



6HP04CH

P-Channel Small Single MOSFET -60V, -370mA, 4.2Ω, Single CPH3

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 _{GSS} | | ±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 those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

Electrical Characteristics at Ta=25°C

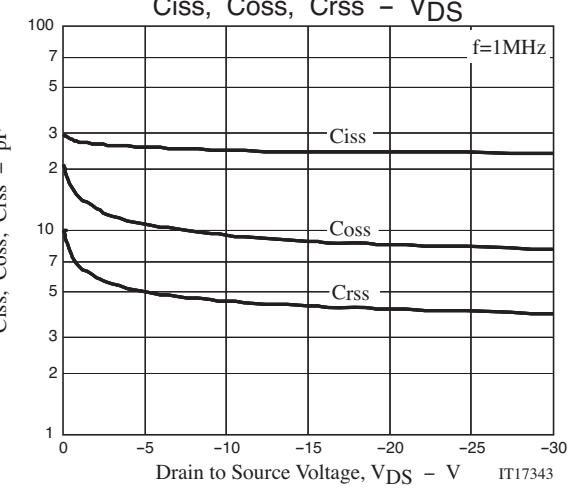
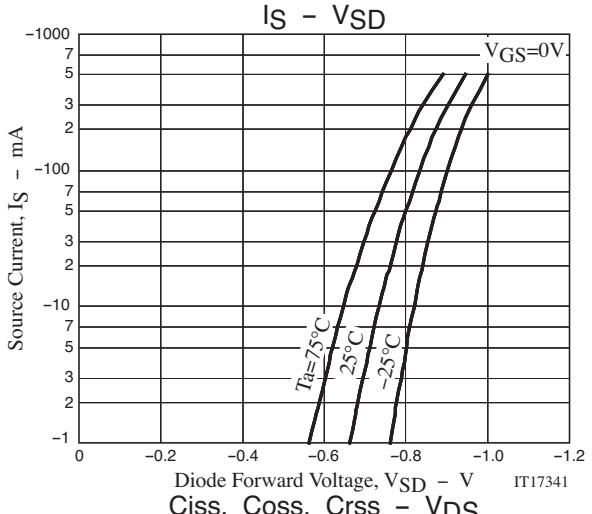
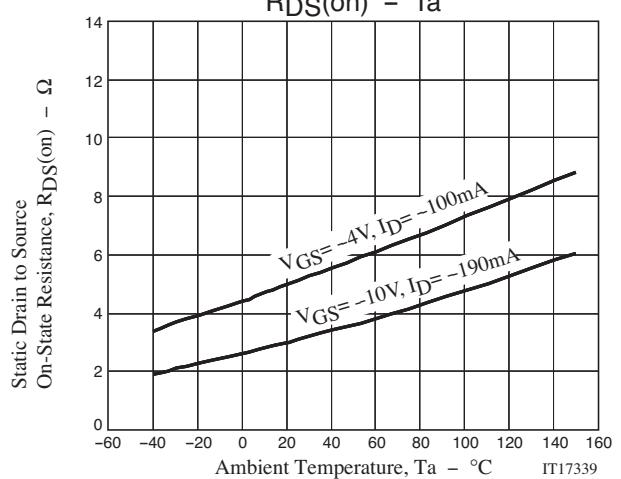
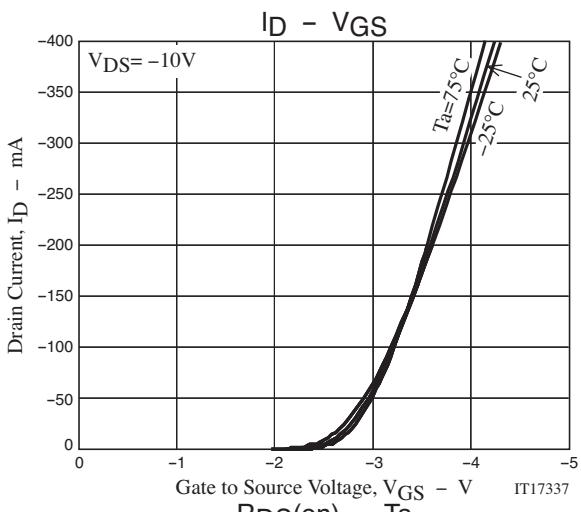
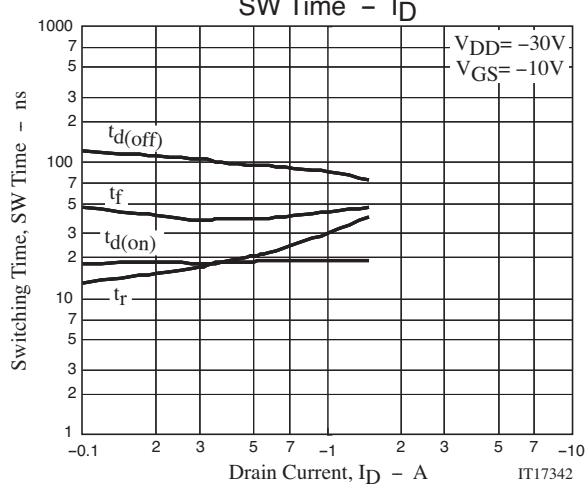
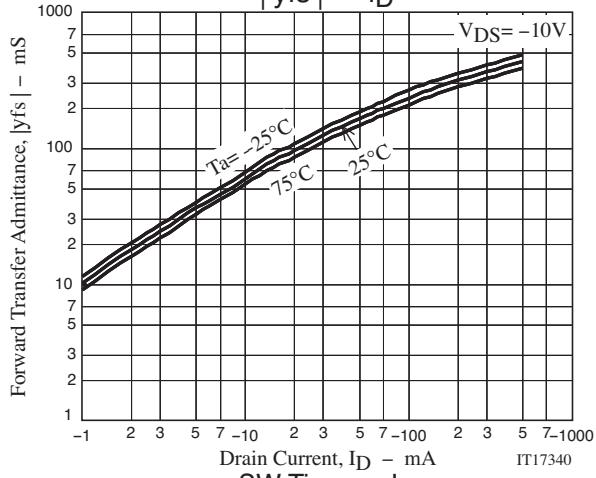
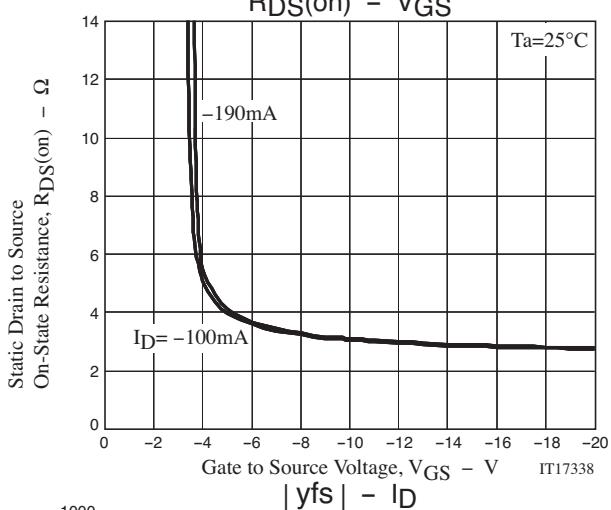
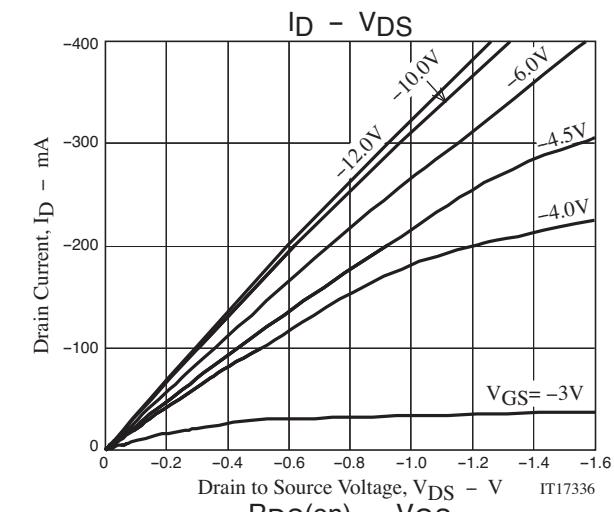
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|----------------------|---|---------|-------|------|------|
| | | | min | typ | max | |
| Drain to Source Breakdown Voltage | V _{(BR)DSS} | I _D =-1mA, V _{GS} =0V | -60 | | | V |
| Zero-Gate Voltage Drain Current | I _{DSS} | V _D =-60V, V _{GS} =0V | | | -1 | μA |
