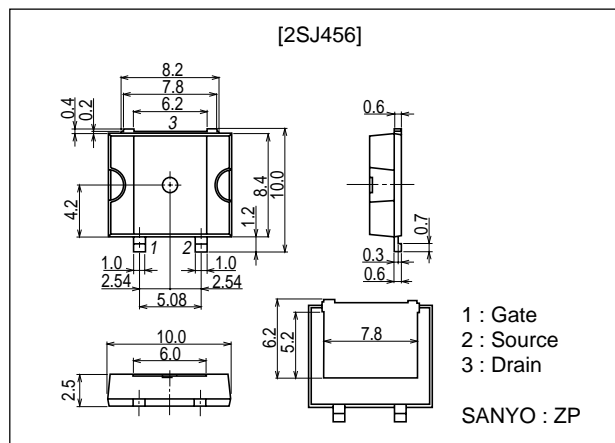
Features

- Low ON-resistance.
- High-speed diode incorporated.
- Enables simplified fabrication, high-density mounting, and miniaturization in end products due to the surface mountable package.

Package Dimensions

unit : mm

2128



Specifications

Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|------------------|------------------------|-------------|------|
| Drain-to-Source Voltage | V _{DSS} | | -250 | V |
| Gate-to-Source Voltage | V _{GSS} | | ±30 | V |
| Drain Current (DC) | I _D | | -9 | A |
| Drain Current (Pulse) | I _{DP} | PW≤10μs, duty cycle≤1% | -36 | A |
| Allowable Power Dissipation | P _D | Tc=25°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 =±100μA, V _{DS} =0 | ±30 | | | V |
| Zero-Gate Voltage Drain Current | I _{DSS} | V _{DS} =-250V, V _{GS} =0 | | | -1.0 | mA |
| Gate-to-Source Leakage Current | I _{GSS} | V _{GS} =±25V, V _{DS} =0 | | | ±10 | μA |
| 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 =-5A | 4.8 | 8.0 | | S |
| Static Drain-to-Source On-State Resistance | R _{DS(on)} | I _D =-5A, V _{GS} =-10V | | 0.4 | 0.55 | Ω |
| Input Capacitance | C _{iss} | V _{DS} =-20V, f=1MHz | | 1950 | | pF |
| Output Capacitance | C _{oss} | V _{DS} =-20V, f=1MHz | | 505 | | pF |
| Reverse Transfer Capacitance | C _{rss} | V _{DS} =-20V, f=1MHz | | 230 | | pF |

