



6HP04MH

P-Channel Small Single MOSFET -60V, -370mA, 4.2Ω Single MCPH3

ON Semiconductor®

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Features

- 4V drive
- Halogen free compliance
- Protection diode in

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 _{GS} | | ±20 | V |
| Drain Current (DC) | I _D | | -370 | mA |
| Drain Current (Pulse) | I _{DP} | PW≤10μs, duty cycle≤1% | -1480 | mA |
| Allowable Power Dissipation | P _D | When mounted on ceramic substrate (900mm ² ×0.8mm) | 0.6 | W |
| Channel Temperature | T _{ch} | | 150 | °C |
| Storage Temperature | T _{stg} | | -55 to +150 | °C |

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

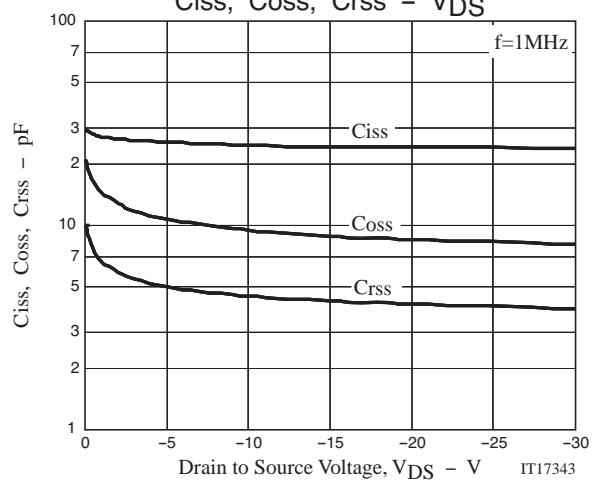
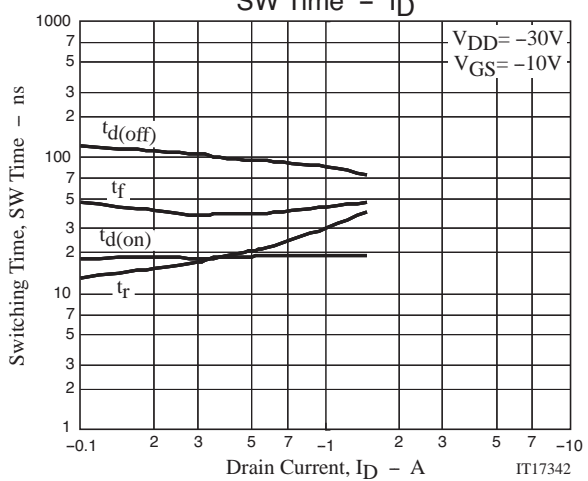
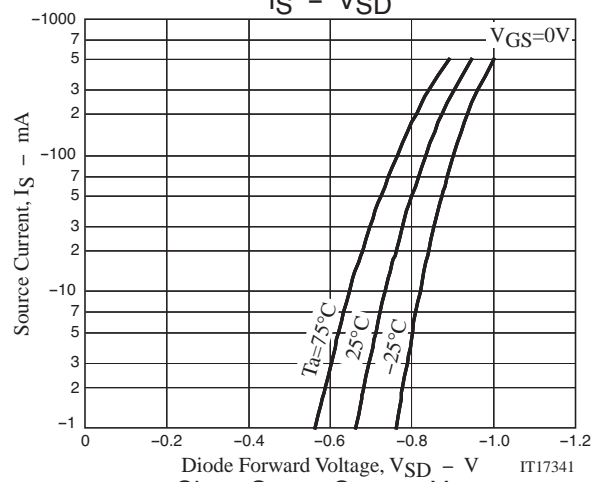
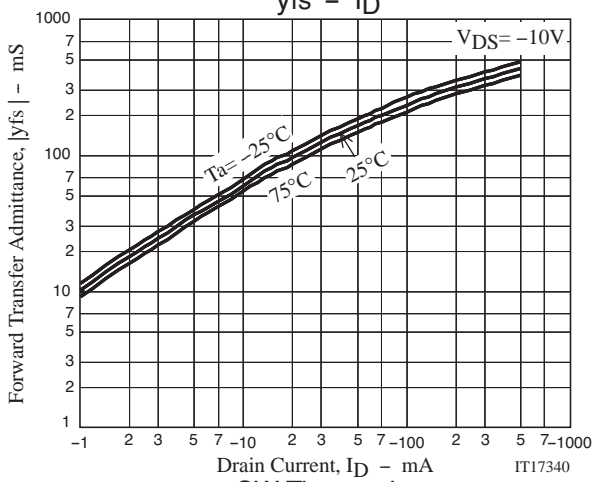
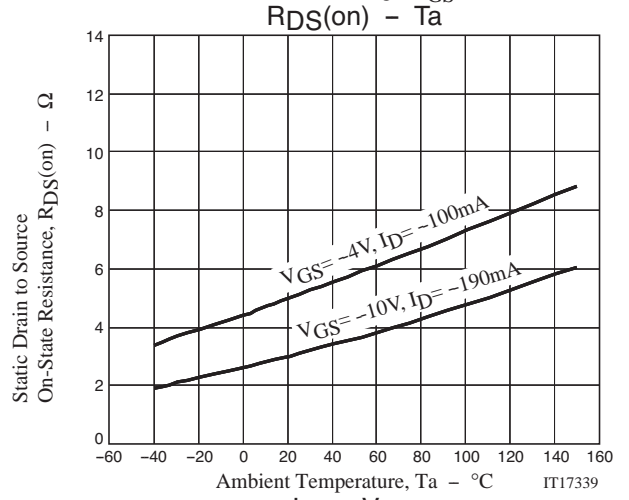
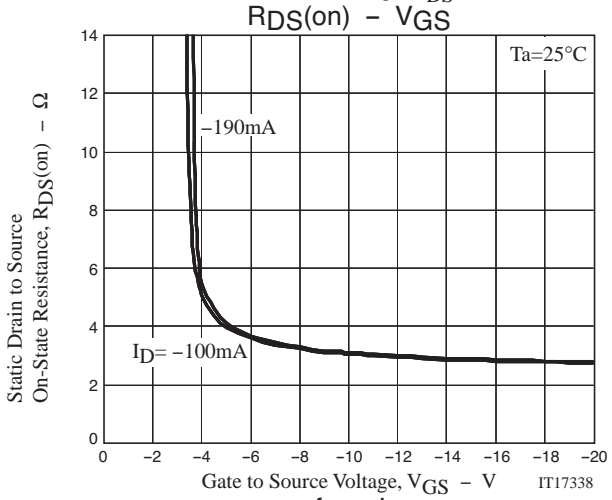
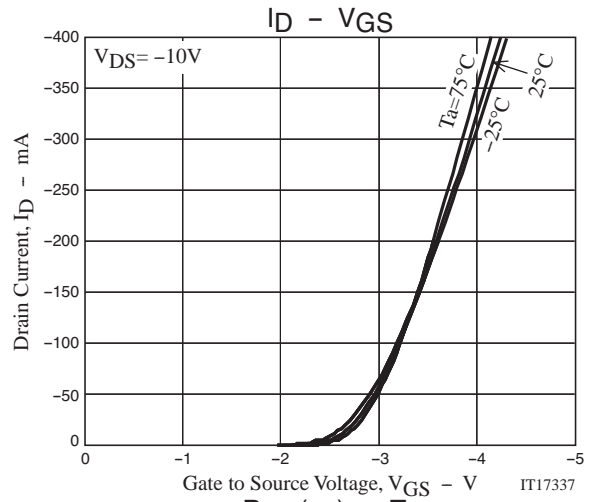
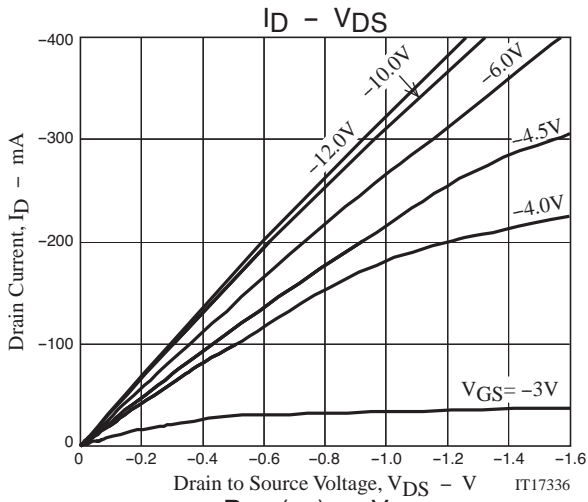
Electrical Characteristics at Ta=25°C

