



CPH6311

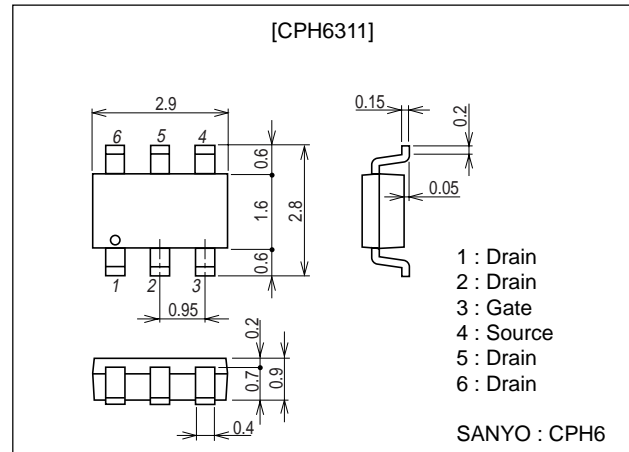
Ultrahigh-Speed Switching Applications

Features

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

Package Dimensions

unit : mm
2151A



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 | | -5 | A |
| Drain Current (Pulse) | I _{DP} | PW≤10μs, duty cycle≤1% | -20 | A |
| Allowable Power Dissipation | P _D | Mounted on a ceramic board (900mm²×0.8mm) | 1.6 | W |
| | | Mounted on a FR4 board PW≤5S | 2.0 | 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 | -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 | y _{fs} | V _{DS} =-10V, I _D =-3A | 5.8 | 8.5 | | S |
| Static Drain-to-Source On-State Resistance | R _{DS(on)1} | I _D =-3A, V _{GS} =-4.5V | | 32 | 42 | mΩ |
| | R _{DS(on)2} | I _D =-1A, V _{GS} =-2.5V | | 46 | 60 | mΩ |

