



CPH3422

Ultrahigh-Speed Switching Applications

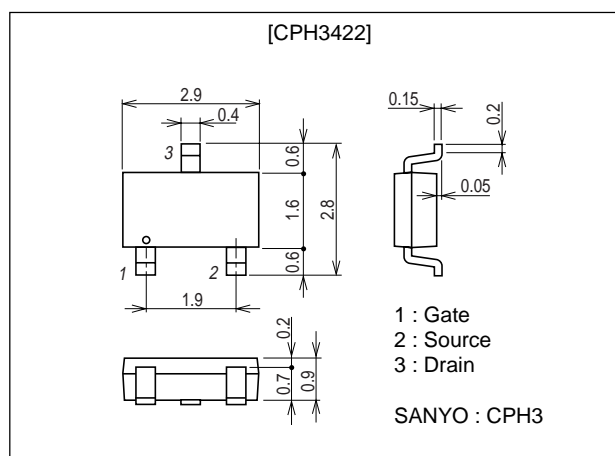
Features

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

Package Dimensions

unit : mm

2152A



Specifications

Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|------------------|---|-------------|------|
| Drain-to-Source Voltage | V _{DSS} | | 60 | V |
| Gate-to-Source Voltage | V _{GSS} | | ±20 | V |
| Drain Current (DC) | I _D | | 1 | A |
| Drain Current (Pulse) | I _{DP} | PW≤10μs, duty cycle≤1% | 4 | A |
| Allowable Power Dissipation | P _D | Mounted on a ceramic board (900mm²×0.8mm) | 0.9 | 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 | 60 | | | V |
| Zero-Gate Voltage Drain Current | I _{DSS} | V _{DS} =60V, V _{GS} =0 | | | 1 | μA |
| Gate-to-Source Leakage Current | I _{GSS} | V _{GS} =±16V, V _{DS} =0 | | | ±10 | μA |
| Cutoff Voltage | V _{GS(off)} | V _{DS} =10V, I _D =1mA | 1.2 | | 2.6 | V |
| Forward Transfer Admittance | y _{fs} | V _{DS} =10V, I _D =0.5A | 0.45 | 0.9 | | S |
| Static Drain-to-Source On-State Resistance | R _{DS(on)1} | I _D =0.5A, V _{GS} =10V | | 480 | 630 | mΩ |
| | R _{DS(on)2} | I _D =0.5A, V _{GS} =4V | | 640 | 900 | mΩ |

