



SANYO Semiconductors

## DATA SHEET

P-Channel Silicon MOSFET

# FSS145 — General-Purpose Switching Device Applications

## Features

- Load switching applications.
- Low ON-resistance.
- 4V drive.

## Specifications

Absolute Maximum Ratings at Ta=25°C

| Parameter                   | Symbol           | Conditions                                         | Ratings     | Unit |
|-----------------------------|------------------|----------------------------------------------------|-------------|------|
| Drain-to-Source Voltage     | V <sub>DSS</sub> |                                                    | -45         | V    |
| Gate-to-Source Voltage      | V <sub>GSS</sub> |                                                    | ±20         | V    |
| Drain Current (DC)          | I <sub>D</sub>   |                                                    | -8          | A    |
| Drain Current (PW≤10s)      | I <sub>D</sub>   | Duty cycle≤1%                                      | -8.5        | A    |
| Drain Current (PW≤10μs)     | I <sub>DP</sub>  | Duty cycle≤1%                                      | -32         | A    |
| Allowable Power Dissipation | P <sub>D</sub>   | Mounted on a ceramic board (1200mm²×0.8mm), PW≤10s | 2.9         | W    |
| Channel Temperature         | T <sub>ch</sub>  |                                                    | 150         | °C   |
| Storage Temperature         | T <sub>stg</sub> |                                                    | -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 <sub>D</sub> =-1mA, V <sub>GS</sub> =0V  | -45     |      |      | V    |
| Zero-Gate Voltage Drain Current            | I <sub>DSS</sub>     | V <sub>D</sub> =-45V, V <sub>GS</sub> =0V  |         |      | -1   | μA   |
| Gate-to-Source Leakage Current             | I <sub>GSS</sub>     | V <sub>GS</sub> =±16V, V <sub>D</sub> =0V  |         |      | ±10  | μA   |
| Cutoff Voltage                             | V <sub>GS(off)</sub> | V <sub>D</sub> =-10V, I <sub>D</sub> =-1mA | -1.2    |      | -2.6 | V    |
| Forward Transfer Admittance                | y <sub>fs</sub>      | V <sub>D</sub> =-10V, I <sub>D</sub> =-8A  | 10      | 17   |      | S    |
| Static Drain-to-Source On-State Resistance | R <sub>DS(on)1</sub> | I <sub>D</sub> =-8A, V <sub>GS</sub> =-10V |         | 18   | 24   | mΩ   |
|                                            | R <sub>DS(on)2</sub> | I <sub>D</sub> =-4A, V <sub>GS</sub> =-4V  |         | 28   | 40   | mΩ   |
| Input Capacitance                          | C <sub>iss</sub>     | V <sub>D</sub> =-20V, f=1MHz               |         | 3490 |      | pF   |
| Output Capacitance                         | C <sub>oss</sub>     | V <sub>D</sub> =-20V, f=1MHz               |         | 370  |      | pF   |
| Reverse Transfer Capacitance               | C <sub>rss</sub>     | V <sub>D</sub> =-20V, f=1MHz               |         | 290  |      | pF   |
| Turn-ON Delay Time                         | t <sub>d(on)</sub>   | See specified Test Circuit.                |         | 35   |      | ns   |
| Rise Time                                  | t <sub>r</sub>       | See specified Test Circuit.                |         | 65   |      | ns   |
| Turn-OFF Delay Time                        | t <sub>d(off)</sub>  | See specified Test Circuit.                |         | 270  |      | ns   |
| Fall Time                                  | t <sub>f</sub>       | See specified Test Circuit.                |         | 125  |      | ns   |

