



ON Semiconductor®

ON Semiconductor
DATA SHEET**CPH3327** — P-Channel Silicon MOSFET
General-Purpose Switching Device
Applications**Features**

- Low ON-resistance.
- Ultrahigh-speed switching.
- 4V drive.

Specifications**Absolute Maximum Ratings** at $T_a=25^\circ\text{C}$

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|-----------|--|-------------|------|
| Drain-to-Source Voltage | V_{DS} | | -100 | V |
| Gate-to-Source Voltage | V_{GS} | | ± 20 | V |
| Drain Current (DC) | I_D | | -0.6 | A |
| Drain Current (Pulse) | I_{DP} | $PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$ | -2.4 | A |
| Allowable Power Dissipation | P_D | Mounted on a ceramic board (900mm ² ×0.8mm) | 1 | W |
| Channel Temperature | T_{ch} | | 150 | °C |
| Storage Temperature | T_{stg} | | -55 to +150 | °C |

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

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|---------------|--|---------|-----|----------|---------------|
| | | | min | typ | max | |
| Drain-to-Source Breakdown Voltage | $V_{(BR)DSS}$ | $I_D=-1\text{mA}$, $V_{GS}=0$ | -100 | | | V |
| Zero-Gate Voltage Drain Current | I_{DSS} | $V_{DS}=-100\text{V}$, $V_{GS}=0$ | | | -1 | μA |
| Gate-to-Source Leakage Current | I_{GSS} | $V_{GS}=\pm 16\text{V}$, $V_{DS}=0$ | | | ± 10 | μA |
| Cutoff Voltage | $V_{GS(off)}$ | $V_{DS}=-10\text{V}$, $I_D=-1\text{mA}$ | -1.2 | | -2.6 | V |
| Forward Transfer Admittance | $ y_{fs} $ | $V_{DS}=-10\text{V}$, $I_D=-300\text{mA}$ | 0.5 | 1.0 | | S |
| Static Drain-to-Source On-State Resistance | $R_{DS(on)1}$ | $I_D=-300\text{mA}$, $V_{GS}=-10\text{V}$ | | 1.1 | 1.45 | Ω |
| | $R_{DS(on)2}$ | $I_D=-300\text{mA}$, $V_{GS}=-4\text{V}$ | | 1.2 | 1.7 | Ω |
| Input Capacitance | C_{iss} | $V_{DS}=-20\text{V}$, $f=1\text{MHz}$ | | 245 | | pF |
| Output Capacitance | C_{oss} | $V_{DS}=-20\text{V}$, $f=1\text{MHz}$ | | 16 | | pF |
| Reverse Transfer Capacitance | C_{rss} | $V_{DS}=-20\text{V}$, $f=1\text{MHz}$ | | 13 | | pF |
| Turn-ON Delay Time | $t_{d(on)}$ | See specified Test Circuit. | | 8.5 | | ns |
| Rise Time | t_r | See specified Test Circuit. | | 2.7 | | ns |
| Turn-OFF Delay Time | $t_{d(off)}$ | See specified Test Circuit. | | 36 | | ns |
| Fall Time | t_f | See specified Test Circuit. | | 16 | | ns |

Marking : YC

Continued on next page.

CPH3327

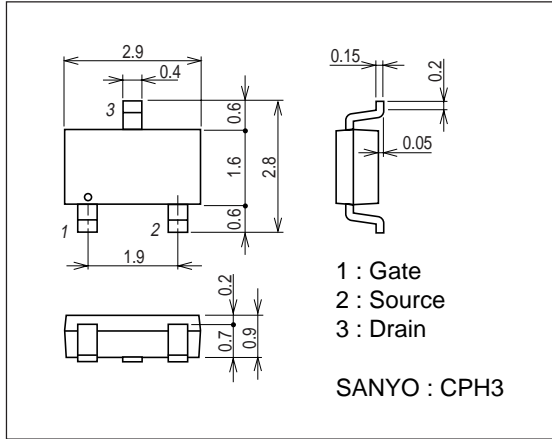
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| Parameter | Symbol | Conditions | Ratings | | | Unit |
|-------------------------------|-----------------|---|---------|-------|------|------|
| | | | min | typ | max | |
| Total Gate Charge | Qg | V _{DS} =-50V, V _{GS} =-10V, I _D =-0.6A | | 7.0 | | nC |
| Gate-to-Source Charge | Qgs | V _{DS} =-50V, V _{GS} =-10V, I _D =-0.6A | | 1.0 | | nC |
| Gate-to-Drain "Miller" Charge | Qgd | V _{DS} =-50V, V _{GS} =-10V, I _D =-0.6A | | 1.0 | | nC |
| Diode Forward Voltage | V _{SD} | I _S =-0.6A, V _{GS} =0 | | -0.85 | -1.2 | V |

