



P-Channel Silicon MOSFET

3HP04S — General-Purpose Switching Device Applications

Features

- 4V drive.

Specifications

Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|------------------|---|-------------|------|
| Drain-to-Source Voltage | V _{DSS} | | -30 | V |
| Gate-to-Source Voltage | V _{GSS} | | ±20 | V |
| Drain Current (DC) | I _D | | -200 | mA |
| Drain Current (Pulse) | I _{DP} | PW≤10μs, duty cycle≤1% | -800 | mA |
| Allowable Power Dissipation | P _D | Mounted on a glass-epoxy printed circuit board (145X80X1.6mm) | 0.15 | 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 | -30 | | | V |
| Zero-Gate Voltage Drain Current | I _{DSS} | V _{DS} =-30V, 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 =-100μA | -1.2 | | -2.6 | V |
| Forward Transfer Admittance | y _{fs} | V _{DS} =-10V, I _D =-100mA | 150 | 250 | | mS |
| Static Drain-to-Source On-State Resistance | R _{DS(on)1} | I _D =-100mA, V _{GS} =-10V | | 1.4 | 1.9 | Ω |
| | R _{DS(on)2} | I _D =-50mA, V _{GS} =-4V | | 2.8 | 4.0 | Ω |
| Input Capacitance | C _{iss} | V _{DS} =-10V, f=1MHz | | 22 | | pF |
| Output Capacitance | C _{oss} | V _{DS} =-10V, f=1MHz | | 6.0 | | pF |
| Reverse Transfer Capacitance | C _{rss} | V _{DS} =-10V, f=1MHz | | 3.5 | | pF |

Marking : XH

Continued on next page.

