Ordering number : ENN8159

ON Semiconductor®

ON Semiconductor
DATA SHEET

P-Channel Silicon MOSFET

# CPH3337 — General-Purpose Switching Device Applications

## Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 2.5V drive.

## Specifications

### Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|---|---|---|---|---|
| Drain-to-Source Voltage | $V_{DSS}$ | | −20 | V |
| Gate-to-Source Voltage | $V_{GSS}$ | | ±10 | V |
| Drain Current (DC) | $I_D$ | | −3.5 | A |
| Drain Current (Pulse) | $I_{DP}$ | PW≤10μs, duty cycle≤1% | −14 | A |
| Allowable Power Dissipation | $P_D$ | Mounted on a ceramic board (900mm²×0.8mm) | 1.0 | W |
| Channel Temperature | Tch | | 150 | °C |
| Storage Temperature | Tstg | | −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, $V_{GS}$=0 | −20 | | | V |
| Zero-Gate Voltage Drain Current | $I_{DSS}$ | $V_{DS}$=−20V, $V_{GS}$=0 | | | −1 | μA |
| Gate-to-Source Leakage Current | $I_{GSS}$ | $V_{GS}$=±8V, $V_{DS}$=0 | | | ±10 | μA |
| Cutoff Voltage | $V_{GS}$(off) | $V_{DS}$=−10V, $I_D$=−1mA | −0.4 | | −1.4 | V |
| Forward Transfer Admittance | $\|yfs\|$ | $V_{DS}$=−10V, $I_D$=−2A | 3.8 | 6.3 | | S |
| Static Drain-to-Source On-State Resistance | $R_{DS}$(on)1 | $I_D$=−2A, $V_{GS}$=−4.5V | | 53 | 74 | mΩ |
| | $R_{DS}$(on)2 | $I_D$=−2A, $V_{GS}$=−4V | | 55 | 77 | mΩ |
| | $R_{DS}$(on)3 | $I_D$=−1A, $V_{GS}$=−2.5V | | 81 | 113 | mΩ |
| Input Capacitance | Ciss | $V_{DS}$=−10V, f=1MHz | | 903 | | pF |
| Output Capacitance | Coss | $V_{DS}$=−10V, f=1MHz | | 126 | | pF |
| Reverse Transfer Capacitance | Crss | $V_{DS}$=−10V, f=1MHz | | 115 | | pF |
| Turn-ON Delay Time | $t_d$(on) | See specified Test Circuit. | | 16 | | ns |
| Rise Time | $t_r$ | See specified Test Circuit. | | 54 | | ns |
| Turn-OFF Delay Time | $t_d$(off) | See specified Test Circuit. | | 107 | | ns |
| Fall Time | $t_f$ | See specified Test Circuit. | | 82 | | ns |

Marking : YM

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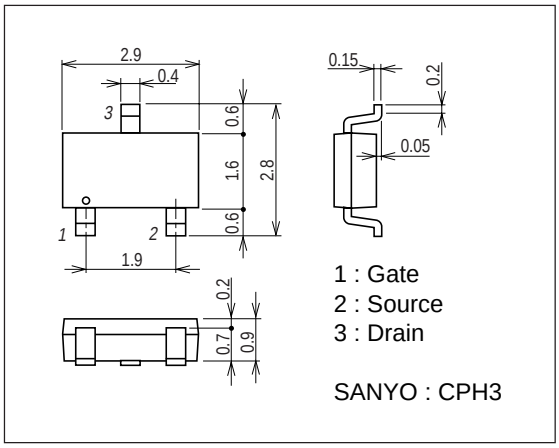
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---|---|---|---|---|---|
| | | | min | typ | max | |
| Total Gate Charge | Qg | $V_{DS}$=–10V, $V_{GS}$=–4V, $I_D$=–3.5A | | 9.3 | | nC |
| Gate-to-Source Charge | Qgs | $V_{DS}$=–10V, $V_{GS}$=–4V, $I_D$=–3.5A | | 2.5 | | nC |
| Gate-to-Drain “Miller” Charge | Qgd | $V_{DS}$=–10V, $V_{GS}$=–4V, $I_D$=–3.5A | | 1.9 | | nC |
| Diode Forward Voltage | $V_{SD}$ | $I_S$=–3.5A, $V_{GS}$=0 | | –0.85 | –1.5 | V |