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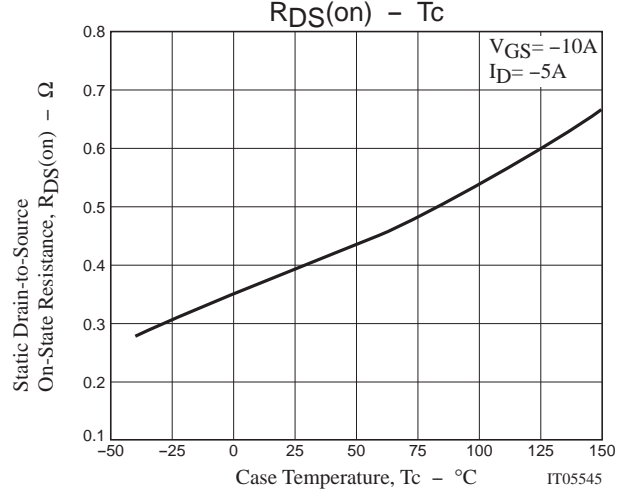
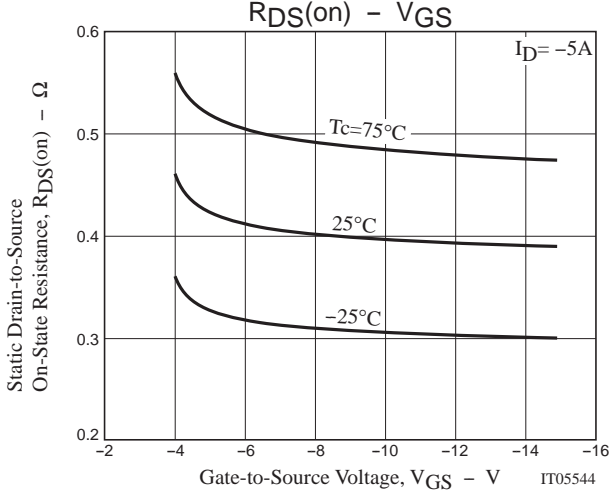
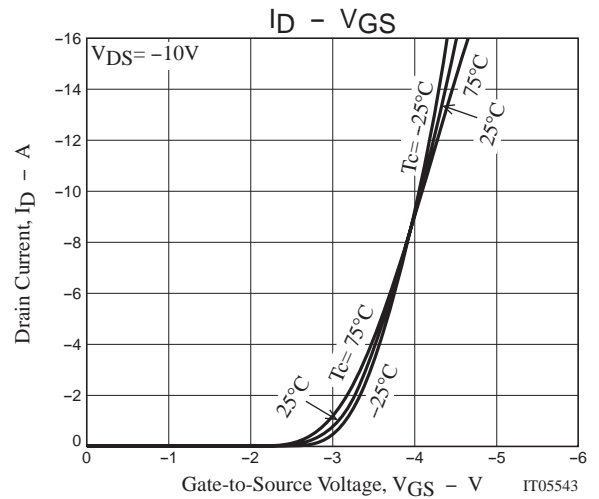
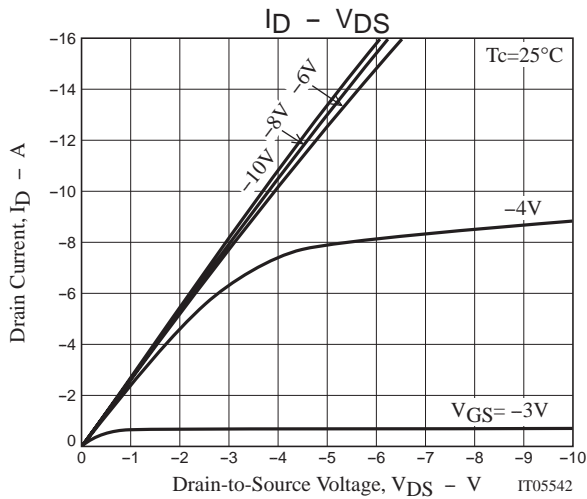
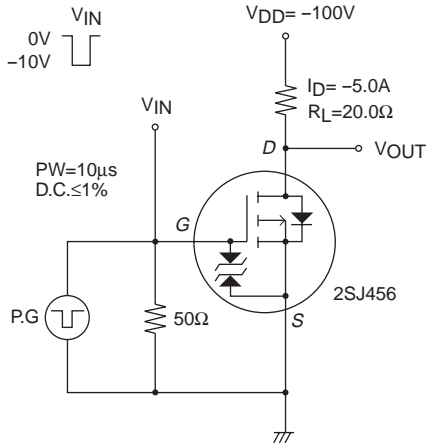
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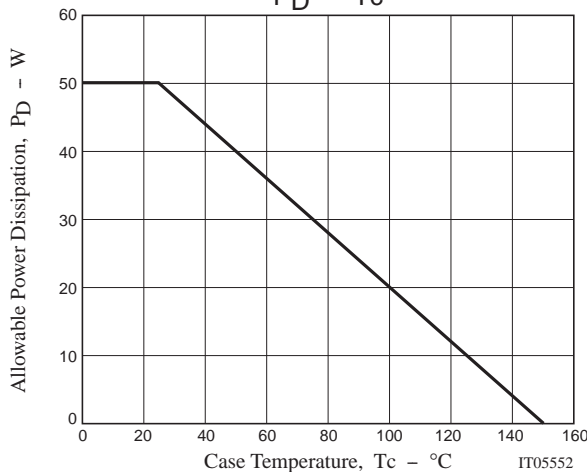
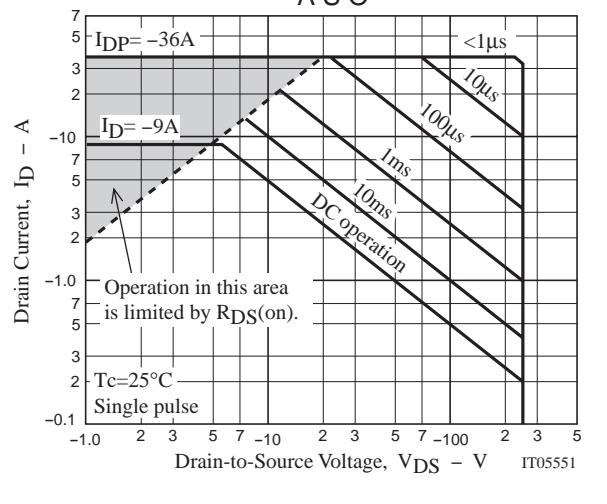
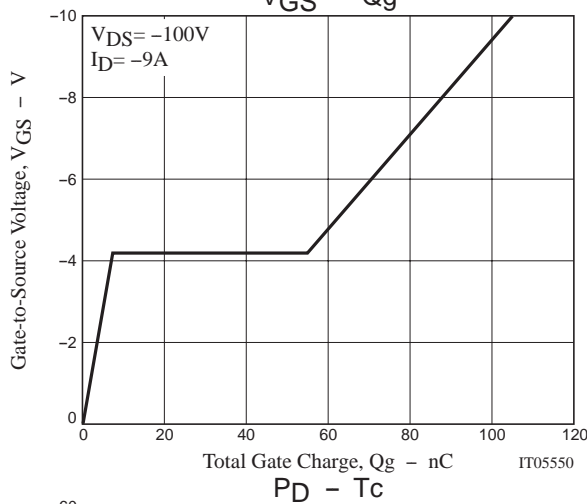
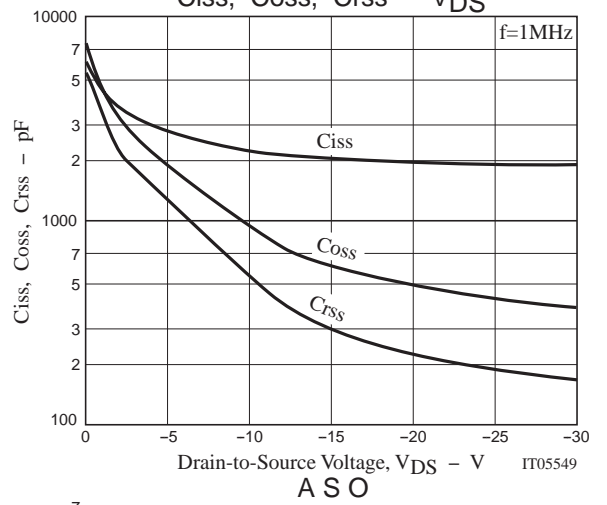
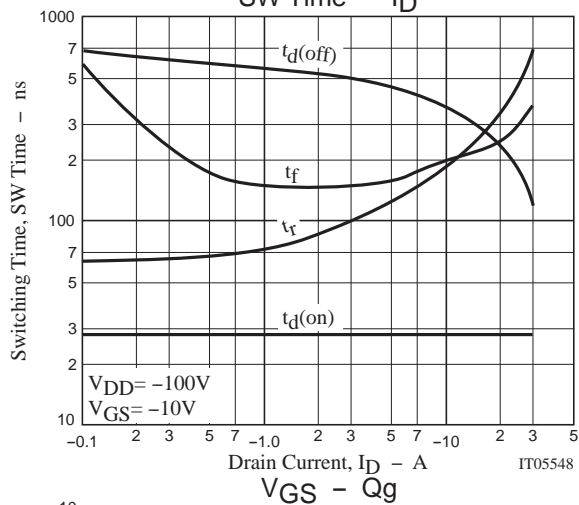
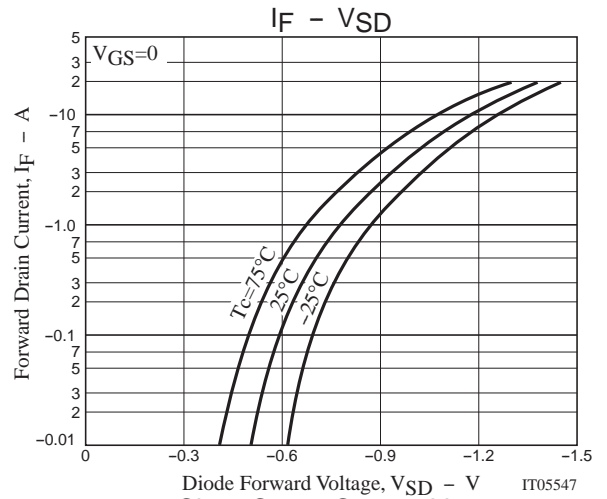
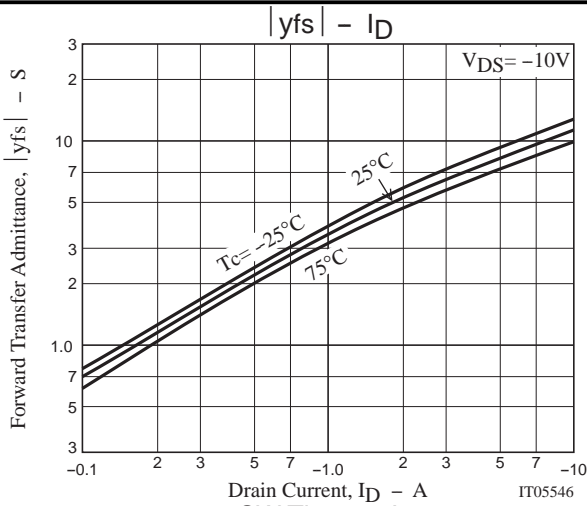
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| Parameter | Symbol | Conditions | Ratings | | | Unit |
|-----------------------------|--------------|---------------------------------|---------|------|------|------|
| | | | min | typ | max | |
| Turn-ON Delay Time | $t_{d(on)}$ | See specified Test Circuit. | | 28 | | ns |
| Rise Time | t_r | See specified Test Circuit. | | 125 | | ns |
| Turn-OFF Delay Time | $t_{d(off)}$ | See specified Test Circuit. | | 460 | | ns |
| Fall Time | t_f | See specified Test Circuit. | | 160 | | ns |
| Diode Forward Voltage | V_{SD} | $I_S = -9A, V_{GS} = 0$ | | -1.0 | -1.5 | V |
| Diode Reverse Recovery Time | t_{rr} | $I_S = -9A, di/dt = 100A/\mu s$ | | 180 | | ns |

Switching Time Test Circuit



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