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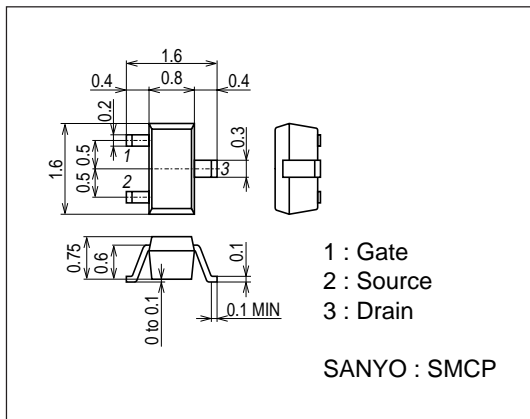
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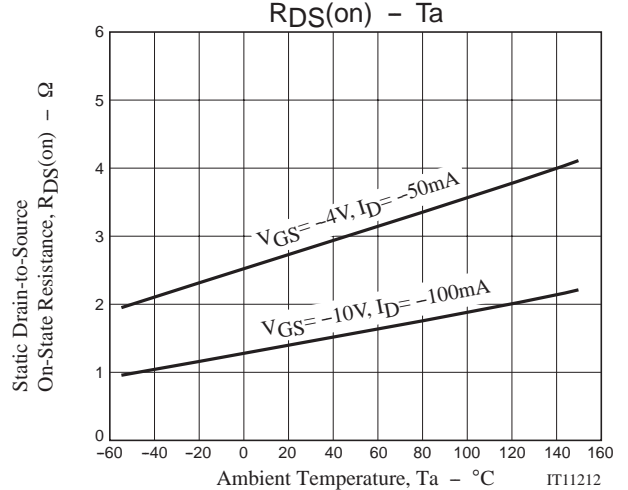
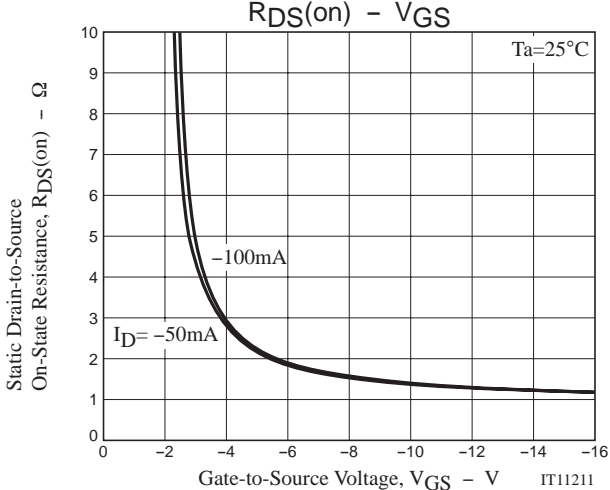
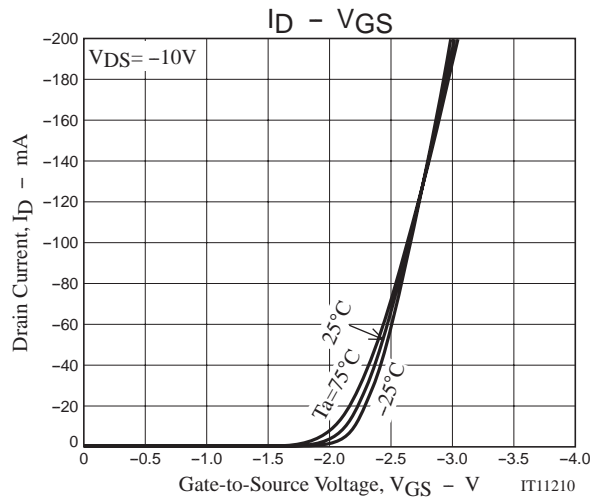
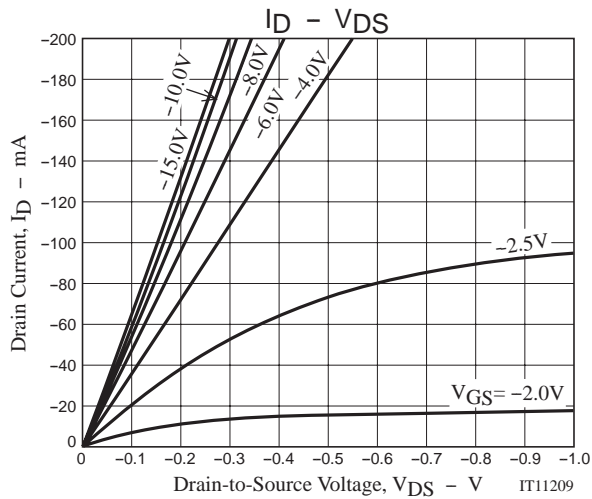
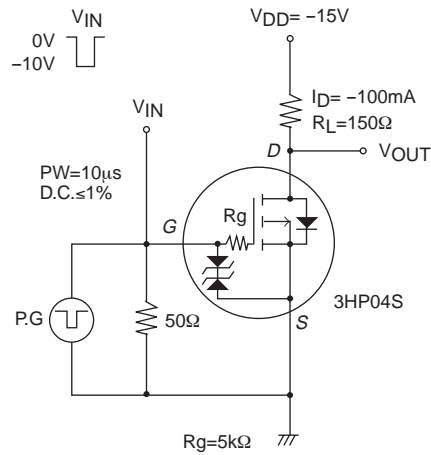
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|-------------------------------|--------------|--|---------|-------|------|------|
| | | | min | typ | max | |
| Turn-ON Delay Time | $t_{d(on)}$ | See specified Test Circuit. | | 34 | | ns |
| Rise Time | t_r | See specified Test Circuit. | | 59 | | ns |
| Turn-OFF Delay Time | $t_{d(off)}$ | See specified Test Circuit. | | 435 | | ns |
| Fall Time | t_f | See specified Test Circuit. | | 250 | | ns |
| Total Gate Charge | Q_g | $V_{DS}=-10V, V_{GS}=-10V, I_D=-200mA$ | | 1.6 | | nC |
| Gate-to-Source Charge | Q_{gs} | $V_{DS}=-10V, V_{GS}=-10V, I_D=-200mA$ | | 0.5 | | nC |
| Gate-to-Drain "Miller" Charge | Q_{gd} | $V_{DS}=-10V, V_{GS}=-10V, I_D=-200mA$ | | 0.1 | | nC |
| Diode Forward Voltage | V_{SD} | $I_S=-200mA, V_{GS}=0V$ | | -0.86 | -1.2 | V |