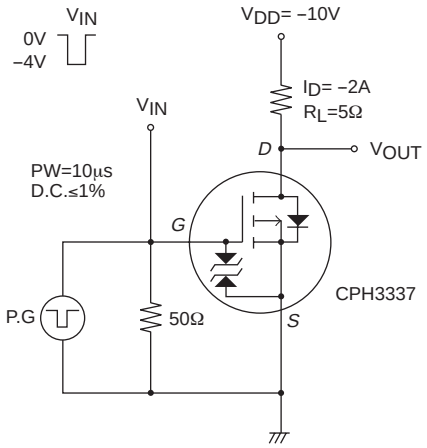
## Package Dimensions

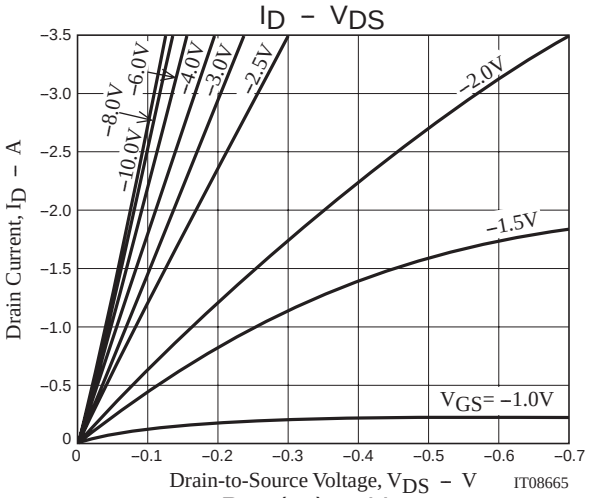
unit : mm

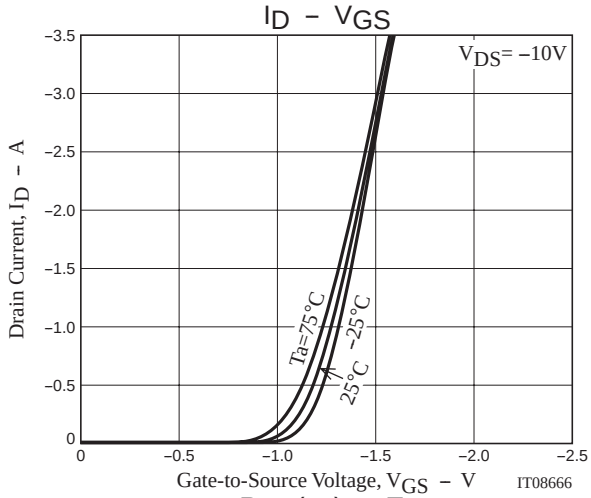
2152A

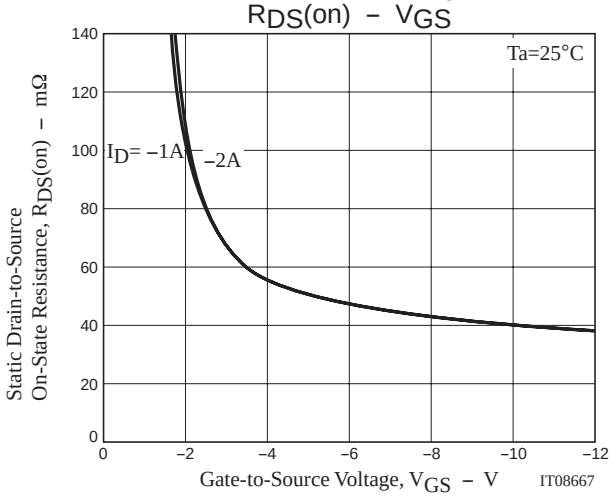


