



SFT1405 — N-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

- Motor drive application.
- Low ON-resistance.
- 4V drive.

Specifications

Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|------------------|------------------------|-------------|------|
| Drain-to-Source Voltage | V _{DSS} | | 45 | V |
| Gate-to-Source Voltage | V _{GSS} | | ±20 | V |
| Drain Current (DC) | I _D | | 10 | A |
| Drain Current (PW≤10μs) | I _{DP} | PW≤10μs, duty cycle≤1% | 40 | A |
| Allowable Power Dissipation | P _D | | 1.0 | W |
| | | Tc=25°C | 15 | 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} =0V | 45 | | | V |
| Zero-Gate Voltage Drain Current | I _{DSS} | V _{DS} =45V, V _{GS} =0V | | | 1 | μA |
| Gate-to-Source Leakage Current | I _{GSS} | V _{GS} =±16V, V _{DS} =0V | | | ±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 =5A | 3.6 | 6 | | S |
| Static Drain-to-Source On-State Resistance | R _{DS(on)1} | I _D =5A, V _{GS} =10V | | 34 | 45 | mΩ |
| | R _{DS(on)2} | I _D =5A, V _{GS} =4V | | 53 | 74 | mΩ |

Marking : T1405

Continued on next page.

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SFT1405

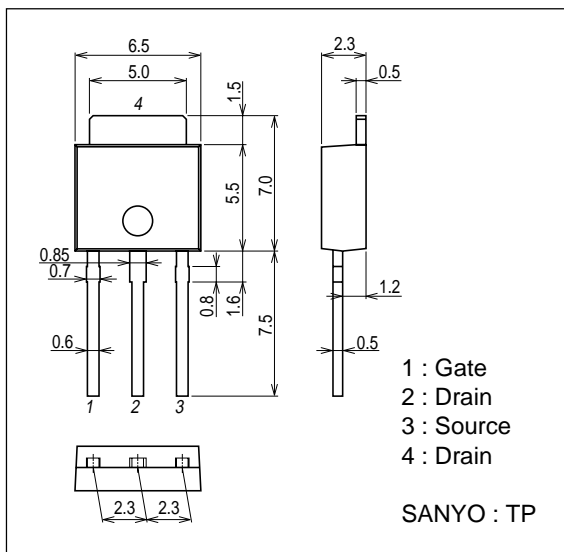
Click here to go to the product page

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|-------------------------------|------------|-----------------------------------|---------|------|-----|------|
| | | | min | typ | max | |
| Input Capacitance | Ciss | $V_{DS}=20V, f=1MHz$ | | 860 | | pF |
| Output Capacitance | Coss | $V_{DS}=20V, f=1MHz$ | | 105 | | pF |
| Reverse Transfer Capacitance | Crss | $V_{DS}=20V, f=1MHz$ | | 75 | | pF |
| Turn-ON Delay Time | $t_d(on)$ | See specified Test Circuit. | | 14 | | ns |
| Rise Time | t_r | See specified Test Circuit. | | 64 | | ns |
| Turn-OFF Delay Time | $t_d(off)$ | See specified Test Circuit. | | 60 | | ns |
| Fall Time | t_f | See specified Test Circuit. | | 65 | | ns |
| Total Gate Charge | Qg | $V_{DS}=24V, V_{GS}=10V, I_D=10A$ | | 18.1 | | nC |
| Gate-to-Source Charge | Qgs | $V_{DS}=24V, V_{GS}=10V, I_D=10A$ | | 2.6 | | nC |
| Gate-to-Drain "Miller" Charge | Qgd | $V_{DS}=24V, V_{GS}=10V, I_D=10A$ | | 4 | | nC |
| Diode Forward Voltage | V_{SD} | $I_S=10A, V_{GS}=0V$ | | 0.97 | 1.2 | V |

Package Dimensions

unit : mm (typ)