| Gate to Source Leakage Current | I _{GSS} | V _{GS} =±16V, V _D =0V | | | ±10 | μA |
| Cutoff Voltage | V _{GS(off)} | V _D =-10V, I _D =-100μA | -1.2 | | -2.6 | V |
| Forward Transfer Admittance | y _{fs} | V _D =-10V, I _D =-190mA | | 310 | | mS |
| Static Drain to Source On-State Resistance | R _{D(on)1} | I _D =-190mA, V _{GS} =-10V | | 3.1 | 4.2 | Ω |
| | R _{D(on)2} | I _D =-100mA, V _{GS} =-4V | | 5.1 | 7.3 | Ω |
| Input Capacitance | C _{iss} | V _D =-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)} | | | 18.4 | | ns |
| Rise Time | t _r | See specified Test Circuit. | | 15.2 | | ns |
| Turn-OFF Delay Time | t _{d(off)} | | | 113 | | ns |
| Fall Time | t _f | | | 41 | | ns |
| Total Gate Charge | Q _g | | | 0.84 | | nC |
| Gate to Source Charge | Q _{gs} | V _D =-30V, V _{GS} =-10V, I _D =-370mA | | 0.19 | | nC |
| Gate to Drain "Miller" Charge | Q _{gd} | | | 0.21 | | nC |
| Diode Forward Voltage | V _{SD} | | | -0.92 | -1.2 | V |

