



2SJ667 — P-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 4V drive.
- Motor drive, DC / DC converter.
- Avalanche resistance guarantee.

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} | | ±20 | V |
| Drain Current (DC) | I _D | | -42 | A |
| Drain Current (Pulse) | I _{DP} | PW≤10μs, duty cycle≤1% | -168 | A |
| Allowable Power Dissipation | P _D | | 2.5 | W |
| | | T _c =25°C | 100 | W |
| Channel Temperature | T _{ch} | | 150 | °C |
| Storage Temperature | T _{stg} | | -55 to +150 | °C |
| Avalanche Energy (Single Pulse) *1 | E _{AS} | | 58 | mJ |
| Avalanche Current *2 | I _{AV} | | -42 | A |

Note : *1 V_{DD}=30V, L=50μH, I_{AV}=-42A

*2 L≤50μH, Single pulse

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 | | | -1 | μA |
| Gate-to-Source Leakage Current | I _{GSS} | V _{GS} =±16V, V _{DS} =0 | | | ±10 | μA |
| Cutoff Voltage | V _{GS(off)} | V _{DS} =-10V, I _D =-1mA | -1.2 | | -2.6 | V |
| Forward Transfer Admittance | y _{fs} | V _{DS} =-10V, I _D =-21A | 22 | 37 | | S |
| Static Drain-to-Source On-State Resistance | R _{DS(on)1} | I _D =-21A, V _{GS} =-10V | | 42 | 56 | mΩ |
| | R _{DS(on)2} | I _D =-21A, V _{GS} =-4V | | 52 | 74 | mΩ |

Marking : J667

Continued on next page.

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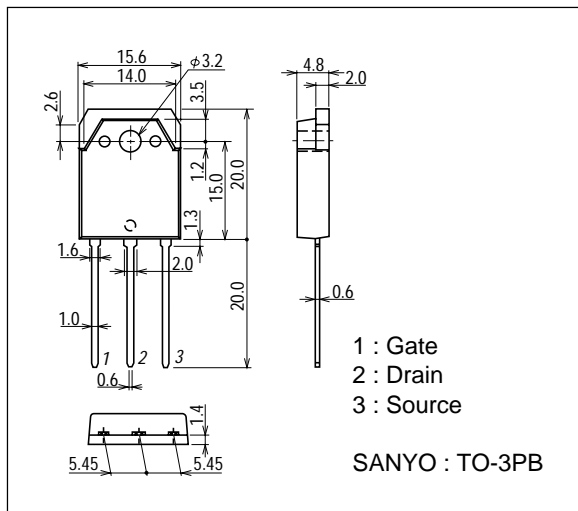
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| Parameter | Symbol | Conditions | Ratings | | | Unit |
|-------------------------------|------------|--------------------------------------|---------|-------|------|------|
| | | | min | typ | max | |
| Input Capacitance | Ciss | $V_{DS}=-20V, f=1MHz$ | | 6350 | | pF |
| Output Capacitance | Coss | $V_{DS}=-20V, f=1MHz$ | | 430 | | pF |
| Reverse Transfer Capacitance | Crss | $V_{DS}=-20V, f=1MHz$ | | 250 | | pF |
| Turn-ON Delay Time | $t_d(on)$ | See specified Test Circuit. | | 47 | | ns |
| Rise Time | t_r | See specified Test Circuit. | | 360 | | ns |
| Turn-OFF Delay Time | $t_d(off)$ | See specified Test Circuit. | | 480 | | ns |
| Fall Time | t_f | See specified Test Circuit. | | 220 | | ns |
| Total Gate Charge | Qg | $V_{DS}=-50V, V_{GS}=-10V, I_D=-42A$ | | 110 | | nC |
| Gate-to-Source Charge | Qgs | $V_{DS}=-50V, V_{GS}=-10V, I_D=-42A$ | | 20 | | nC |
| Gate-to-Drain "Miller" Charge | Qgd | $V_{DS}=-50V, V_{GS}=-10V, I_D=-42A$ | | 20 | | nC |
| Diode Forward Voltage | V_{SD} | $I_S=-42A, V_{GS}=0$ | | -1.05 | -1.2 | V |