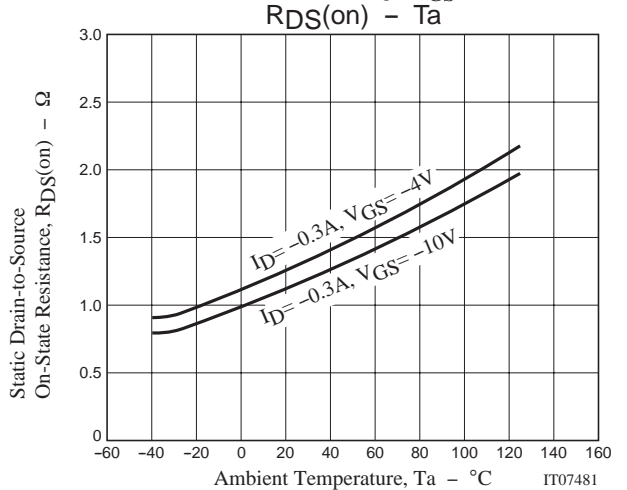
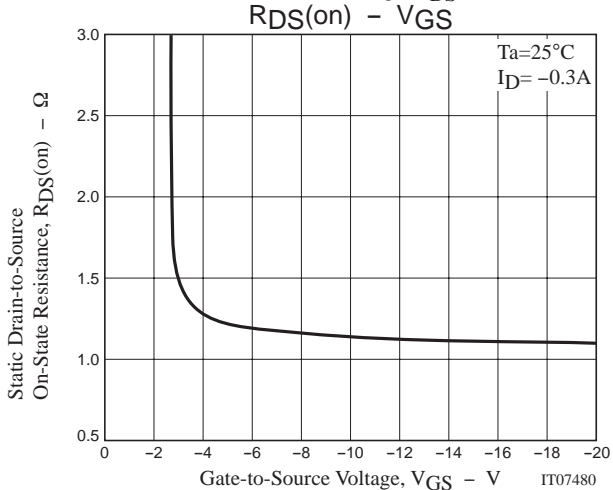
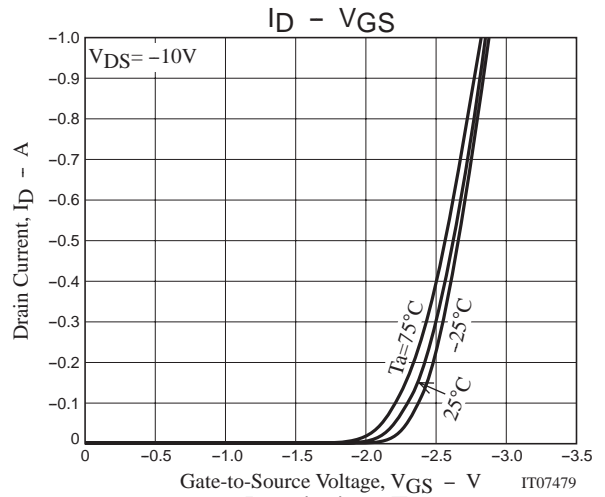
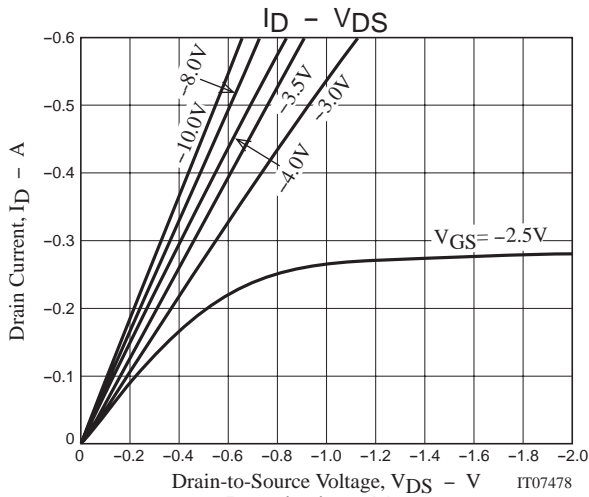
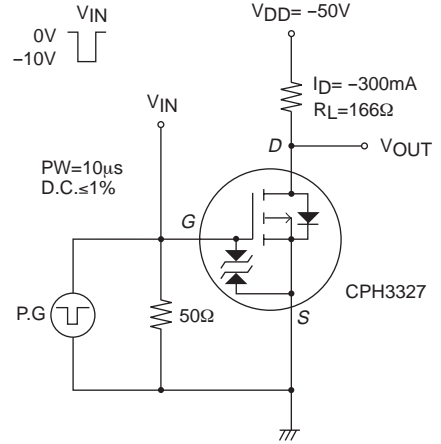
Package Dimensions