| 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 |
| 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 =-190mA | | 310 | | mS |
| Static Drain to Source On-State Resistance | R _{DS(on)1} | I _D =-190mA, V _{GS} =-10V | | 3.1 | 4.2 | Ω |
| | R _{DS(on)2} | I _D =-100mA, V _{GS} =-4V | | 5.1 | 7.3 | Ω |
| Input Capacitance | C _{iss} | V _{DS} =-20V, f=1MHz | | 24.1 | | pF |
| Output Capacitance | C _{oss} | | | 8.5 | | pF |
| Reverse Transfer Capacitance | C _{rss} | | | 4.1 | | pF |
| Turn-ON Delay Time | t _{d(on)} | See specified Test Circuit. | | 18.4 | | ns |
| Rise Time | t _r | | | 15.2 | | ns |
| Turn-OFF Delay Time | t _{d(off)} | | | 113 | | ns |
| Fall Time | t _f | | | 41 | | ns |
| Total Gate Charge | Q _g | V _{DS} =-30V, V _{GS} =-10V, I _D =-370mA | | 0.84 | | nC |
| Gate to Source Charge | Q _{gs} | | | 0.19 | | nC |
| Gate to Drain "Miller" Charge | Q _{gd} | | | 0.21 | | nC |
| Diode Forward Voltage | V _{SD} | I _S =-370mA, V _{GS} =0V | | -0.92 | -1.2 | V |

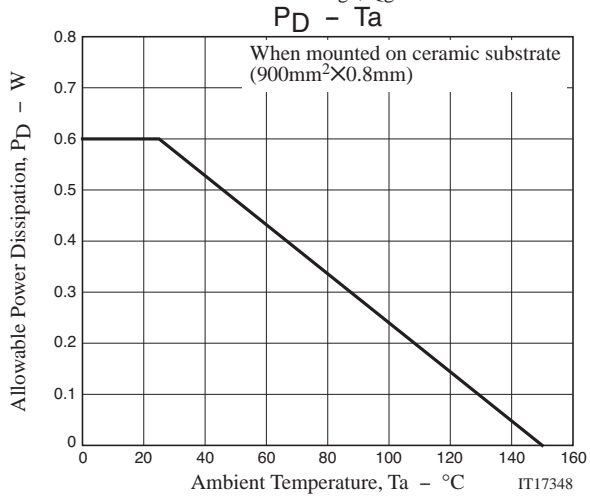
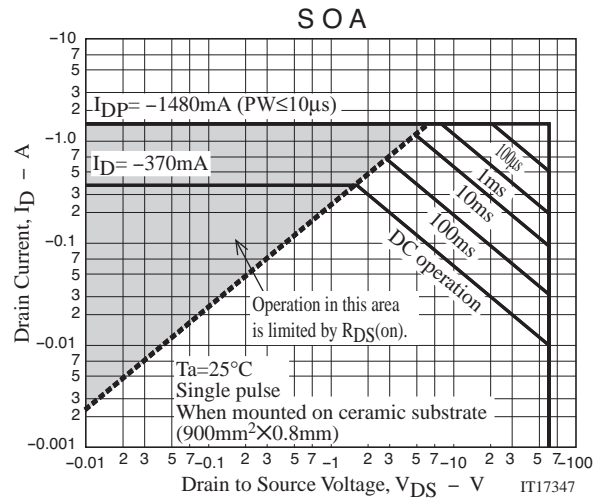
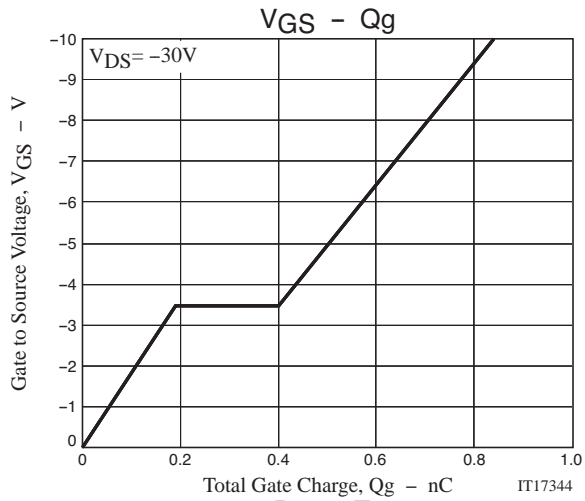
ORDERING INFORMATION

See detailed ordering and shipping information on page 4 of this data sheet.