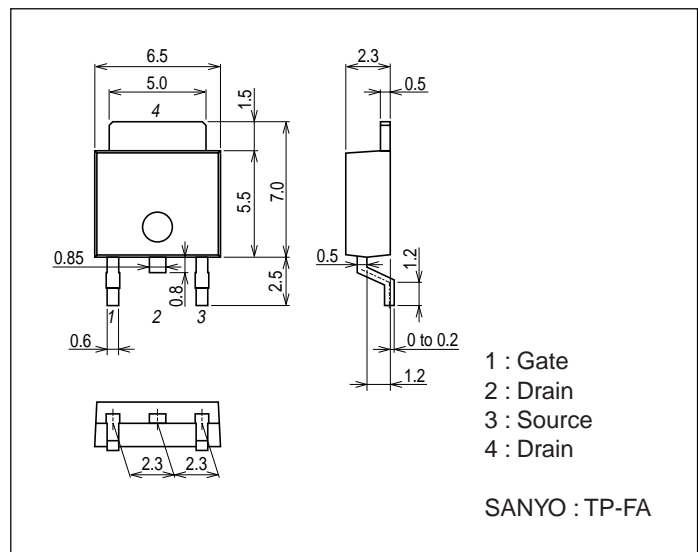
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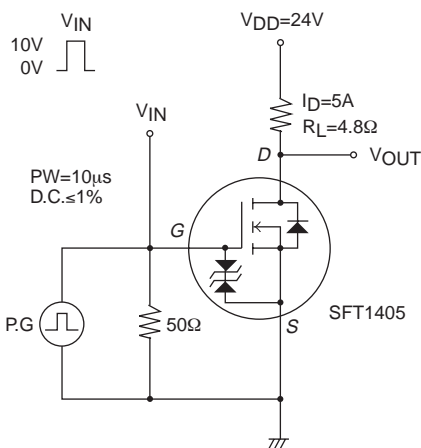
Package Dimensions

unit : mm (typ)

