



2SJ683 — P-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- Load S/W Applications.
- Avalanche resistance guarantee.

Specifications

Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------------|------------------|------------------------|-------------|------|
| Drain-to-Source Voltage | V _{DSS} | | -60 | V |
| Gate-to-Source Voltage | V _{GSS} | | ±20 | V |
| Drain Current (DC) | I _D | | -65 | A |
| Drain Current (Pulse) | I _{DP} | PW≤10μs, duty cycle≤1% | -260 | 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 |
| Avalanche Energy (Single Pulse) *1 | E _{AS} | | 400 | mJ |
| Avalanche Current *2 | I _{AV} | | -65 | A |

Note : *1 V_{DD}=-30V, L=100μH, I_{AV}=-65A

*2 L≤100μH, 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} =0V | -60 | | | V |
| Zero-Gate Voltage Drain Current | I _{DSS} | V _{DS} =-60V, V _{GS} =0V | | | -1 | μA |
| Gate-to-Source Leakage Current | I _{GSS} | V _{GS} = ±16V, V _{DS} =0V | | | ±10 | μA |

Marking : J683

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2SJ683

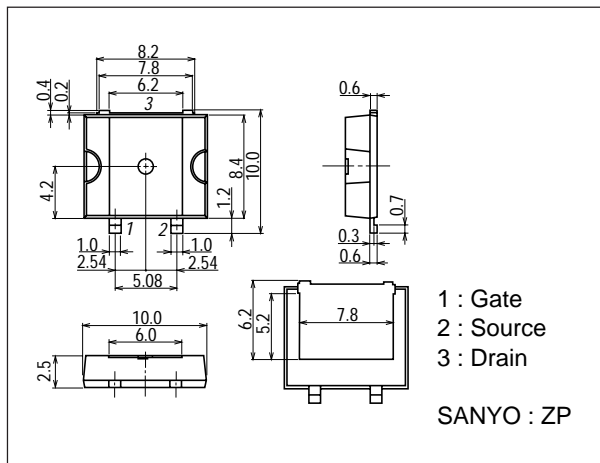
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| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|---------------|--------------------------------------|---------|-------|------|-----------|
| | | | min | typ | max | |
| Cutoff Voltage | $V_{GS(off)}$ | $V_{DS}=-10V, I_D=-1mA$ | -1.2 | | -2.6 | V |
| Forward Transfer Admittance | $ y_{fs} $ | $V_{DS}=-10V, I_D=-33A$ | 39 | 65 | | S |
| Static Drain-to-Source On-State Resistance | $R_{DS(on)1}$ | $I_D=-33A, V_{GS}=-10V$ | | 8.0 | 10.5 | $m\Omega$ |
| | $R_{DS(on)2}$ | $I_D=-33A, V_{GS}=-4V$ | | 10.5 | 15 | $m\Omega$ |
| Input Capacitance | C_{iss} | $V_{DS}=-20V, f=1MHz$ | | 15500 | | pF |
| Output Capacitance | C_{oss} | $V_{DS}=-20V, f=1MHz$ | | 1000 | | pF |
| Reverse Transfer Capacitance | C_{rss} | $V_{DS}=-20V, f=1MHz$ | | 800 | | pF |
| Turn-ON Delay Time | $t_d(on)$ | See specified Test Circuit. | | 110 | | ns |
| Rise Time | t_r | See specified Test Circuit. | | 620 | | ns |
| Turn-OFF Delay Time | $t_d(off)$ | See specified Test Circuit. | | 900 | | ns |
| Fall Time | t_f | See specified Test Circuit. | | 580 | | ns |
| Total Gate Charge | Q_g | $V_{DS}=-30V, V_{GS}=-10V, I_D=-65A$ | | 290 | | nC |
| Gate-to-Source Charge | Q_{gs} | $V_{DS}=-30V, V_{GS}=-10V, I_D=-65A$ | | 50 | | nC |
| Gate-to-Drain "Miller" Charge | Q_{gd} | $V_{DS}=-30V, V_{GS}=-10V, I_D=-65A$ | | 50 | | nC |
| Diode Forward Voltage | V_{SD} | $I_S=-65A, V_{GS}=0V$ | | -0.9 | -1.5 | V |