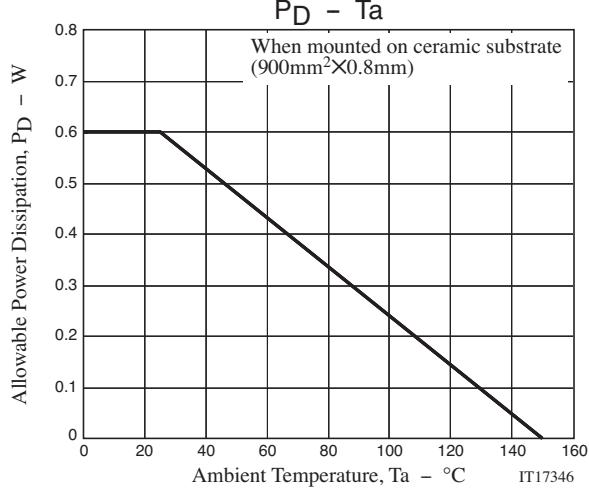
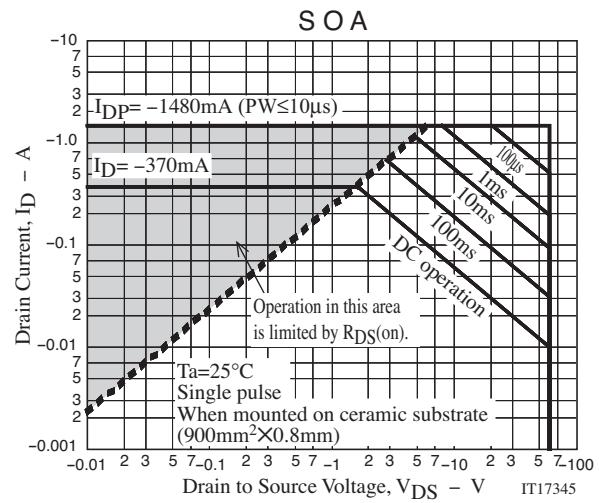
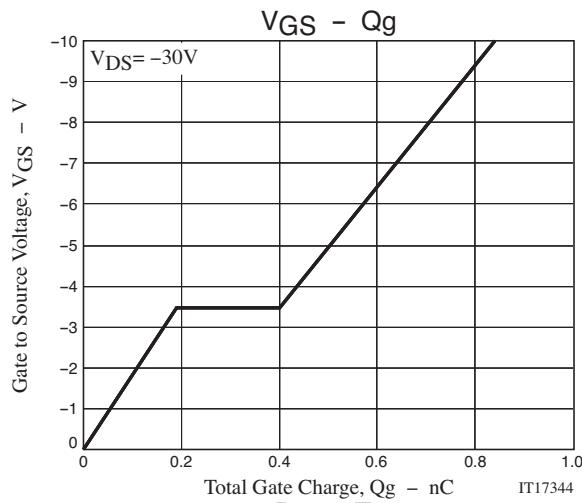
Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