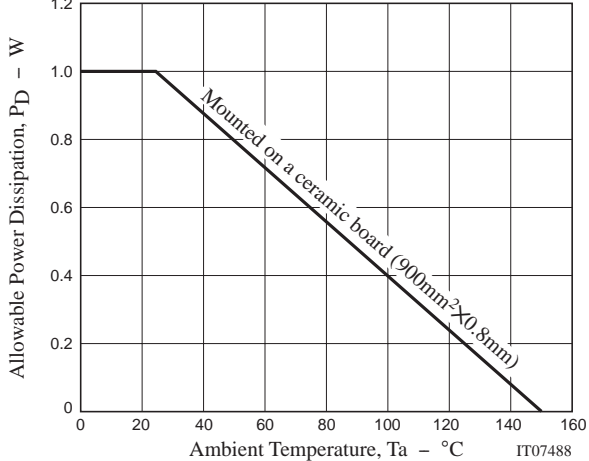
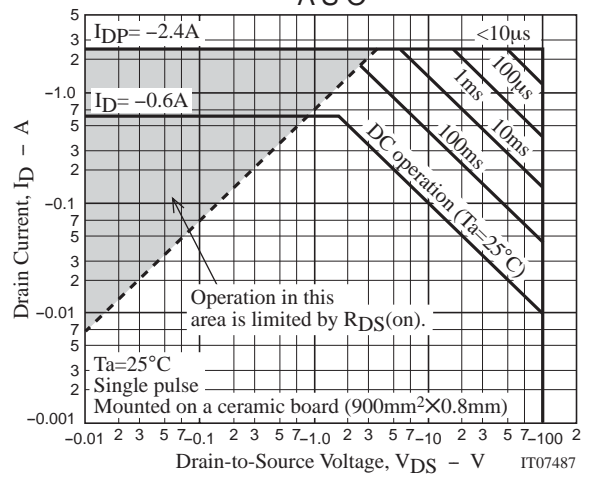
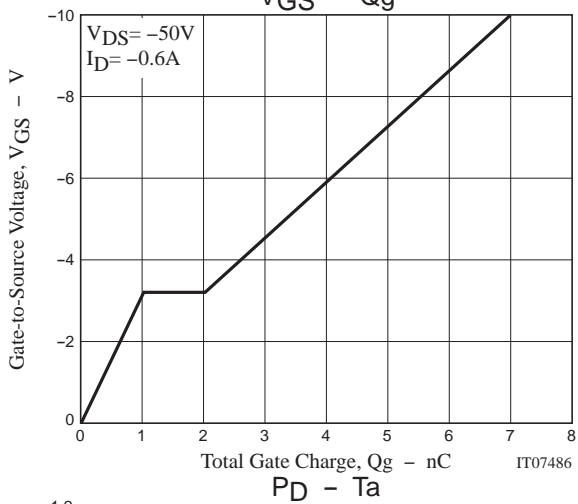
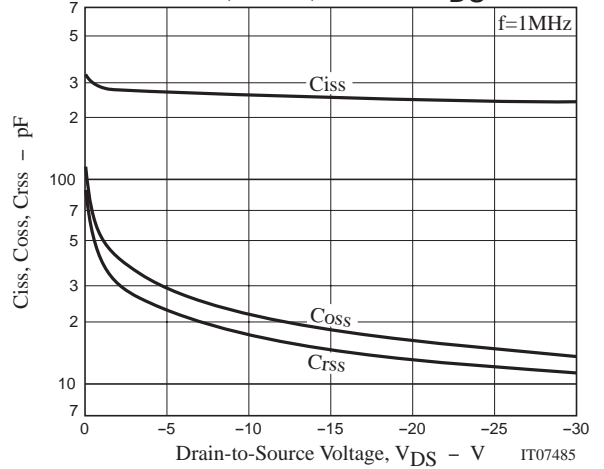
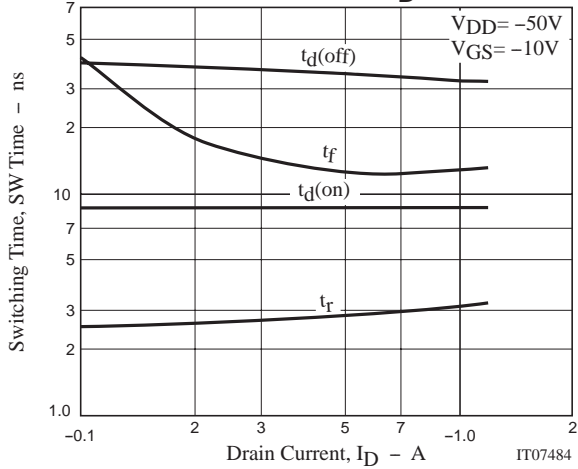