6HP04MH



6HP04MH



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Package Dimensions

6HP04MH-TL-W

SC-70FL/MCPH3

CASE 419AQ

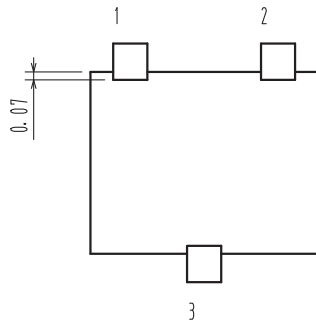
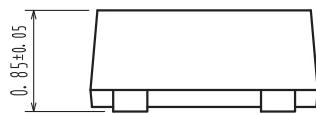
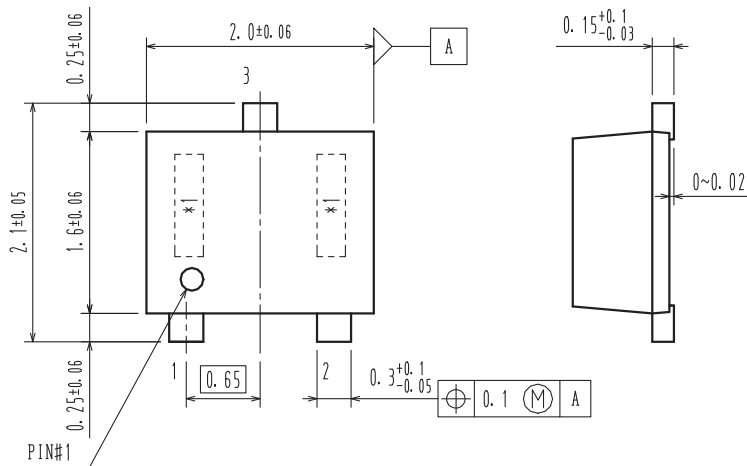
ISSUE O

Unit : mm

1: Gate

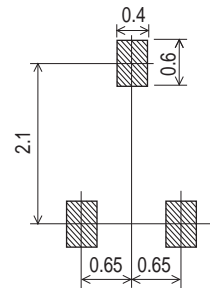
2: Source

3: Drain



*|: Lot indication

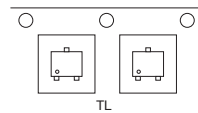
Land Pattern Example



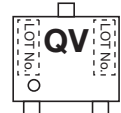
Ordering & Package Information

| Device | Package | Shipping | memo |
|--------------|-------------------------|----------------------|--------------------------------|
| 6HP04MH-TL-W | MCPH3 SC-70, SOT-323 | 3,000 pcs. / reel | Pb-Free and Halogen Free |

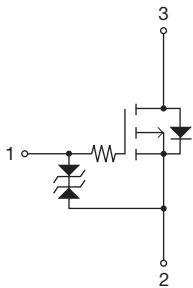
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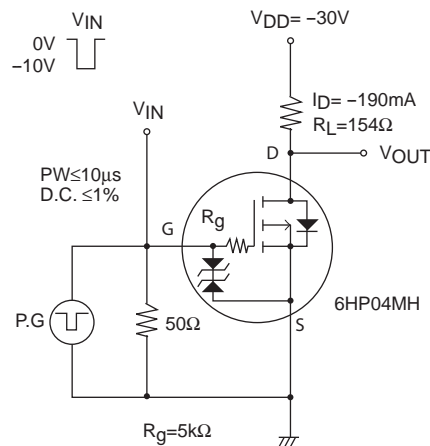
Marking



Electrical Connection



Switching Time Test Circuit



Note on usage : Since the 6HP04MH is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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