



CPH6636R

N-Channel Power MOSFET 24V, 6A, 20mΩ, Dual CPH6 Common Drain

ON Semiconductor®

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Features

- Low On-resistance
- Best suited for LiB charging and discharging switch
- With a built-in gate resistor
- Protection diode in
- 2.5V drive
- Common-drain type
- Halogen free compliance

Specifications

Absolute Maximum Ratings at Ta = 25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|------------------|--|-------------|------|
| Drain to Source Voltage | V _{DSS} | | 24 | V |
| Gate to Source Voltage | V _{GSS} | | ±12 | V |
| Drain Current (DC) | I _D | | 6 | A |
| Drain Current (Pulse) | I _{DP} | PW≤10μs, duty cycle≤1% | 36 | A |
| Allowable Power Dissipation | P _D | When mounted on ceramic substrate(900mm ² ×0.8mm) 1unit | 0.9 | W |
| Total Dissipation | P _T | When mounted on ceramic substrate(900mm ² ×0.8mm) | 1.0 | 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.

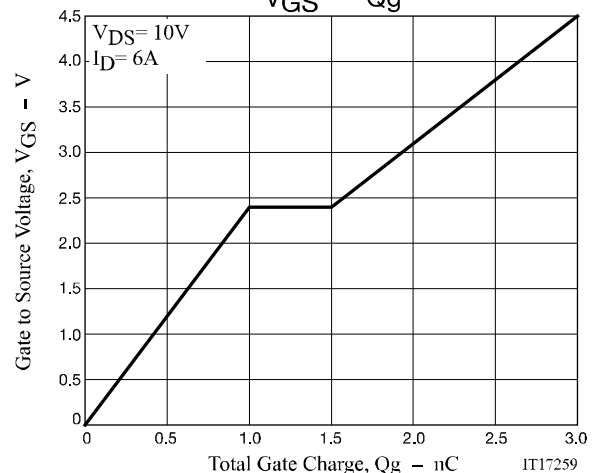
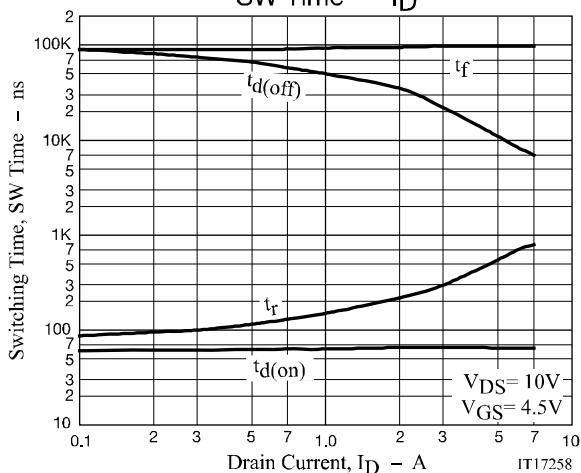
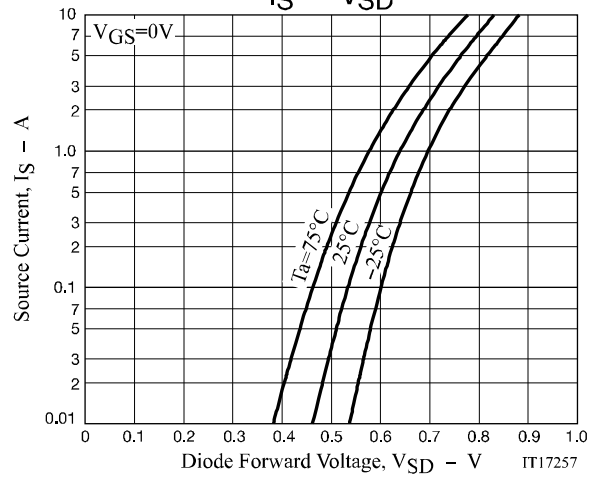
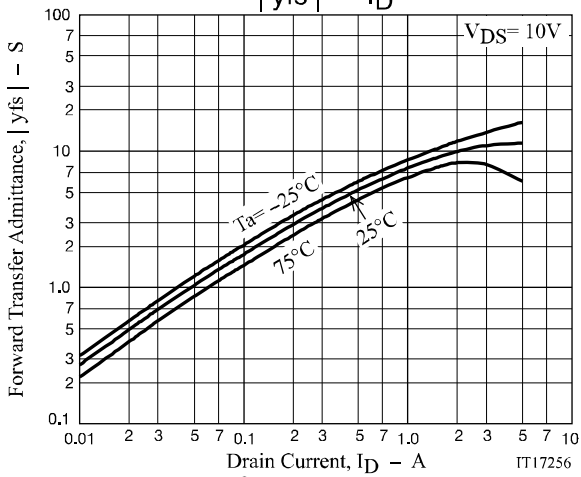
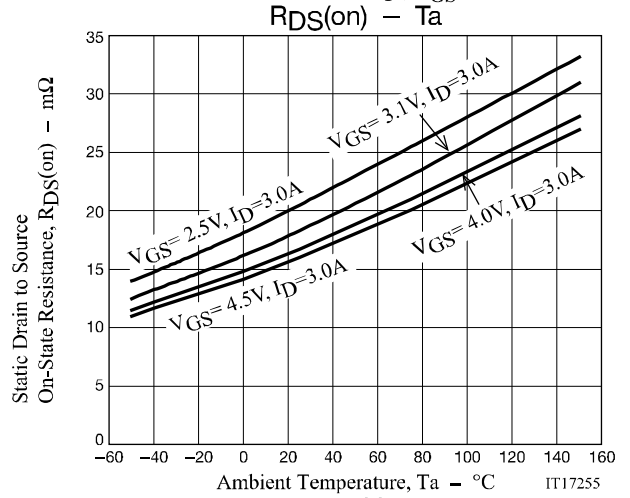
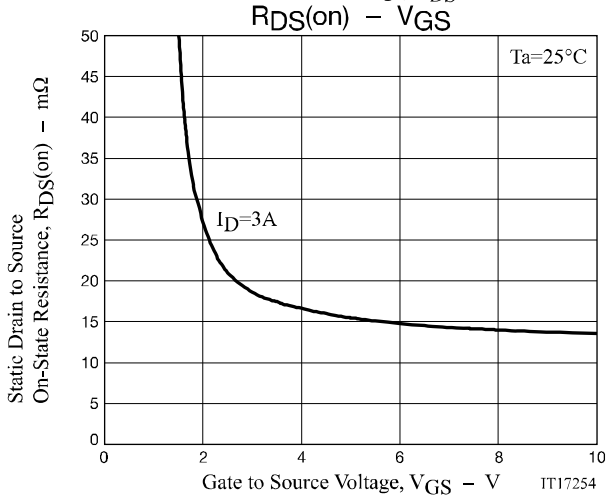
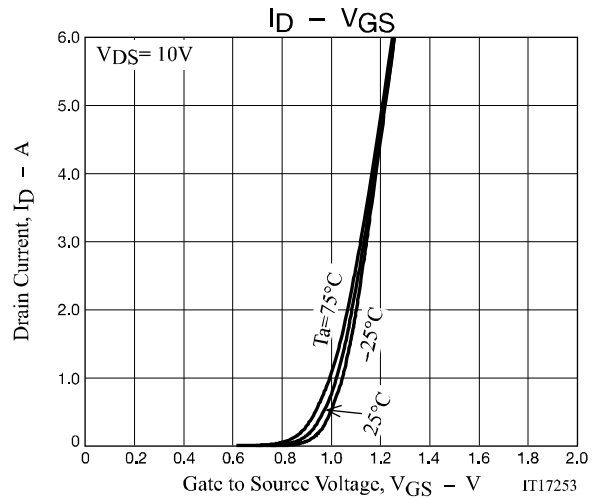
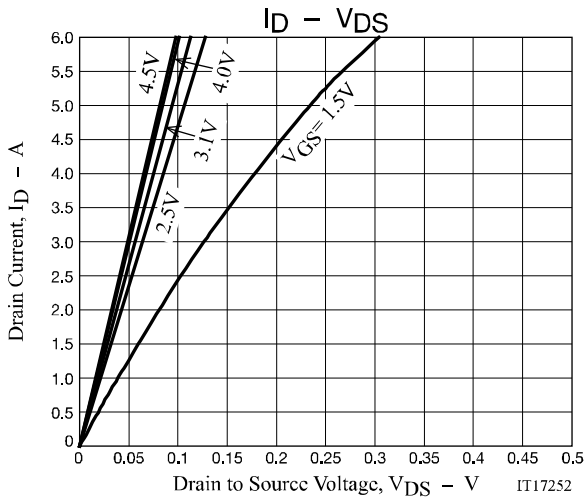
Electrical Characteristics at Ta = 25°C