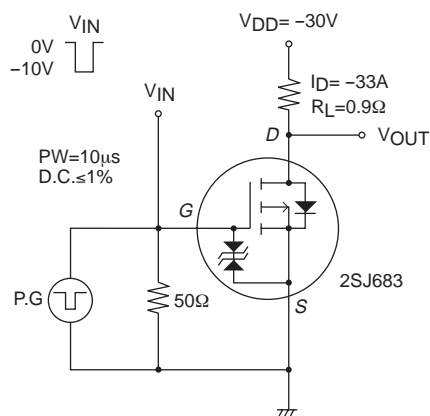
Package Dimensions

unit : mm (typ)

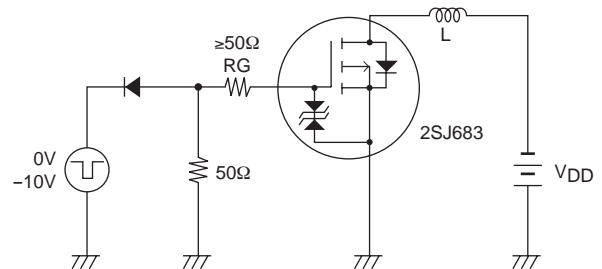
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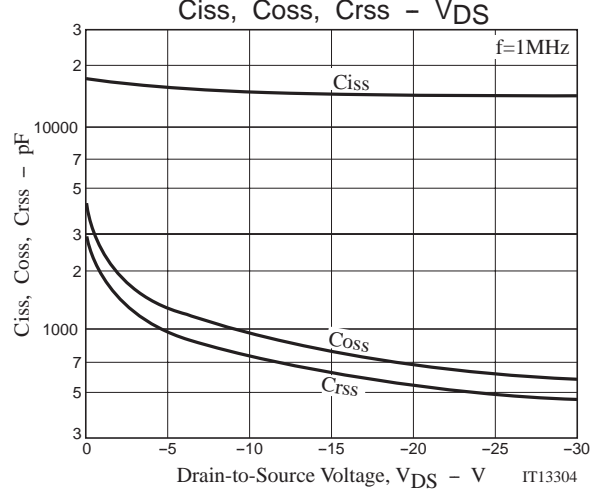
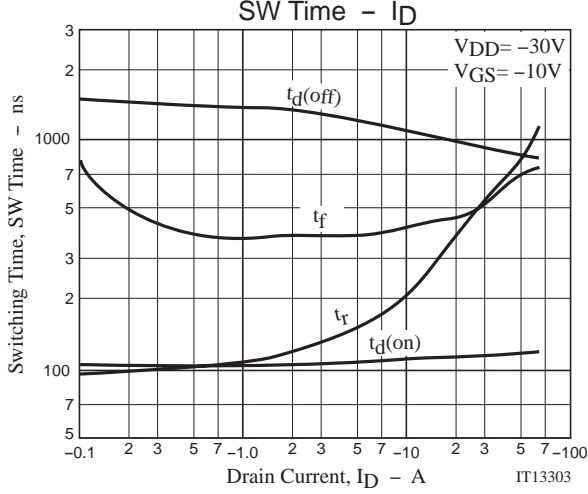
