



CPH3448 — N-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

- 1.8V drive
- Halogen free compliance

Specifications

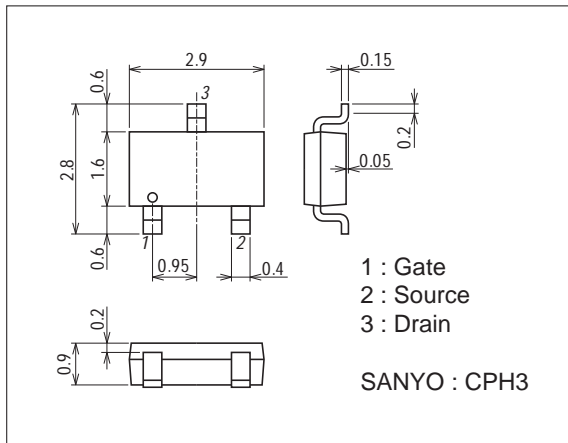
Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|------------------|---|-------------|------|
| Drain-to-Source Voltage | V _{DSS} | | 30 | V |
| Gate-to-Source Voltage | V _{GSS} | | ±12 | V |
| Drain Current (DC) | I _D | | 4 | A |
| Drain Current (Pulse) | I _{DP} | PW≤10μs, duty cycle≤1% | 16 | A |
| Allowable Power Dissipation | P _D | 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 |

Package Dimensions

unit : mm (typ)

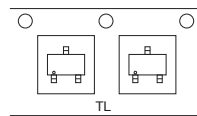
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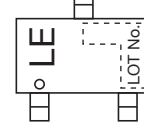
Product & Package Information

- Package : CPH3
- JEITA, JEDEC : SC-96, SC-95, SOT346, SOT457
- Minimum Packing Quantity : 3,000 pcs./reel

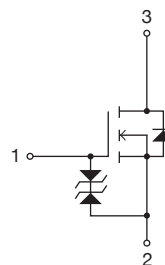
Packing Type: TL



Marking



Electrical Connection

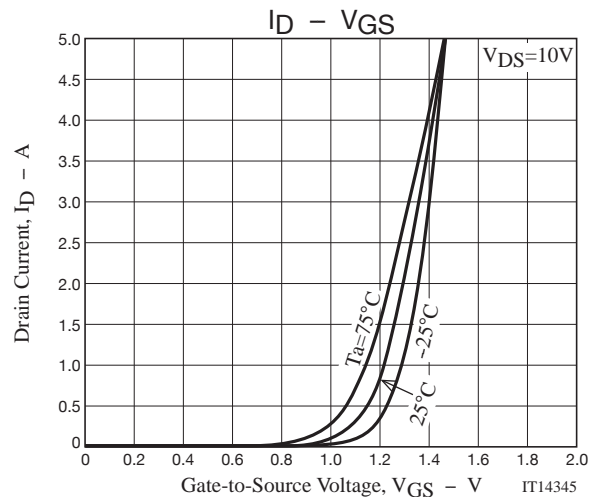
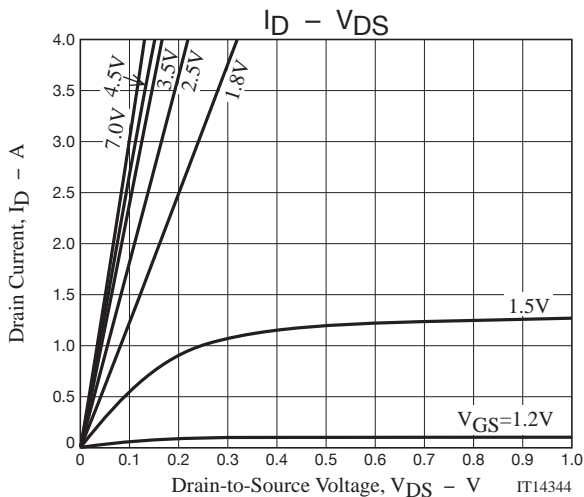
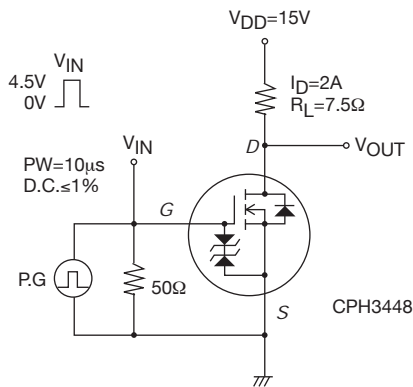