Marking : S145

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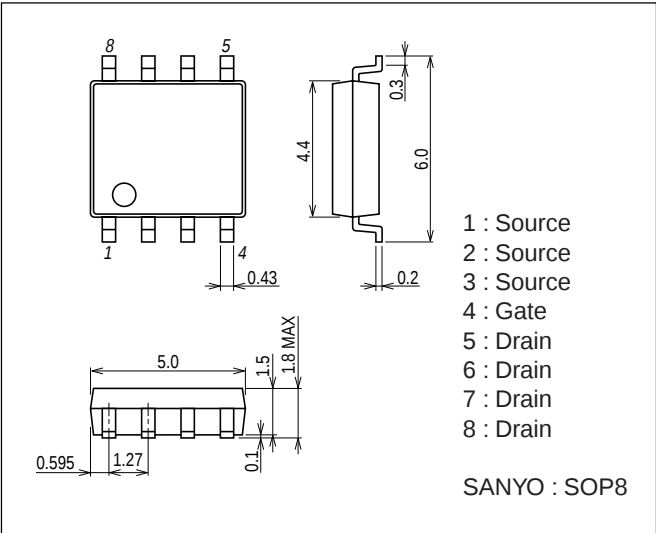
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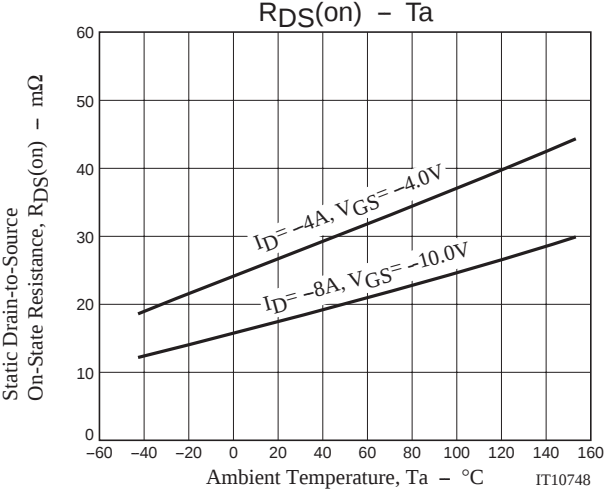
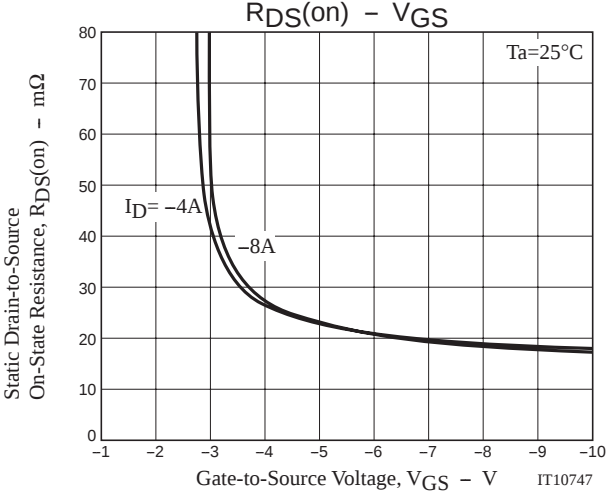
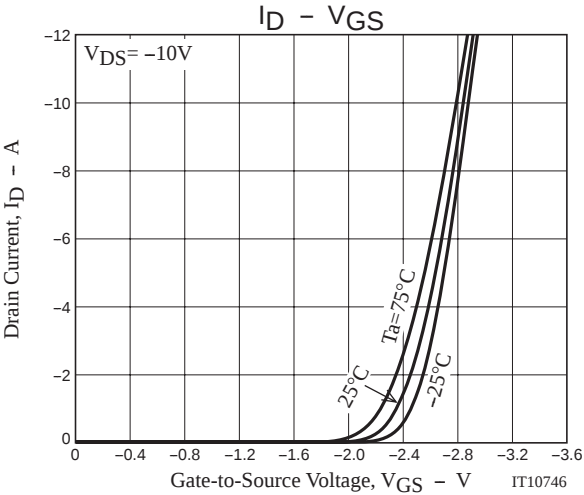
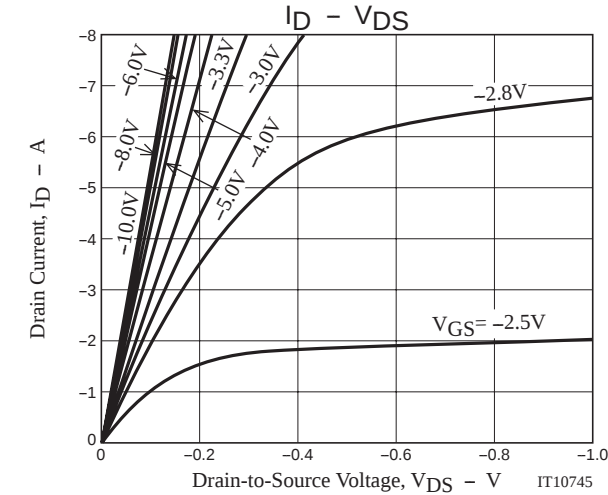
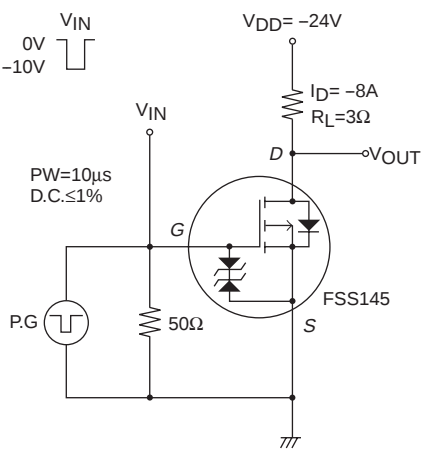
| Parameter                     | Symbol          | Conditions                                                        | Ratings |       |      | Unit |
|-------------------------------|-----------------|-------------------------------------------------------------------|---------|-------|------|------|
|                               |                 |                                                                   | min     | typ   | max  |      |
| Total Gate Charge             | Qg              | V <sub>DS</sub> =-24V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-8A |         | 63    |      | nC   |
| Gate-to-Source Charge         | Qgs             | V <sub>DS</sub> =-24V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-8A |         | 9     |      | nC   |
| Gate-to-Drain "Miller" Charge | Qgd             | V <sub>DS</sub> =-24V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-8A |         | 12    |      | nC   |
| Diode Forward Voltage         | V <sub>SD</sub> | I <sub>S</sub> =-8A, V <sub>GS</sub> =0V                          |         | -0.81 | -1.5 | V    |