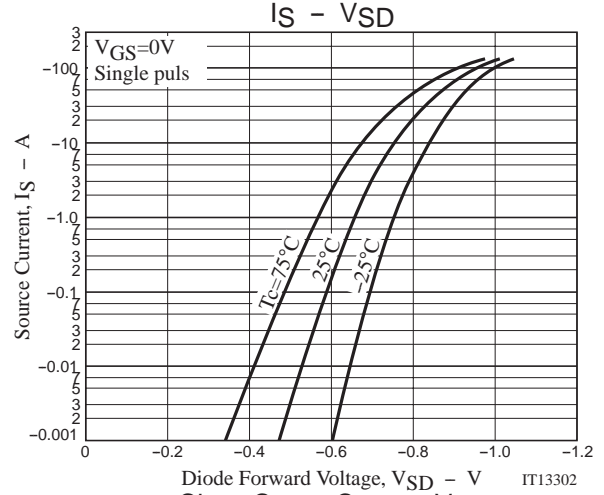
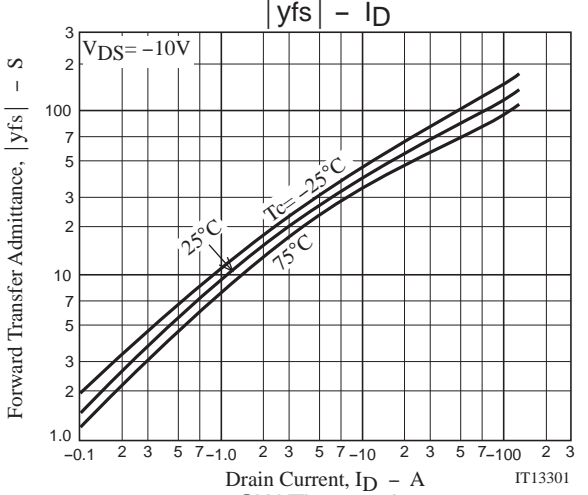
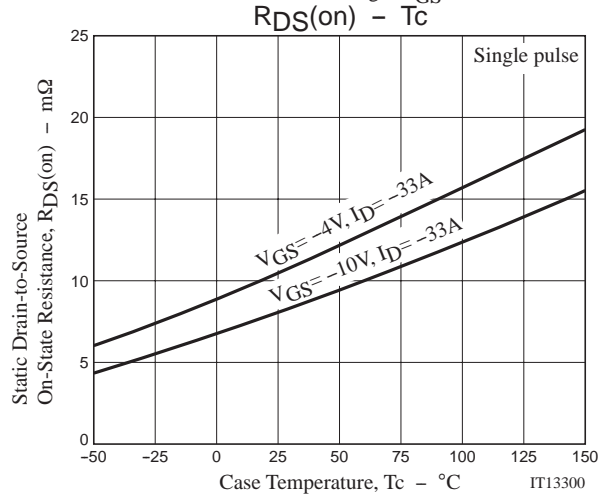
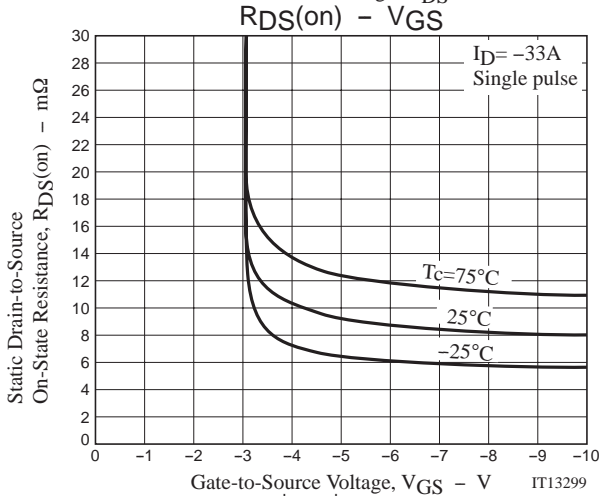
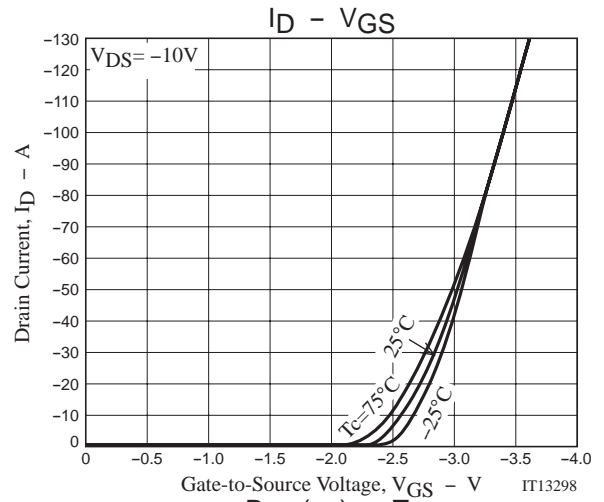
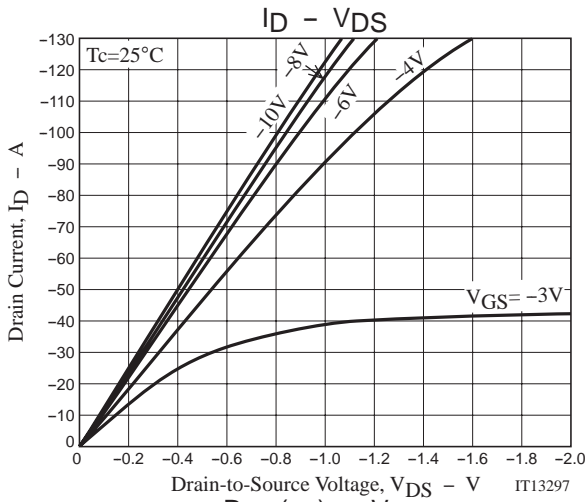