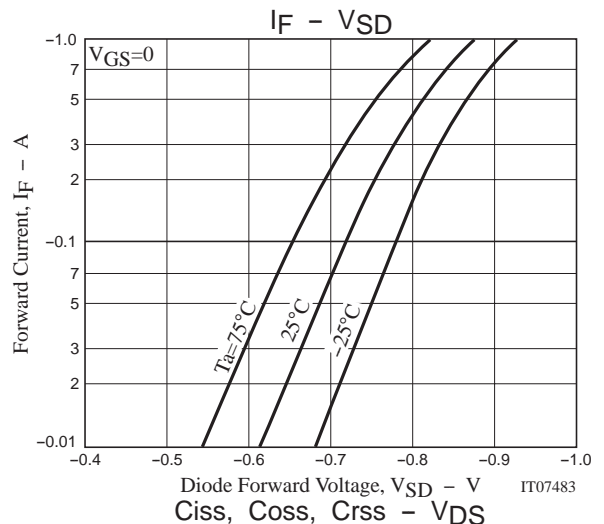
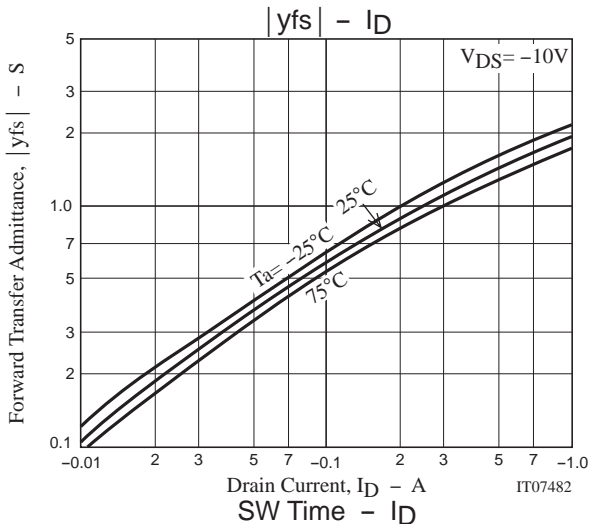
unit : mm

2152A



Switching Time Test Circuit





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