



CPH6402

Ultrahigh-Speed Switching Applications

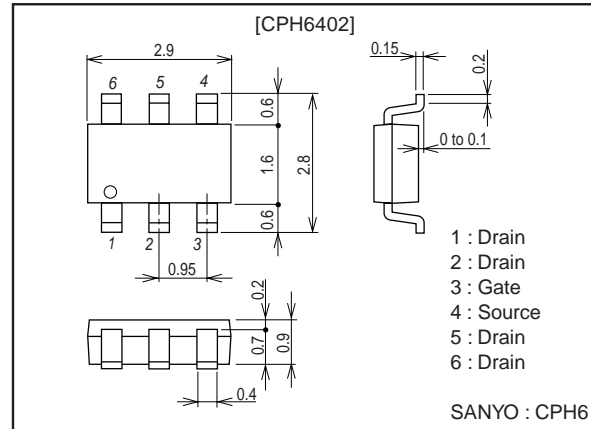
Features

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

Package Dimensions

unit:mm

2151



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} | | ± 24 | V |
| Drain Current (DC) | I_D | | 4 | A |
| Drain Current (pulse) | I_{DP} | $PW \leq 10\mu s$, duty cycle $\leq 1\%$ | 16 | A |
| Allowable Power Dissipation | P_D | Mounted on a ceramic board (900mm ² ×0.8mm) | 1.6 | W |
| Channel Temperature | T_{ch} | | 150 | °C |
| Storage Temperature | T_{stg} | | -55 to +150 | °C |

Electrical Characteristics at Ta = 25°C

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|---------------|-------------------------------|---------|-----|----------|------------|
| | | | min | typ | max | |
| Drain-to-Source Breakdown Voltage | $V_{(BR)DSS}$ | $I_D=1mA$, $V_{GS}=0$ | 30 | | | V |
| Zero-Gate Voltage Drain Current | I_{DSS} | $V_{DS}=30V$, $V_{GS}=0$ | | | 10 | μA |
| Gate-to-Source Leakage Current | I_{GSS} | $V_{GS}=\pm 16V$, $V_{DS}=0$ | | | ± 10 | μA |
| Cutoff Voltage | $V_{GS(off)}$ | $V_{DS}=10V$, $I_D=1mA$ | 1.0 | | 2.4 | V |
| Forward Transfer Admittance | $ y_{fs} $ | $V_{DS}=10V$, $I_D=2A$ | 3.0 | 4.3 | | S |
| Static Drain-to-Source On-State Resistance | $R_{DS(on)1}$ | $I_D=2A$, $V_{GS}=10V$ | | 55 | 75 | m Ω |
| | $R_{DS(on)2}$ | $I_D=1A$, $V_{GS}=4V$ | | 110 | 155 | m Ω |
| Input Capacitance | C_{iss} | $V_{DS}=10V$, $f=1MHz$ | | 240 | | pF |
| Output Capacitance | C_{oss} | $V_{DS}=10V$, $f=1MHz$ | | 160 | | pF |
| Reverse Transfer Capacitance | C_{rss} | $V_{DS}=10V$, $f=1MHz$ | | 70 | | pF |