Marking : KX

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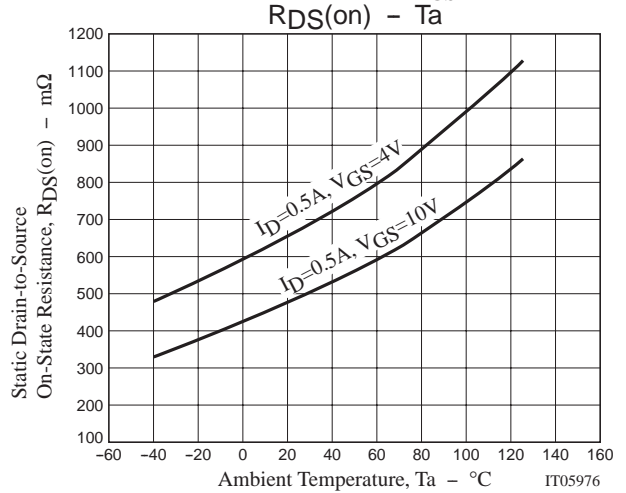
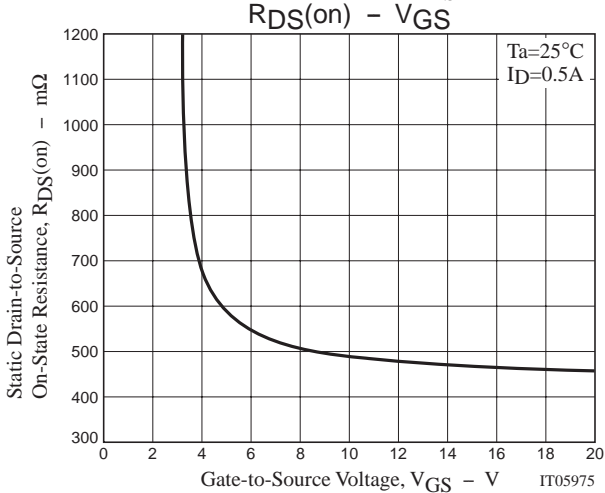
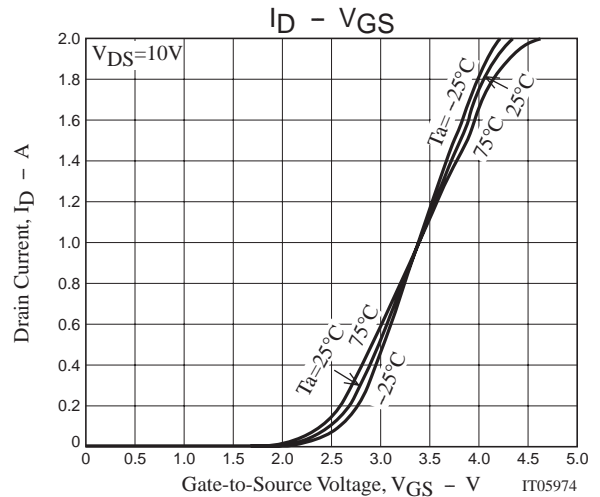
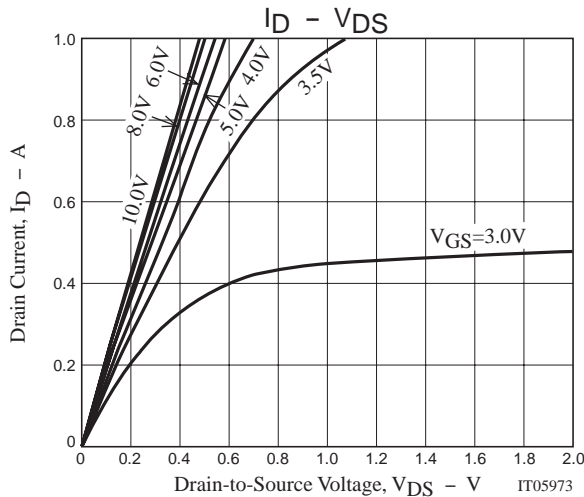
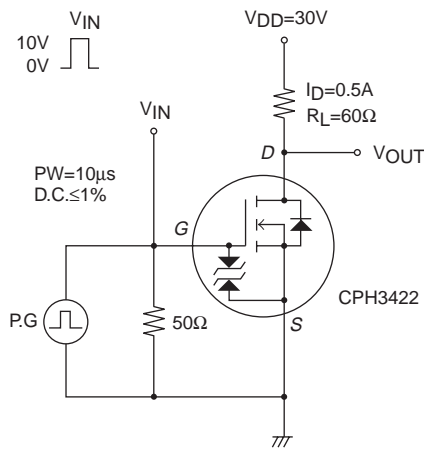
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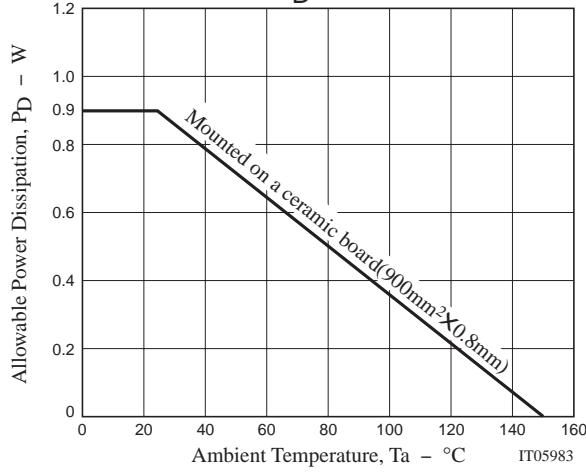
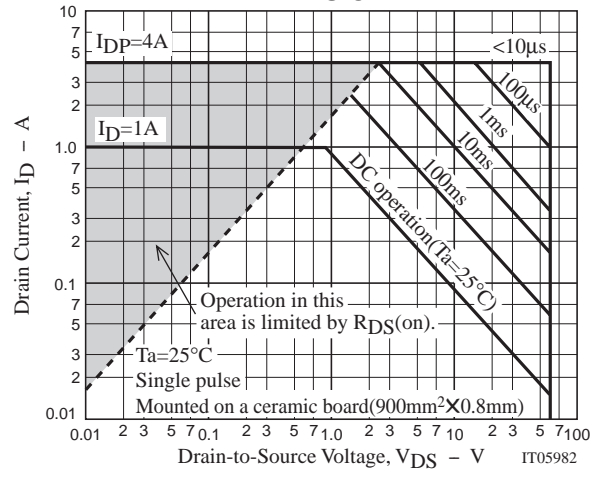
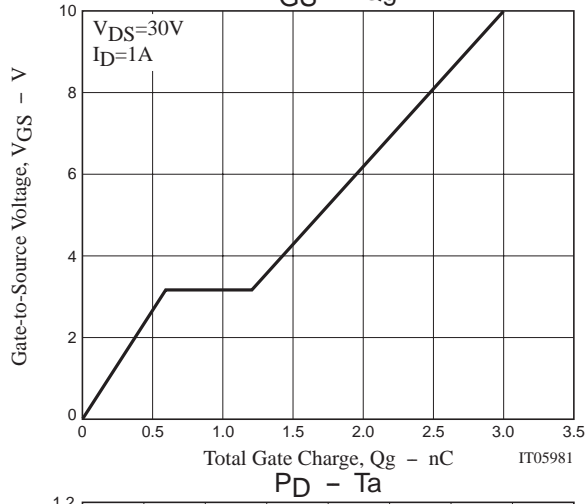
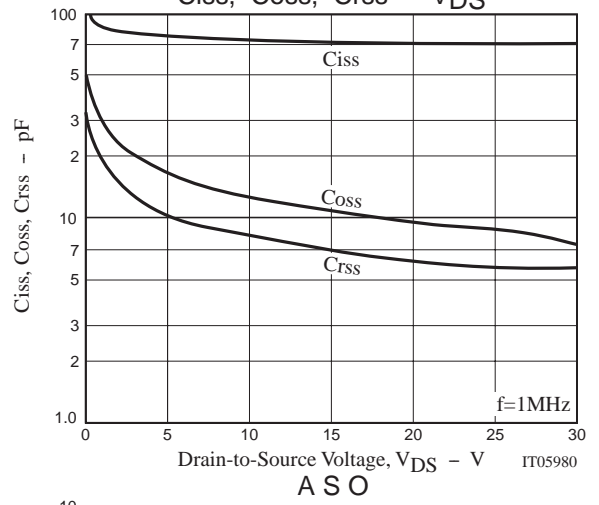
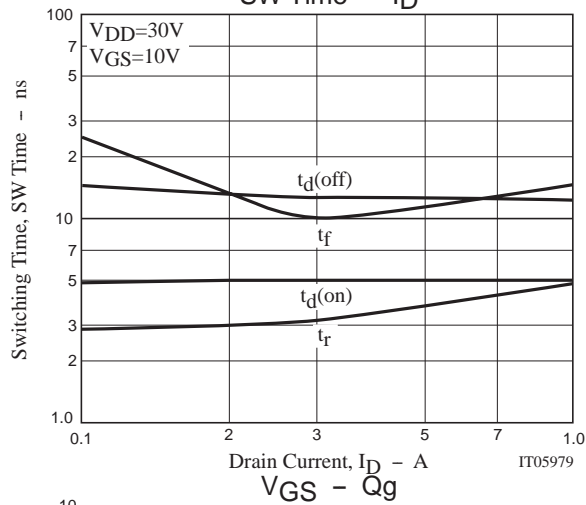
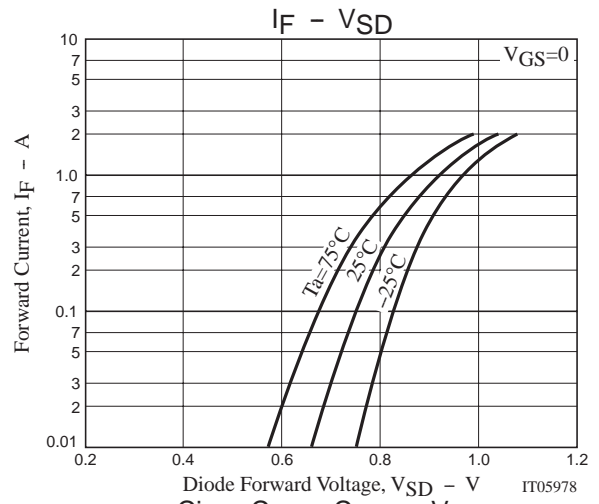
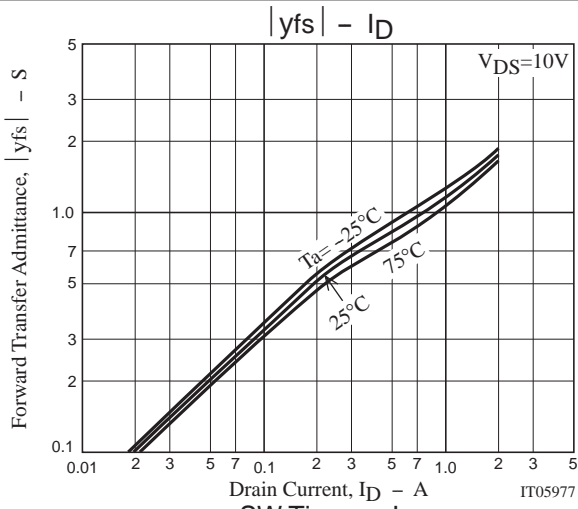