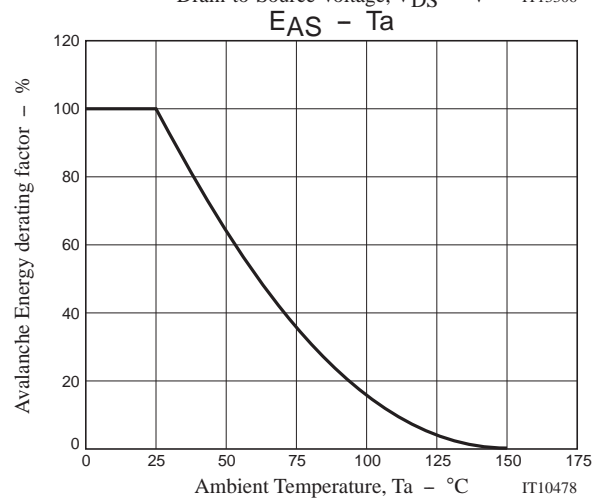
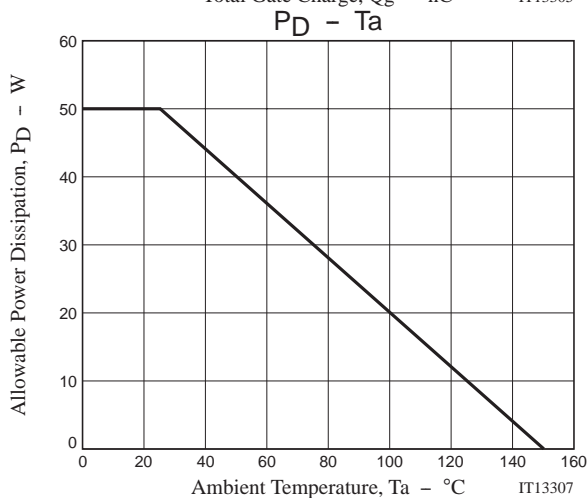
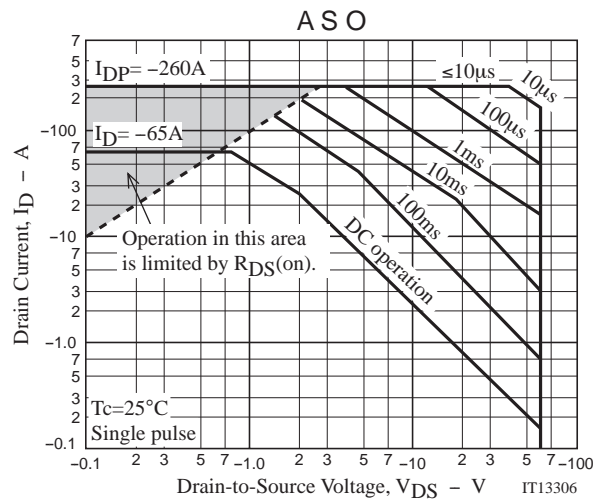
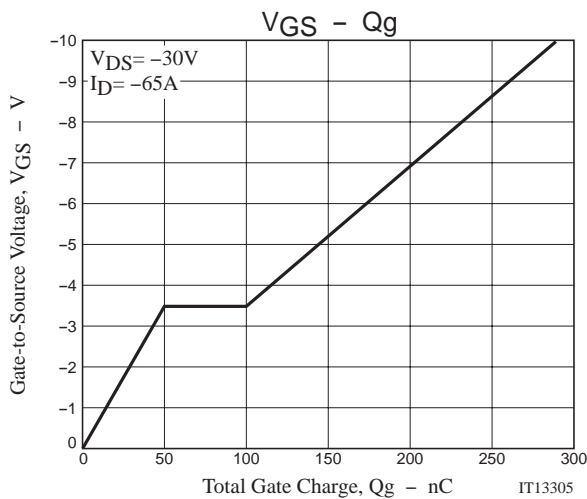
Switching Time Test Circuit



Avalanche Resistance Test Circuit







Note on usage : Since the 2SJ683 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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