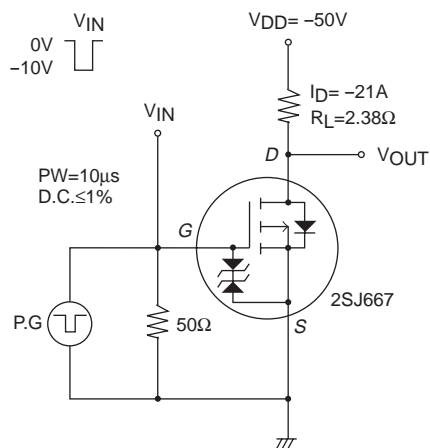
Package Dimensions

unit : mm

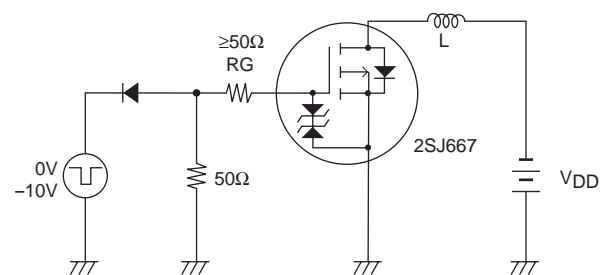
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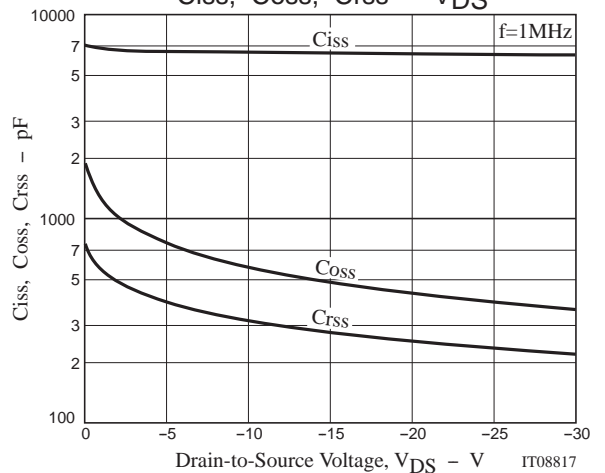
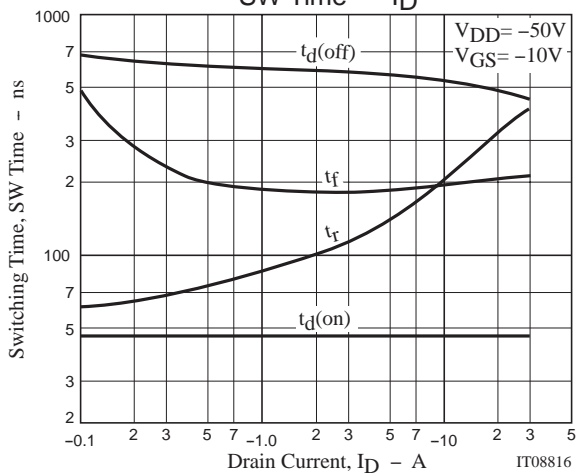