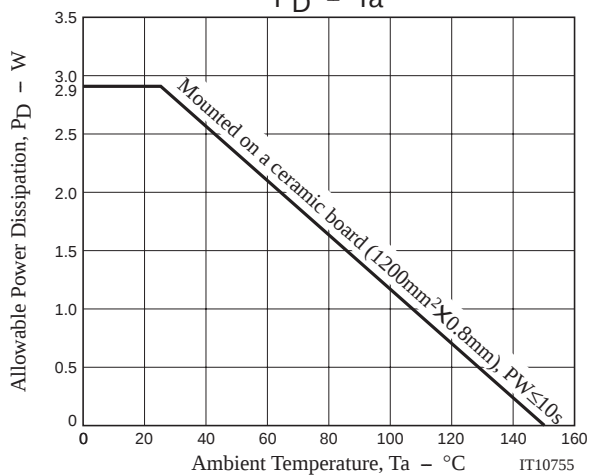
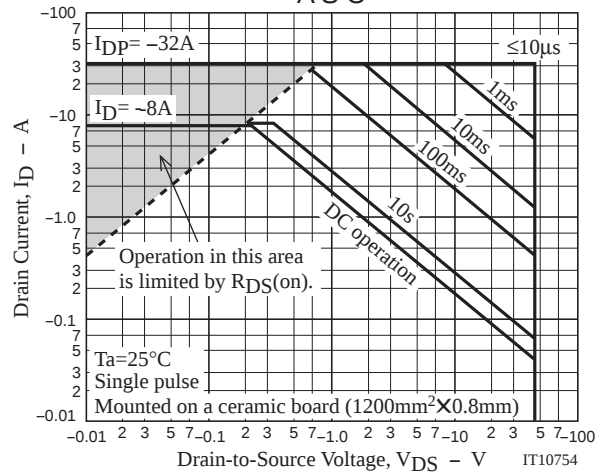
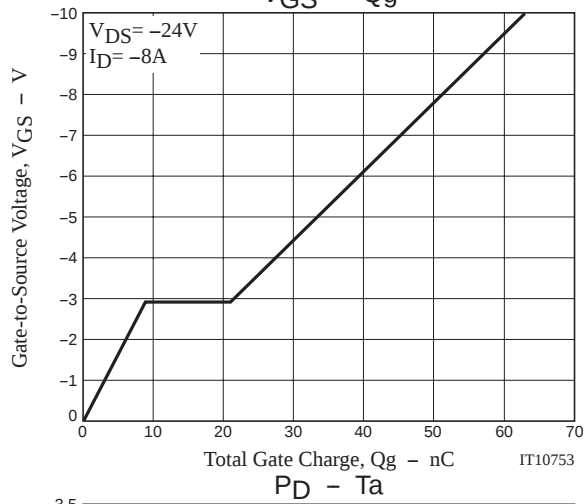
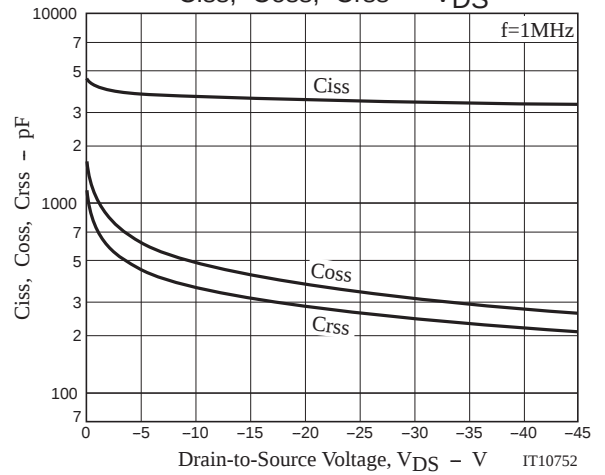
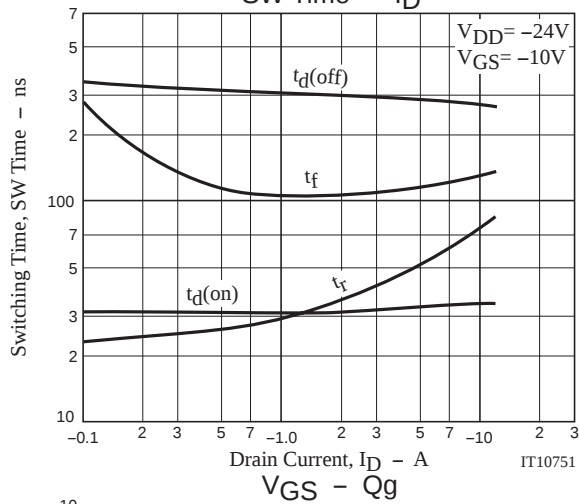
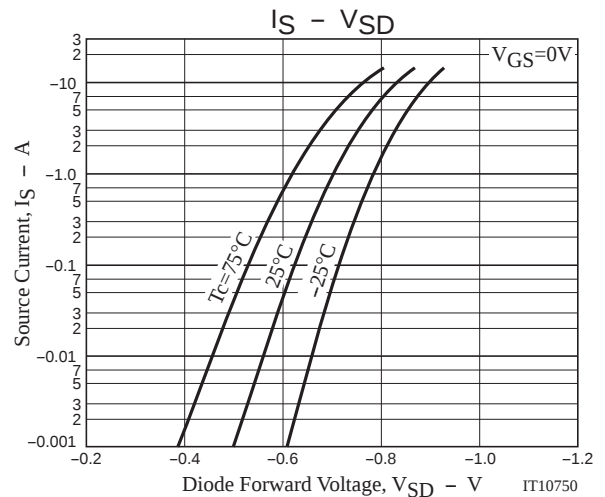
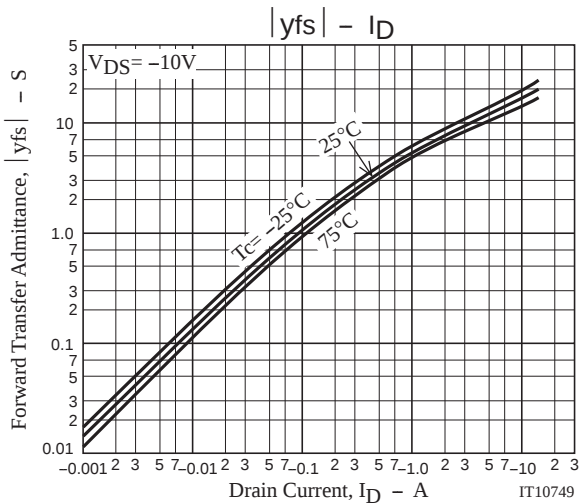
Package Dimensions

unit : mm  
7005-002



Switching Time Test Circuit





Note on usage : Since the FSS145 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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