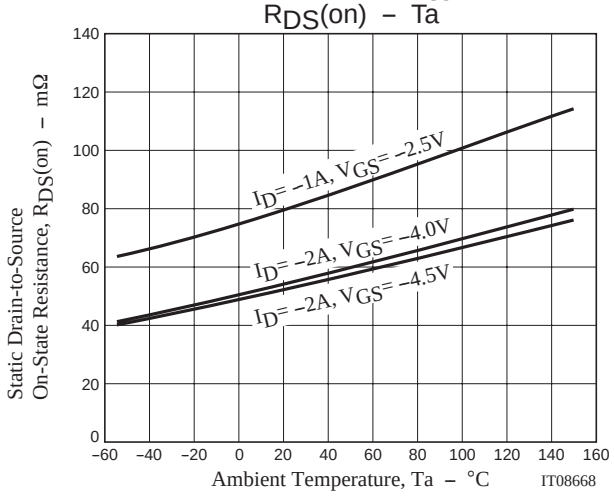

## Switching Time Test Circuit

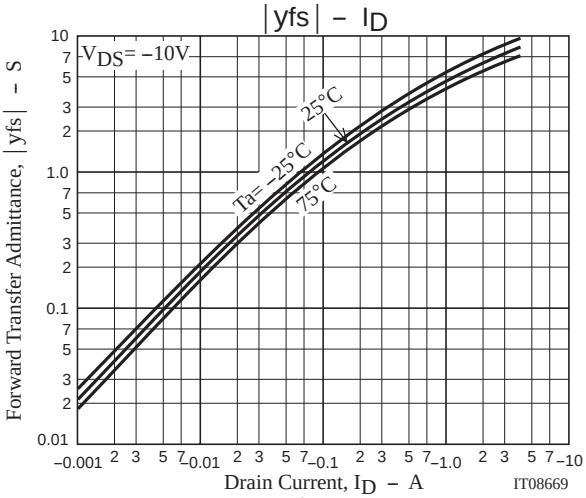


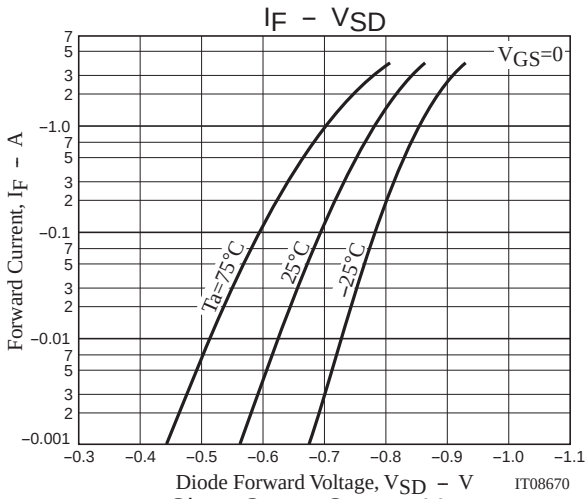



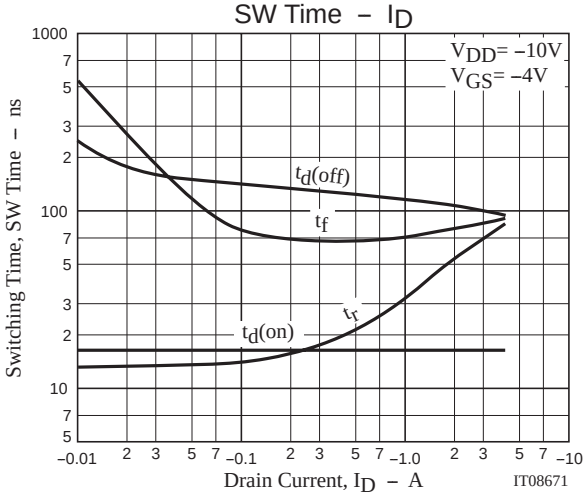