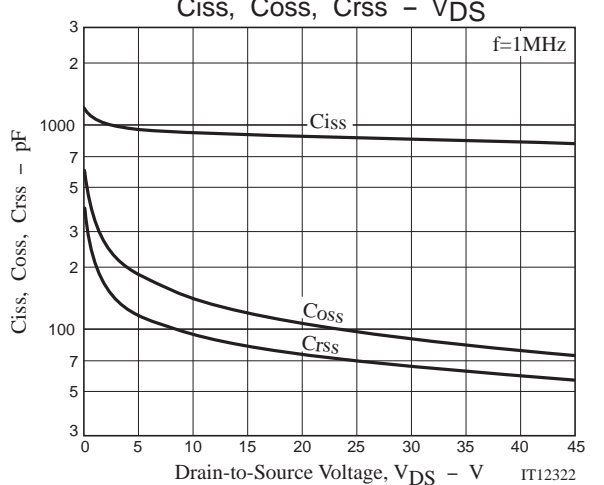
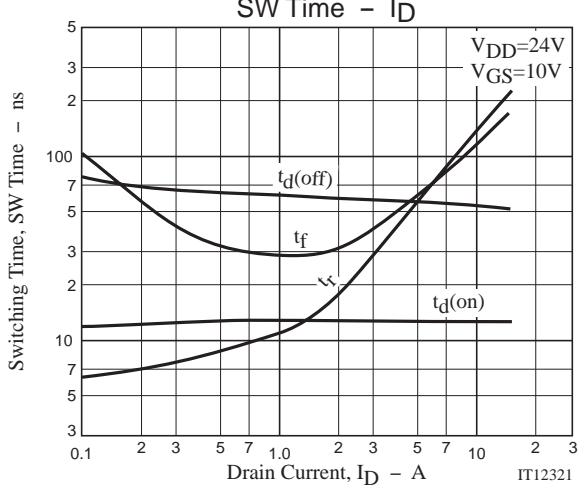
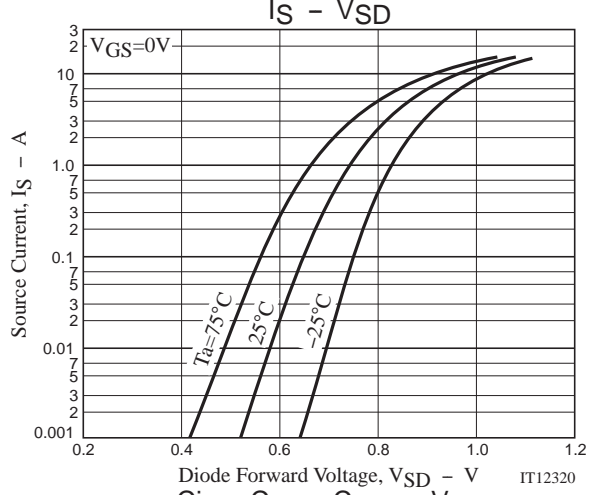
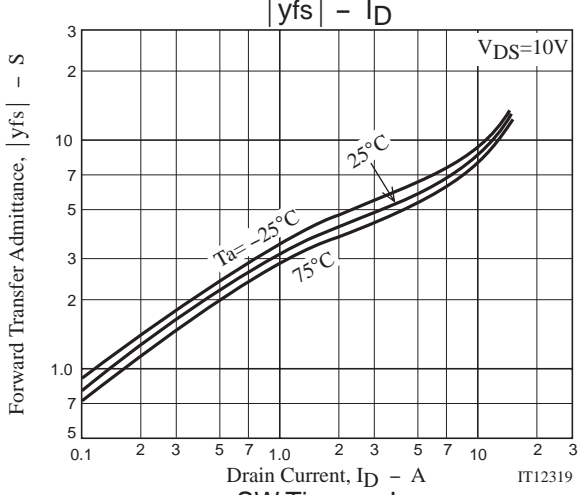
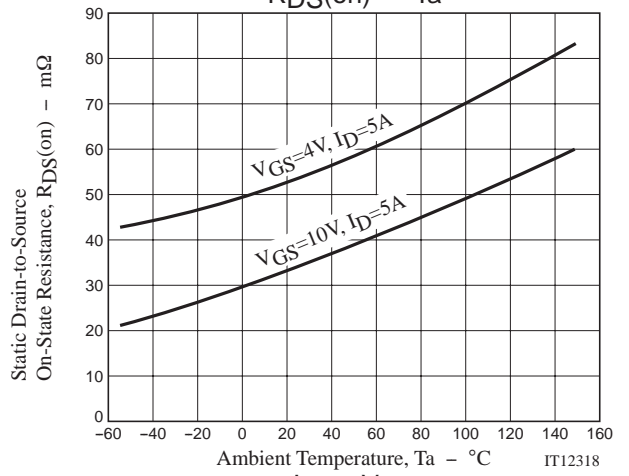
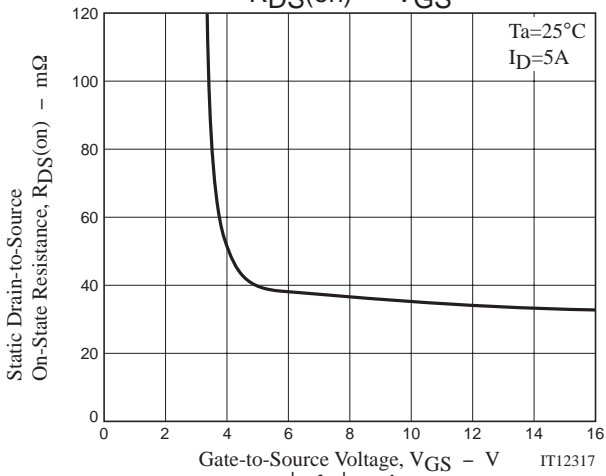
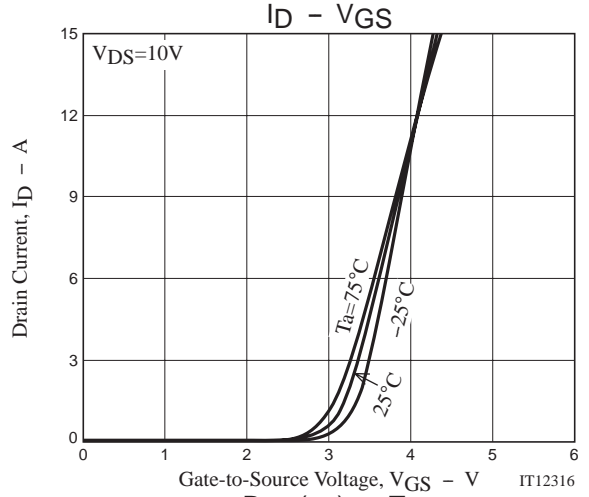
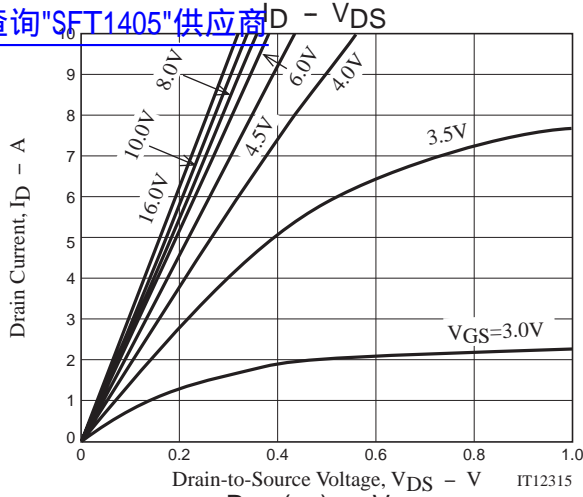