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|----------------------|---|---------|-------|------|------|
| | | | min | typ | max | |
| Drain to Source Breakdown Voltage | V _{(BR)DSS} | I _D =1mA, V _{GS} =0V | 24 | | | V |
| Zero-Gate Voltage Drain Current | I _{DSS} | V _{DS} =20V, V _{GS} =0V | | | 1 | μA |
| Gate to Source Leakage Current | I _{GSS} | V _{GS} =±8V, V _{DS} =0V | | | ±1 | μA |
| Cutoff Voltage | V _{GS(off)} | V _{DS} =10V, I _D =1mA | 0.5 | | 1.3 | V |
| Forward Transfer Admittance | y _{fs} | V _{DS} =10V, I _D =3A | | 11 | | S |
| Static Drain to Source On-State Resistance | R _{DS(on)1} | I _D =3A, V _{GS} =4.5V | 12.8 | 16 | 20 | mΩ |
| | R _{DS(on)2} | I _D =3A, V _{GS} =4.0V | 13.3 | 16.7 | 21.7 | mΩ |
| | R _{DS(on)3} | I _D =3A, V _{GS} =3.1V | 14.6 | 18.3 | 25.6 | mΩ |
| | R _{DS(on)4} | I _D =3A, V _{GS} =2.5V | 16.4 | 20.5 | 28.7 | mΩ |
| Turn-ON Delay Time | t _{d(on)} | See specified Test Circuit. | | 65 | | ns |
| Rise Time | t _r | | | 300 | | ns |
| Turn-OFF Delay Time | t _{d(off)} | | | 22000 | | ns |
| Fall Time | t _f | | | 98000 | | ns |
| Total Gate Charge | Q _g | | | | 3 | nC |
| Gate to Source Charge | Q _{gs} | V _{DS} =10V, V _{GS} =4.5V, I _D =6A | | 1 | | nC |
| Gate to Drain "Miller" Charge | Q _{gd} | | | 0.5 | | nC |
| Diode Forward Voltage | V _{SD} | I _S =6A, V _{GS} =0V | | 0.78 | 1.2 | V |

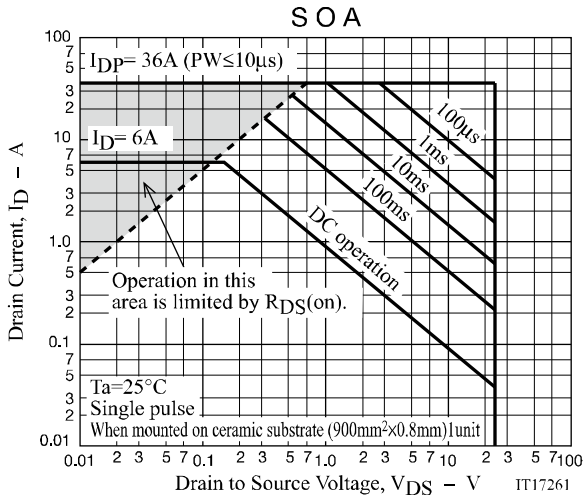
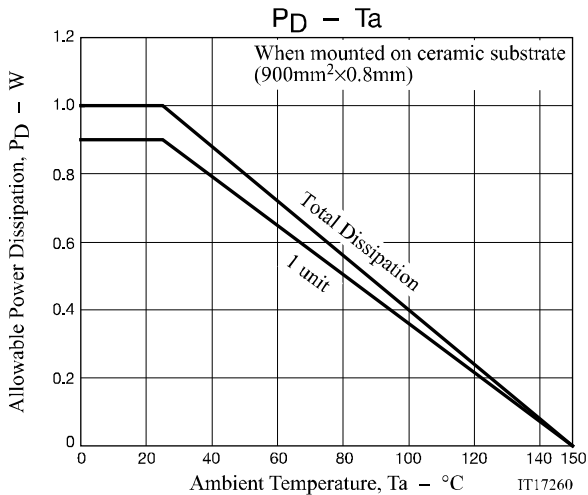
ORDERING INFORMATION