Marking : KB

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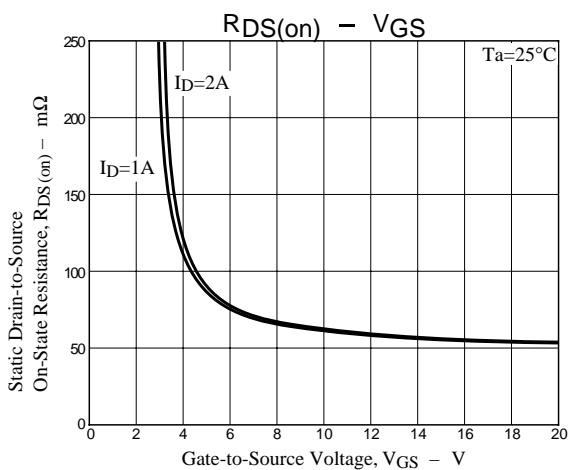
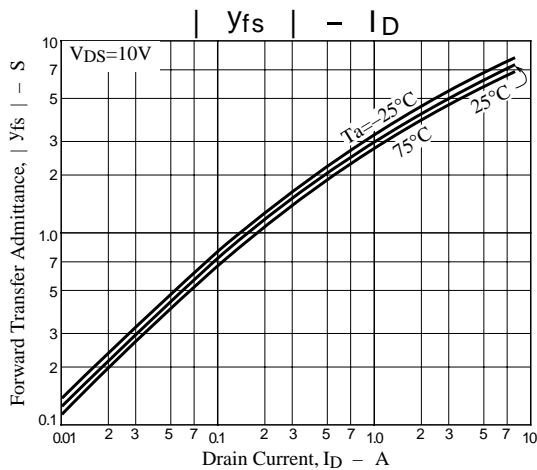
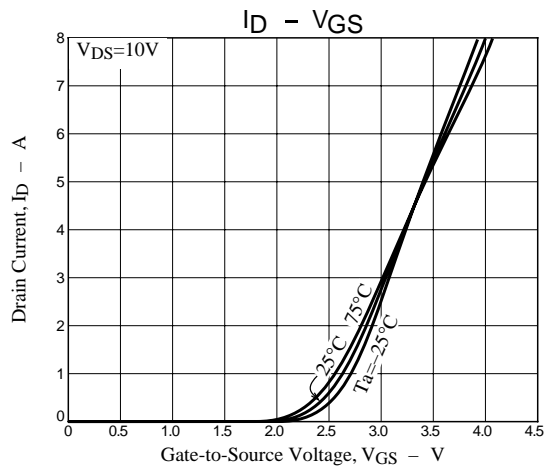
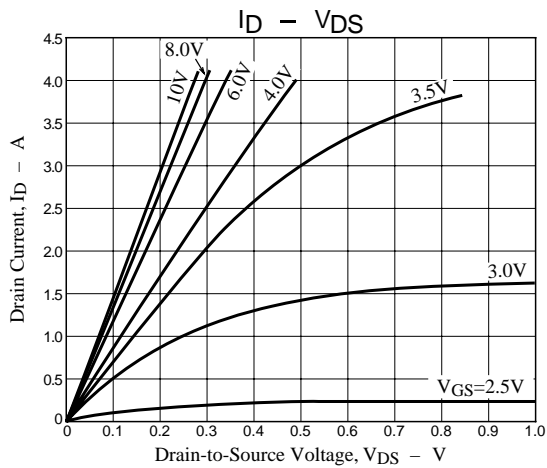
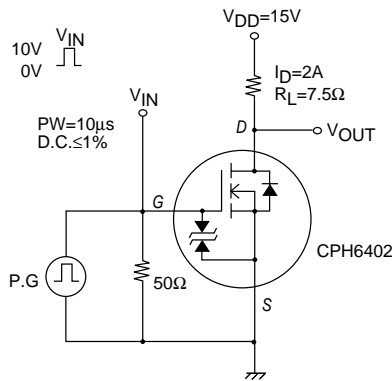
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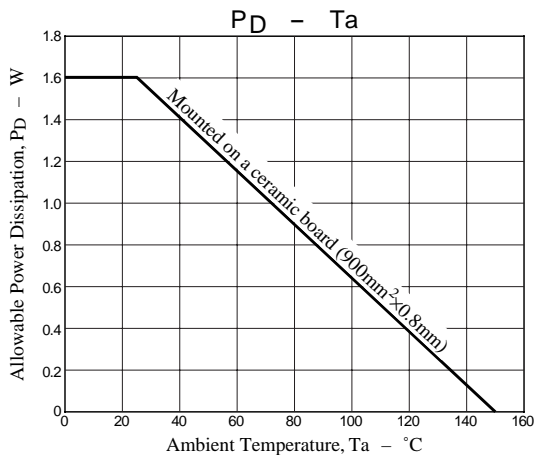
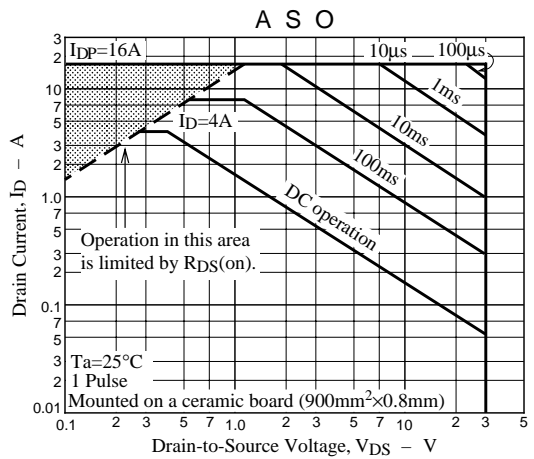
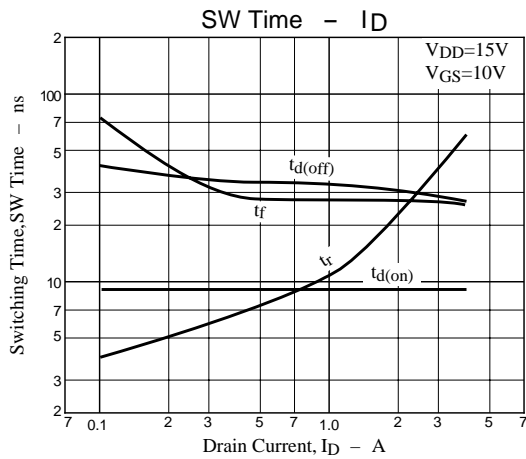
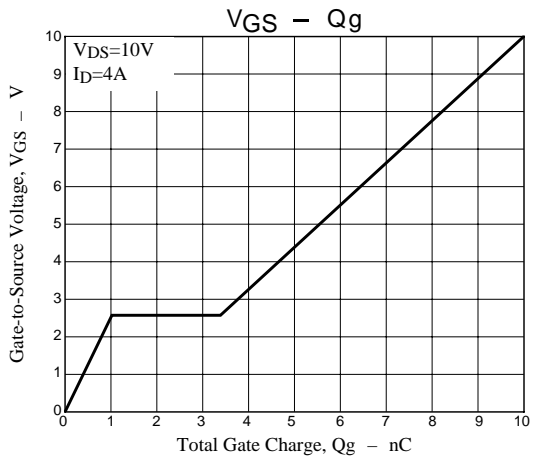
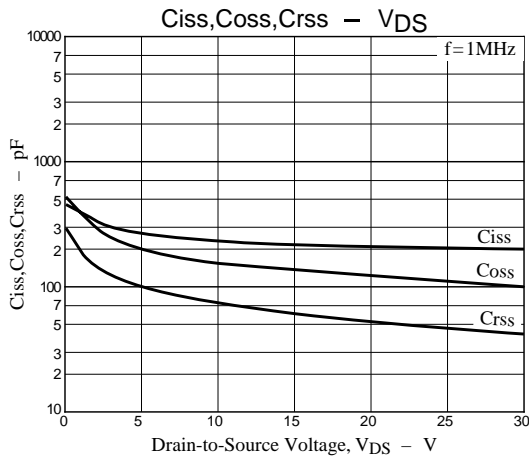
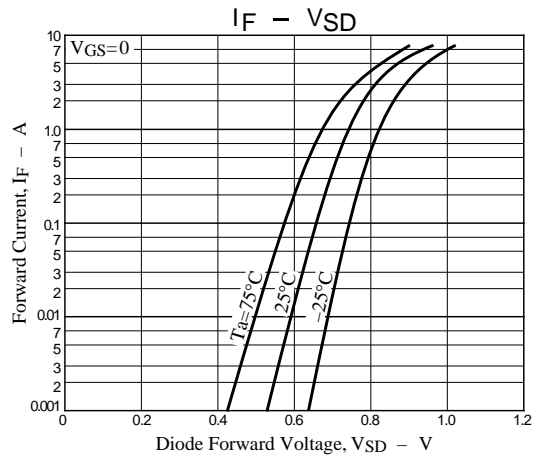
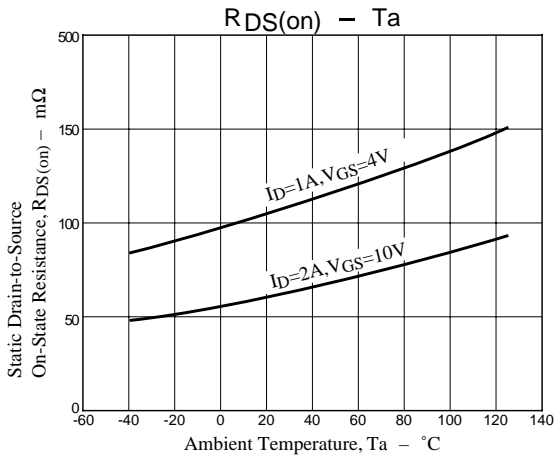
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| Parameter | Symbol | Conditions | Ratings | | | Unit |
|-------------------------------|--------------|----------------------------------|---------|------|-----|------|
| | | | min | typ | max | |
| Turn-ON Delay Time | $t_{d(on)}$ | See specified Test Circuit | | 9 | | ns |
| Rise Time | t_r | See specified Test Circuit | | 25 | | ns |
| Turn-OFF Delay Time | $t_{d(off)}$ | See specified Test Circuit | | 30 | | ns |
| Fall Time | t_f | See specified Test Circuit | | 28 | | ns |
| Total Gate Charge | Qg | $V_{DS}=10V, V_{GS}=10V, I_D=4A$ | | 10 | | nC |
| Gate-to-Source Charge | Qgs | $V_{DS}=10V, V_{GS}=10V, I_D=4A$ | | 1 | | nC |
| Gate-to-Drain "Miller" Charge | Qgd | $V_{DS}=10V, V_{GS}=10V, I_D=4A$ | | 2.4 | | nC |
| Diode Forward Voltage | V_{SD} | $I_S=4A, V_{GS}=0$ | | 0.85 | 1.2 | V |

Switching Time Test Circuit



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