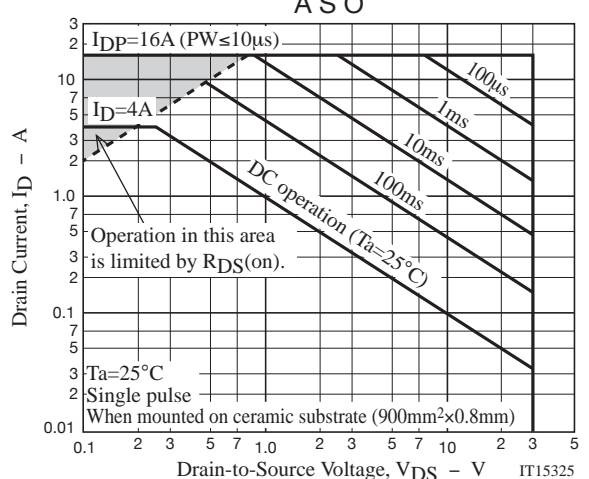
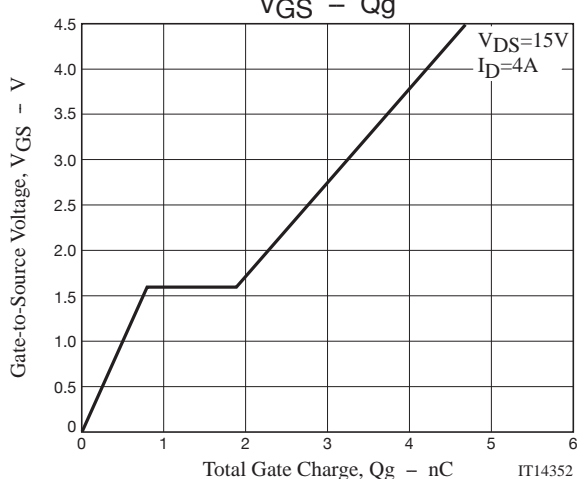
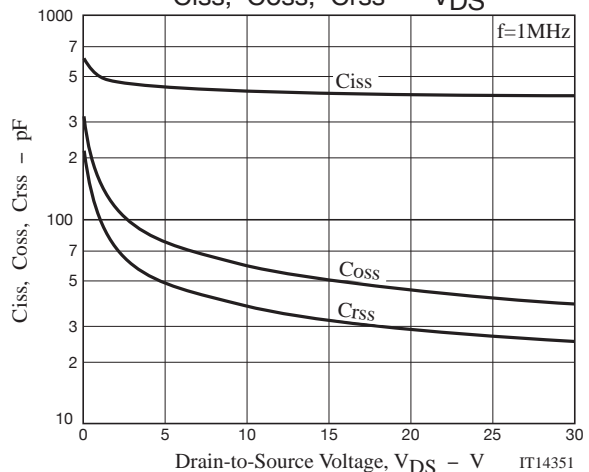
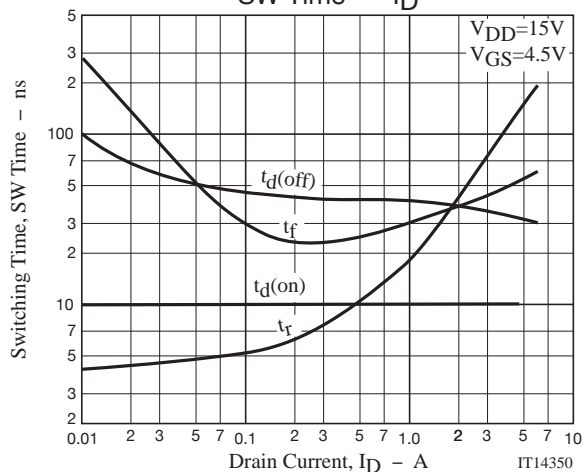
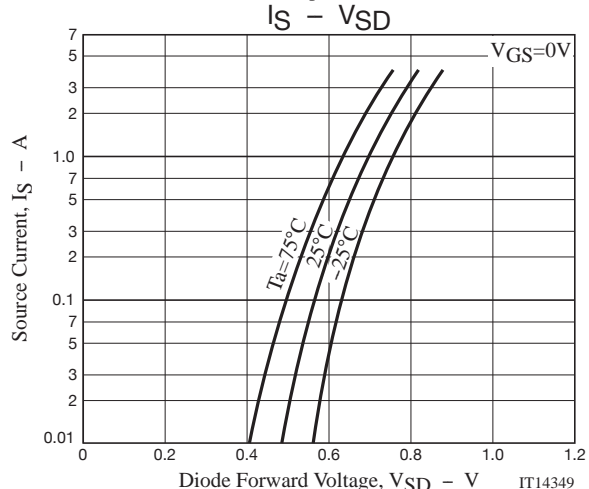
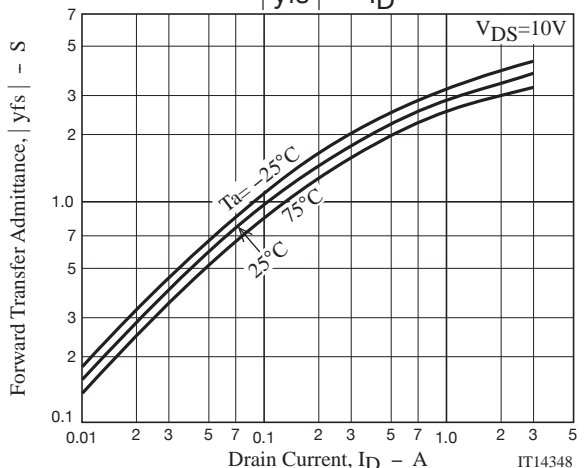