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| Parameter | Symbol | Conditions | Ratings | | | Unit |
|-------------------------------|---------------------|--|---------|-----|-----|------|
| | | | min | typ | max | |
| Input Capacitance | Ciss | V _{DS} =20V, f=1MHz | | 70 | | pF |
| Output Capacitance | Coss | V _{DS} =20V, f=1MHz | | 9.0 | | pF |
| Reverse Transfer Capacitance | Crss | V _{DS} =20V, f=1MHz | | 6.5 | | pF |
| Turn-ON Delay Time | t _{d(on)} | See specified Test Circuit. | | 5 | | ns |
| Rise Time | t _r | See specified Test Circuit. | | 4 | | ns |
| Turn-OFF Delay Time | t _{d(off)} | See specified Test Circuit. | | 12 | | ns |
| Fall Time | t _f | See specified Test Circuit. | | 12 | | ns |
| Total Gate Charge | Q _g | V _{DS} =30V, V _{GS} =10V, I _D =1A | | 3.0 | | nC |
| Gate-to-Source Charge | Q _{gs} | V _{DS} =30V, V _{GS} =10V, I _D =1A | | 0.6 | | nC |
| Gate-to-Drain "Miller" Charge | Q _{gd} | V _{DS} =30V, V _{GS} =10V, I _D =1A | | 0.6 | | nC |
| Diode Forward Voltage | V _{SD} | I _S =1A, V _{GS} =0 | | 0.9 | 1.2 | V |

Switching Time Test Circuit





Note on usage : Since the CPH3422 is designed for high-speed switching applications, please avoid using this device in the vicinity of highly charged objects.

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