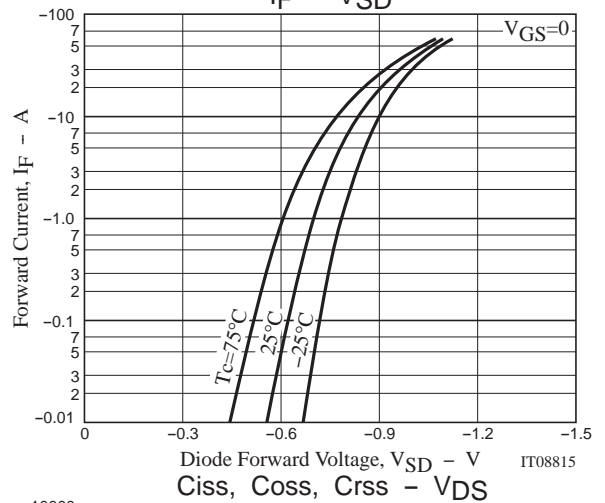
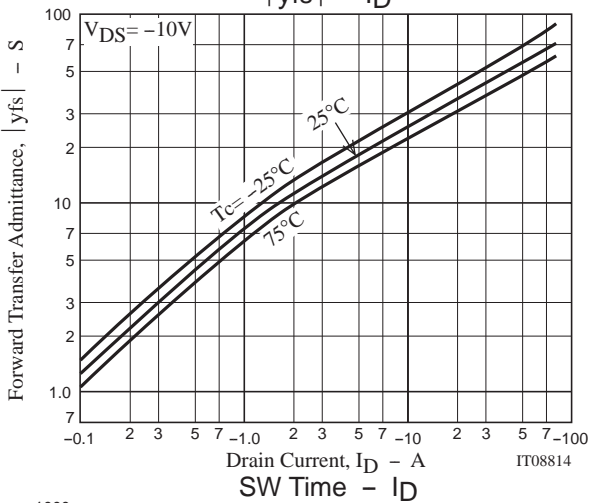
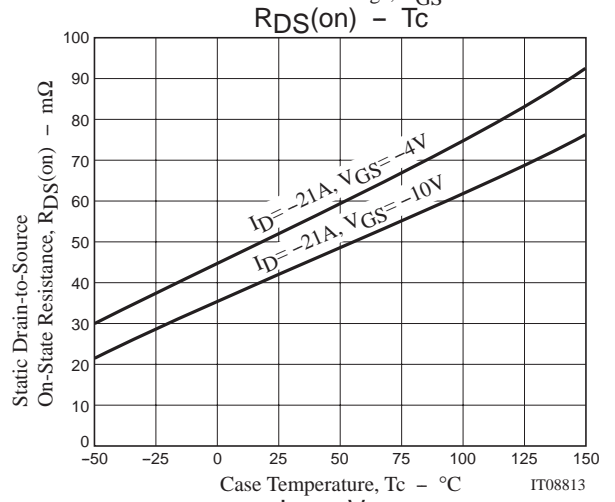
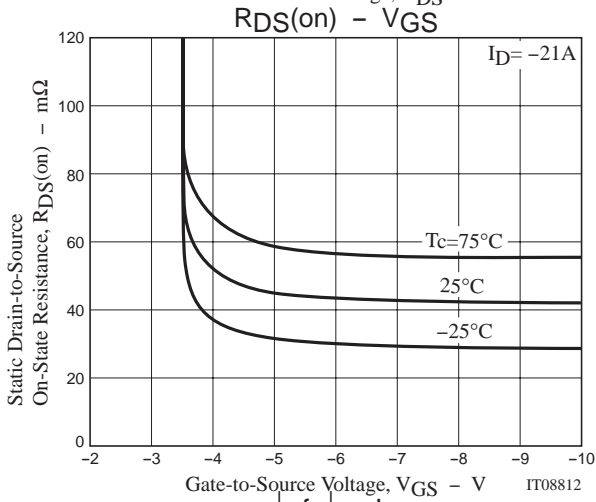
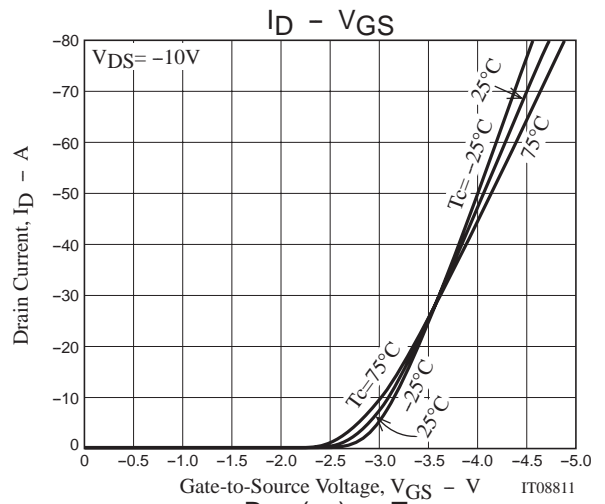
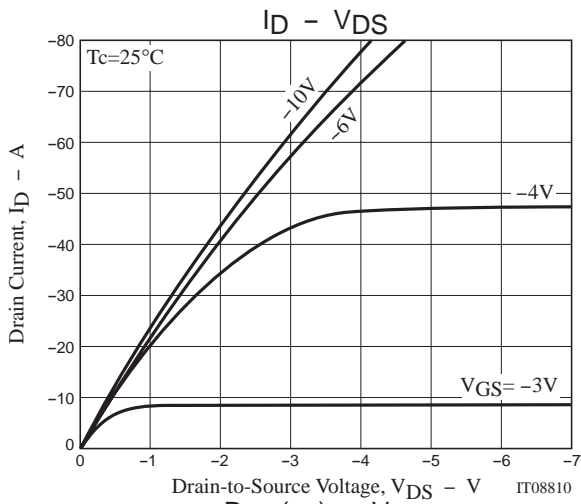