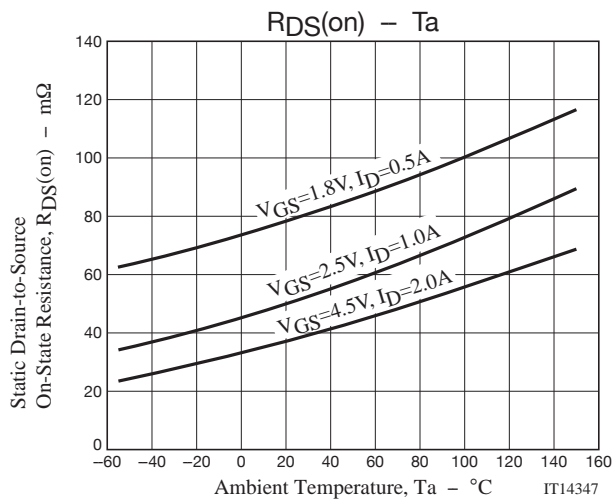
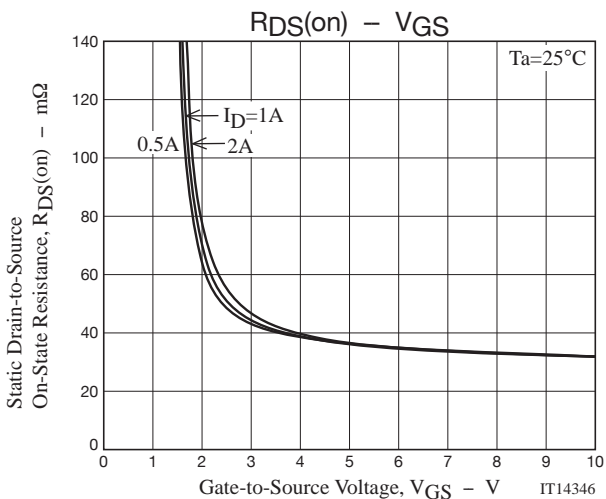
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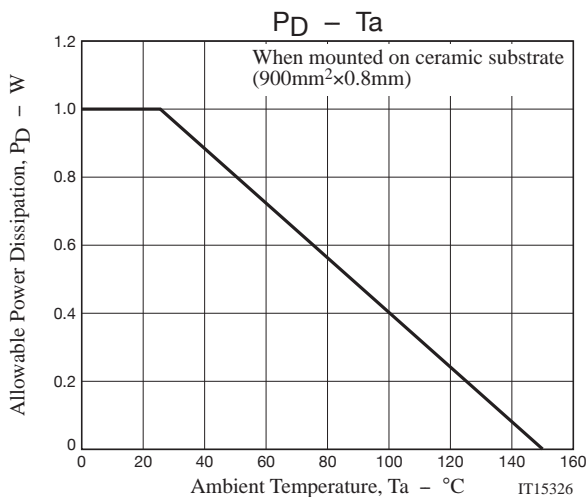
Electrical Characteristics at $T_a=25^\circ\text{C}$