Package Dimensions

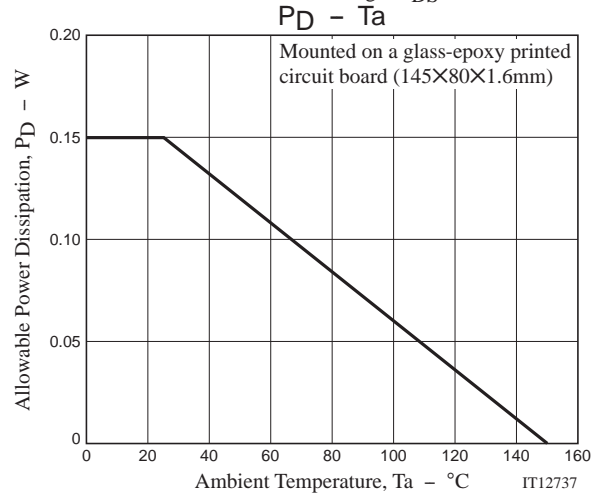
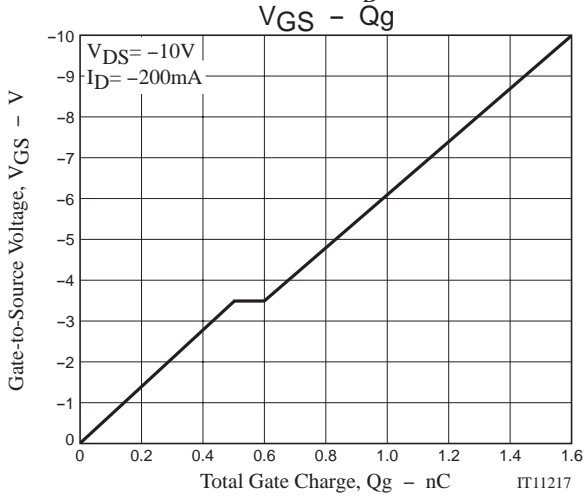
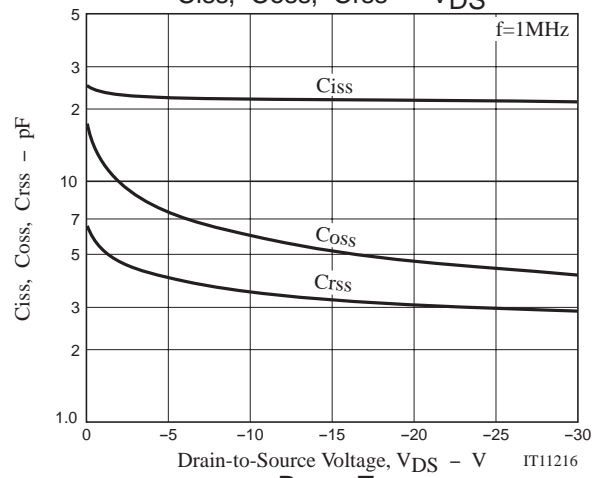
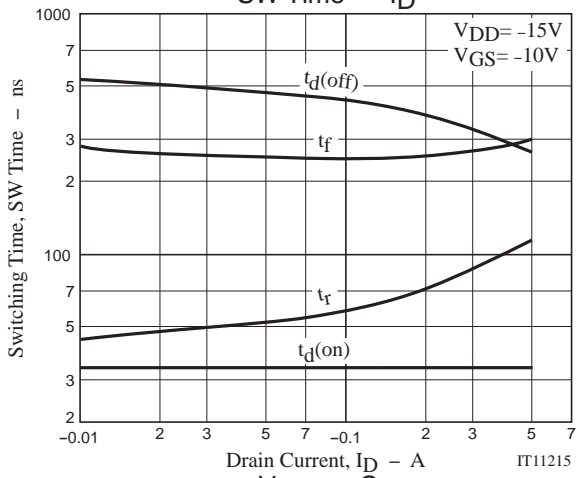
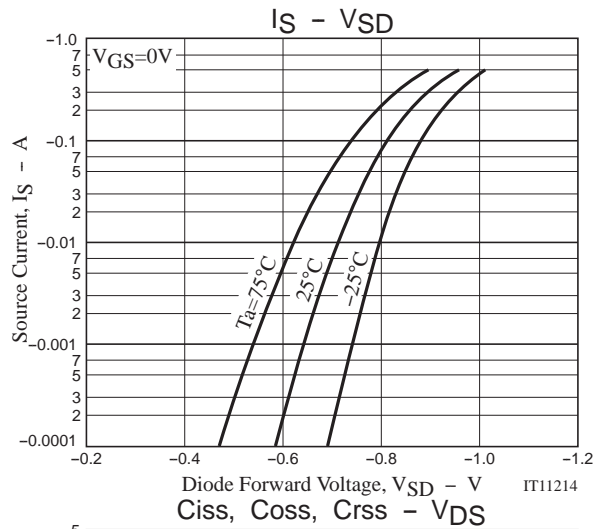
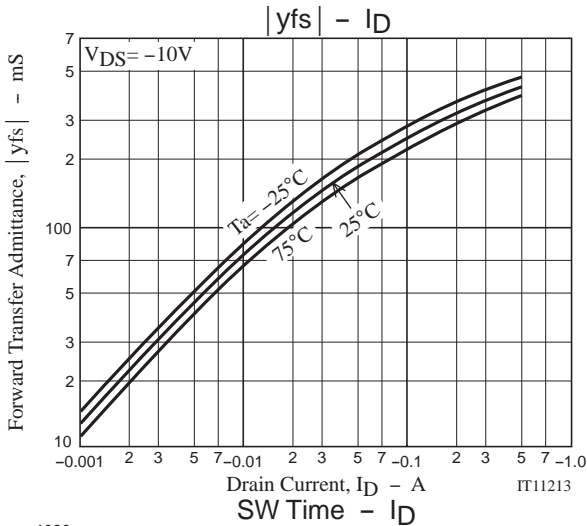
unit : mm (typ)
7027-004



Switching Time Test Circuit



3HP04S



Note on usage : Since the 3HP04S is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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