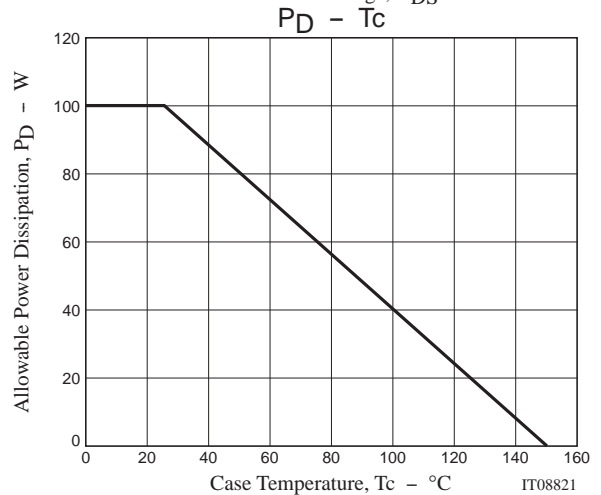
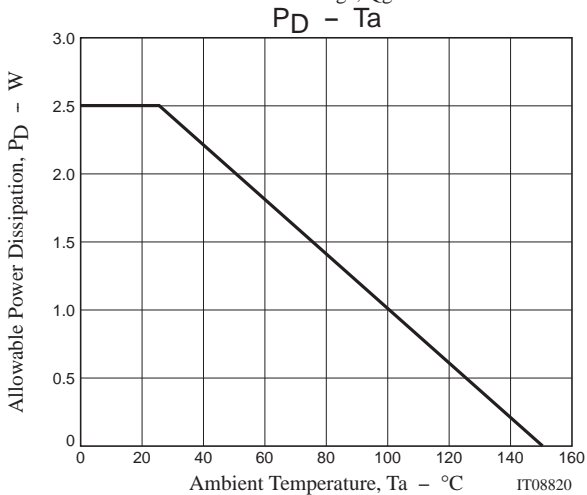
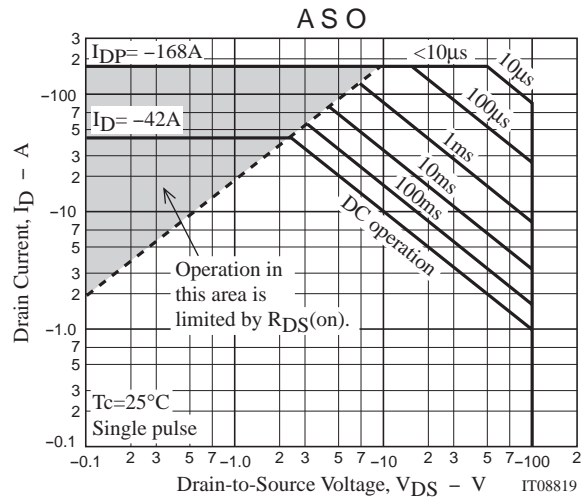
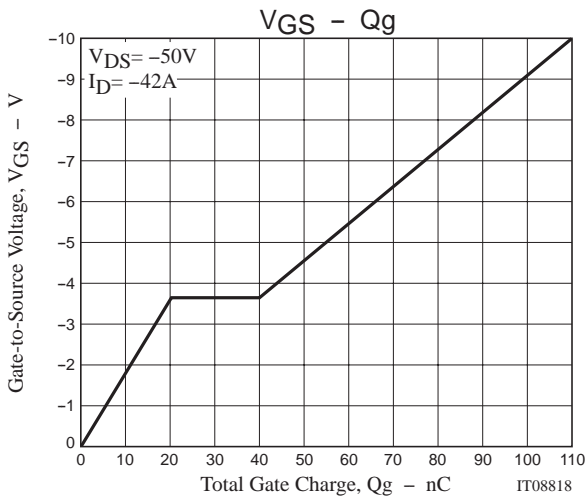
Switching Time Test Circuit



Avalanche Resistance Test Circuit







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