ORDERING INFORMATION

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

6HP04CH





Package Dimensions

6HP04CH-TL-W

CPH3

CASE 318BA

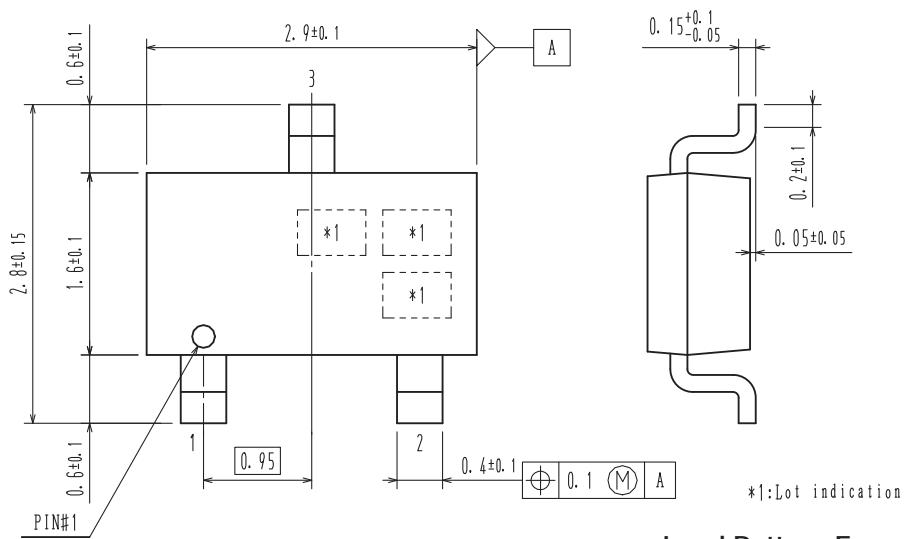
ISSUE O

Unit : mm

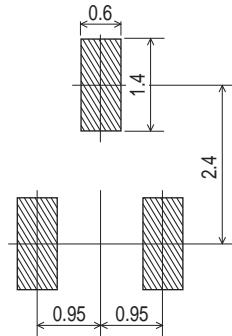
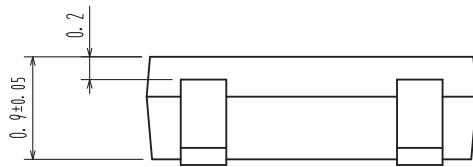
1: Gate

2: Source

3: Drain



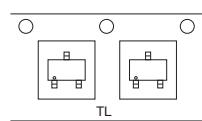
Land Pattern Example



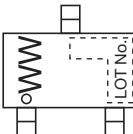
Ordering & Package Information

| Device | Package | Shipping | memo |
|--------------|-------------------------------|----------------------|--------------------------------|
| 6HP04CH-TL-W | CPH3, SC-59 SOT-23, TO-236 | 3,000 pcs. / reel | Pb-Free and Halogen Free |

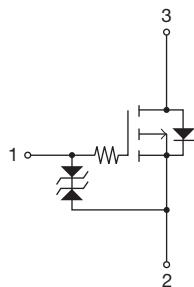
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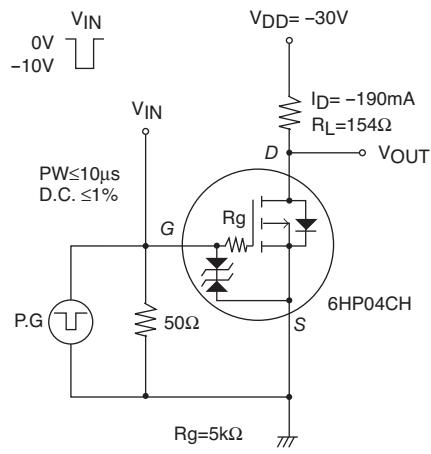
Marking



Electrical Connection



Switching Time Test Circuit



Note on usage : Since the 6HP04CH is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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