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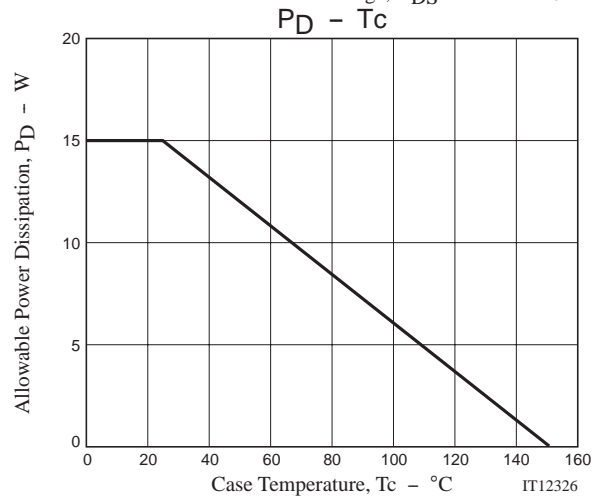
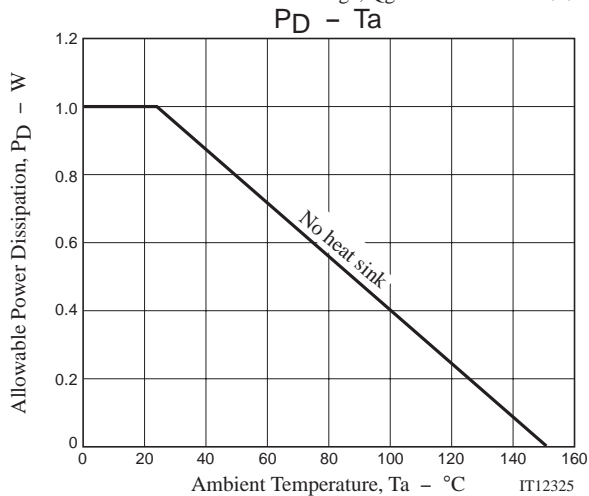
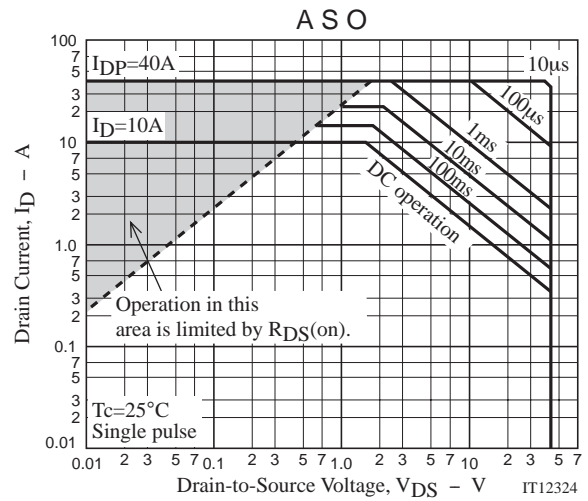
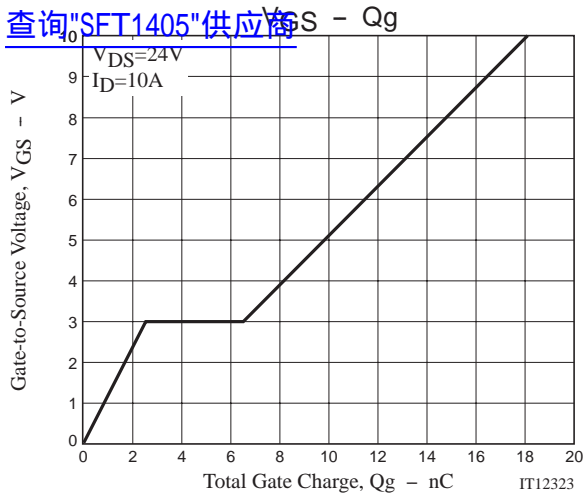
Switching Time Test Circuit



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