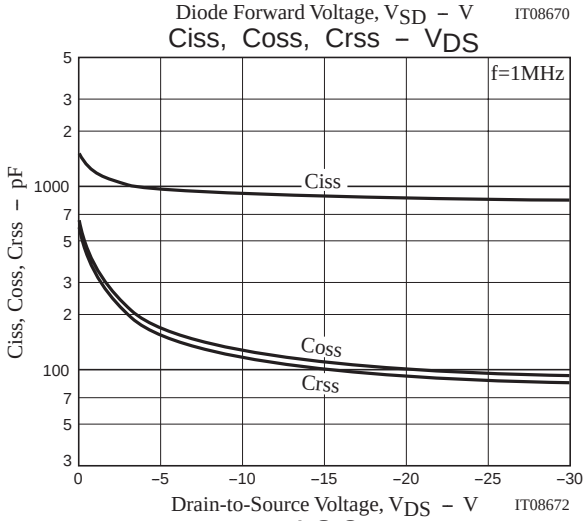



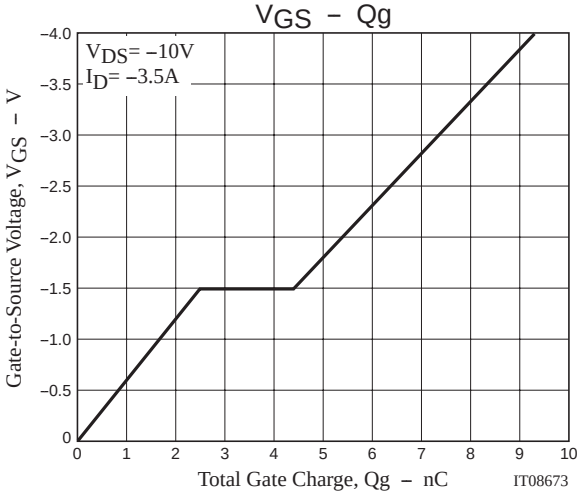



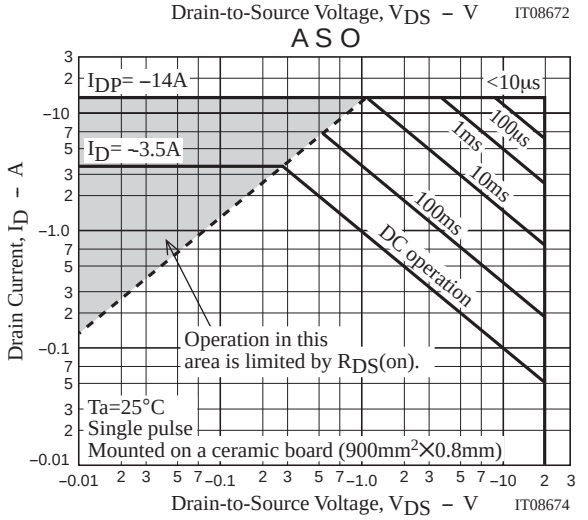


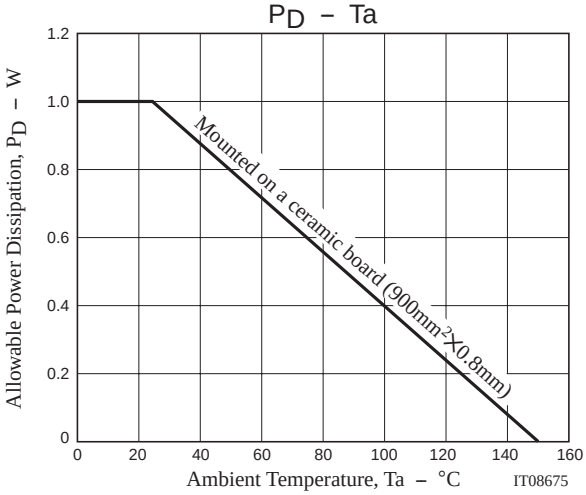



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