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|---------------|--|---------|------|----------|------------------|
| | | | min | typ | max | |
| Drain-to-Source Breakdown Voltage | $V_{(BR)DSS}$ | $I_D=1\text{mA}, V_{GS}=0\text{V}$ | 30 | | | V |
| Zero-Gate Voltage Drain Current | I_{DSS} | $V_{DS}=30\text{V}, V_{GS}=0\text{V}$ | | | 1 | μA |
| Gate-to-Source Leakage Current | I_{GSS} | $V_{GS}=\pm 8\text{V}, V_{DS}=0\text{V}$ | | | ± 10 | μA |
| Cutoff Voltage | $V_{GS(off)}$ | $V_{DS}=10\text{V}, I_D=1\text{mA}$ | 0.4 | | 1.3 | V |
| Forward Transfer Admittance | $ y_{fs} $ | $V_{DS}=10\text{V}, I_D=2\text{A}$ | | 3.4 | | S |
| Static Drain-to-Source On-State Resistance | $R_{DS(on)1}$ | $I_D=2\text{A}, V_{GS}=4.5\text{V}$ | | 38 | 50 | $\text{m}\Omega$ |
| | $R_{DS(on)2}$ | $I_D=1\text{A}, V_{GS}=2.5\text{V}$ | | 51 | 72 | $\text{m}\Omega$ |
| | $R_{DS(on)3}$ | $I_D=0.5\text{A}, V_{GS}=1.8\text{V}$ | | 80 | 130 | $\text{m}\Omega$ |
| Input Capacitance | C_{iss} | $V_{DS}=10\text{V}, f=1\text{MHz}$ | | 430 | | pF |
| Output Capacitance | C_{oss} | $V_{DS}=10\text{V}, f=1\text{MHz}$ | | 59 | | pF |
| Reverse Transfer Capacitance | C_{rss} | $V_{DS}=10\text{V}, f=1\text{MHz}$ | | 38 | | pF |
| Turn-ON Delay Time | $t_{d(on)}$ | See specified Test Circuit. | | 10 | | ns |
| Rise Time | t_r | See specified Test Circuit. | | 41 | | ns |
| Turn-OFF Delay Time | $t_{d(off)}$ | See specified Test Circuit. | | 36 | | ns |
| Fall Time | t_f | See specified Test Circuit. | | 37 | | ns |
| Total Gate Charge | Q_g | $V_{DS}=15\text{V}, V_{GS}=4.5\text{V}, I_D=4\text{A}$ | | 4.7 | | nC |
| Gate-to-Source Charge | Q_{gs} | $V_{DS}=15\text{V}, V_{GS}=4.5\text{V}, I_D=4\text{A}$ | | 0.8 | | nC |
| Gate-to-Drain "Miller" Charge | Q_{gd} | $V_{DS}=15\text{V}, V_{GS}=4.5\text{V}, I_D=4\text{A}$ | | 1.1 | | nC |
| Diode Forward Voltage | V_{SD} | $I_S=4\text{A}, V_{GS}=0\text{V}$ | | 0.82 | 1.2 | V |

Switching Time Test Circuit







Note on usage : Since the CPH3448 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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