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

CPH6636R



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Package Dimensions

CPH6636R-TL-W

CPH6

CASE 318BD

ISSUE O

Unit : mm

1: Source1

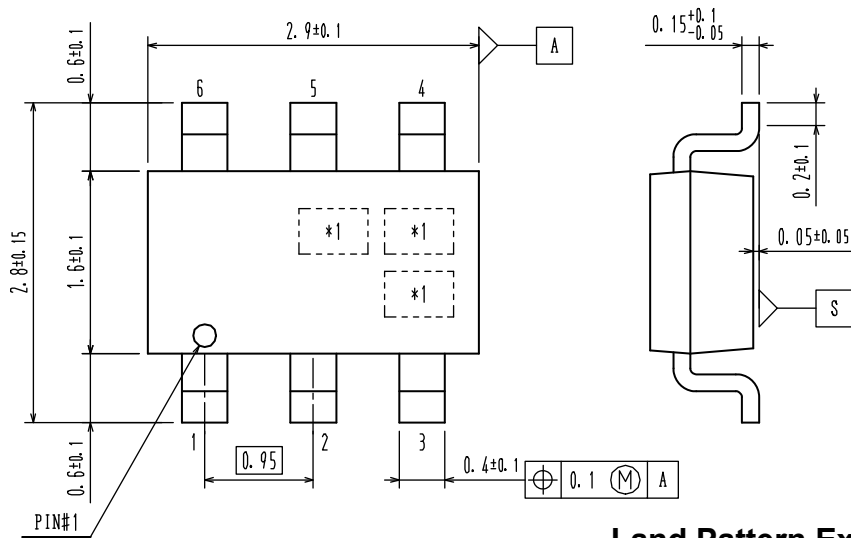
2: Drain

3: Source2

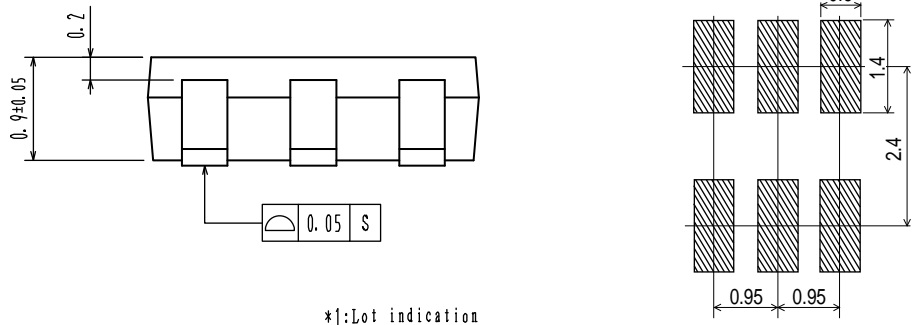
4: Gate2

5: Drain

6: Gate1



Land Pattern Example

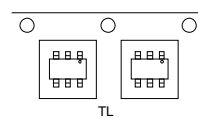


*|:Lot indication

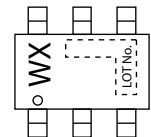
Ordering & Package Information

| Device | Package | Shipping | note |
|---------------|--------------------------------|----------------------|--------------------------------|
| CPH6636R-TL-W | CPH6, SC-74 SOT-26, SOT-457 | 3,000 pcs. / reel | Pb-Free And Halogen Free |

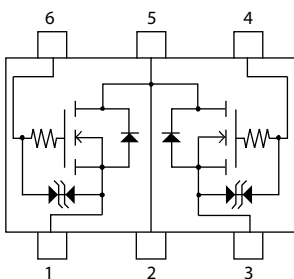
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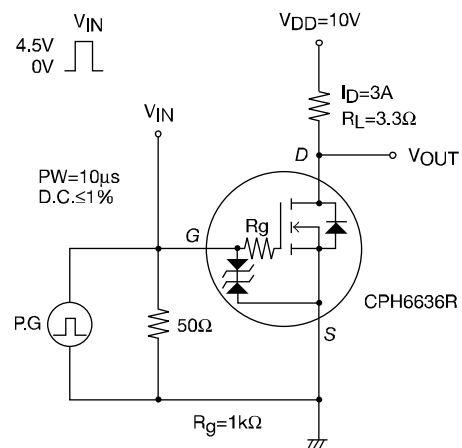
Marking



Electrical Connection



Switching Time Test Circuit



Note on usage : Since the CPH6636R is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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