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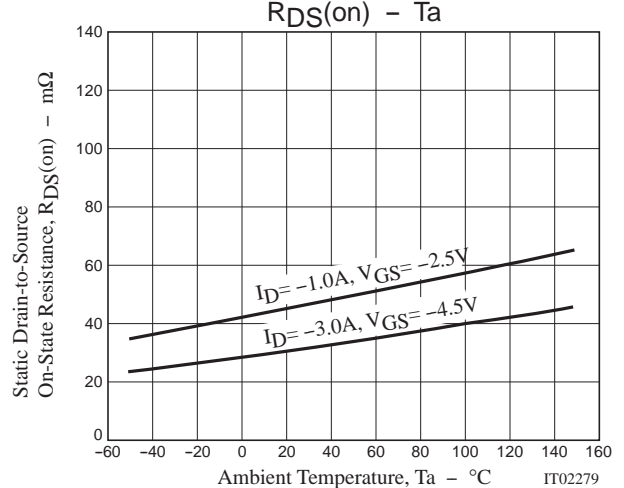
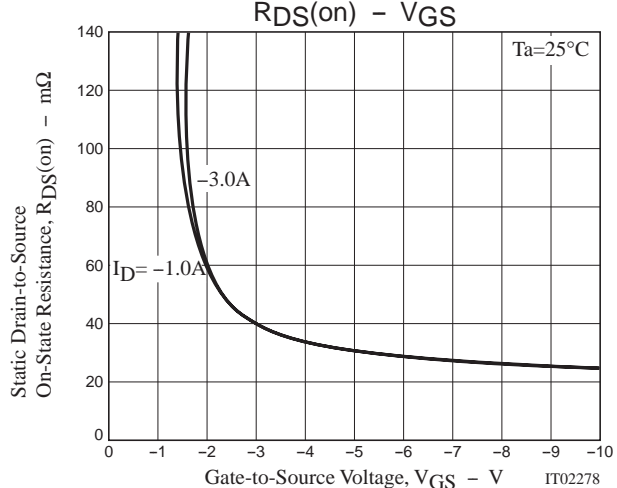
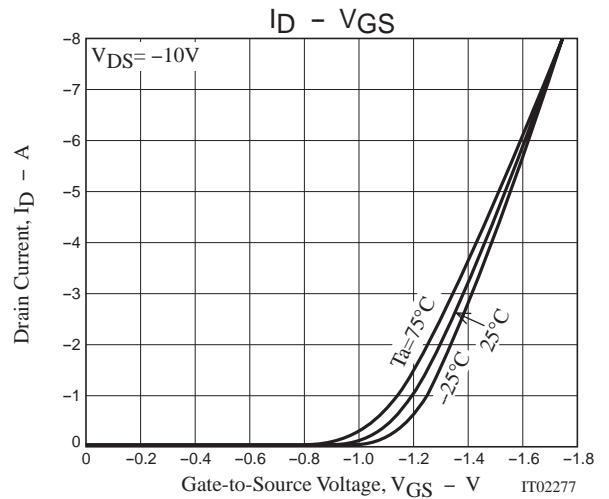
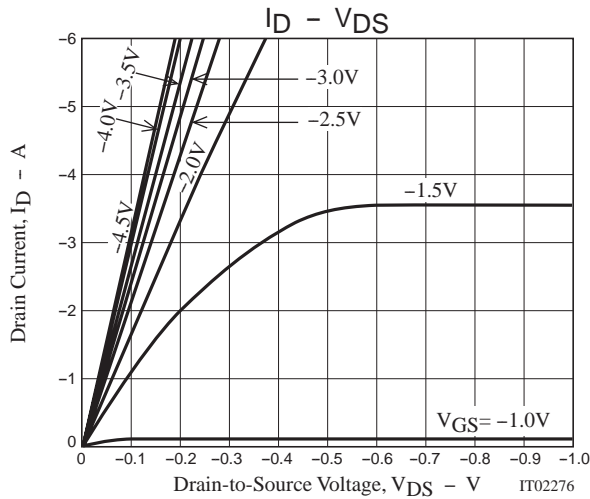
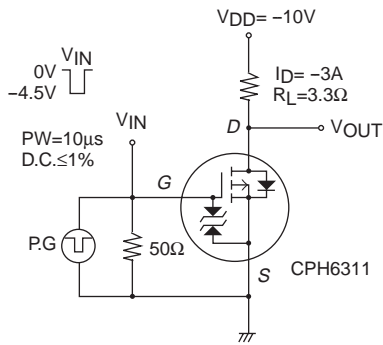
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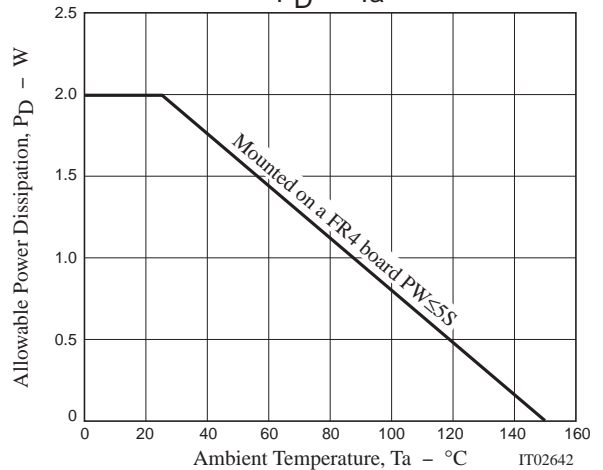
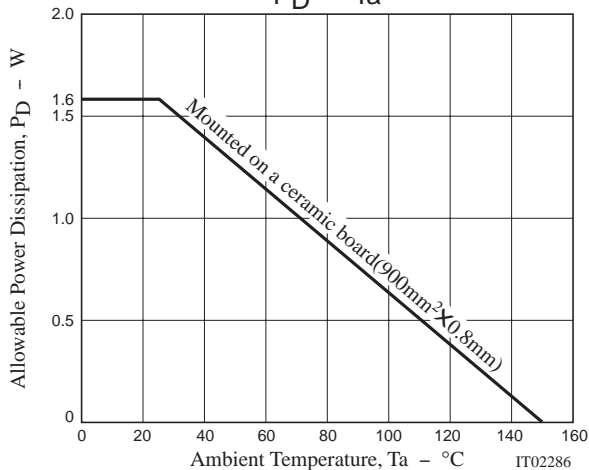
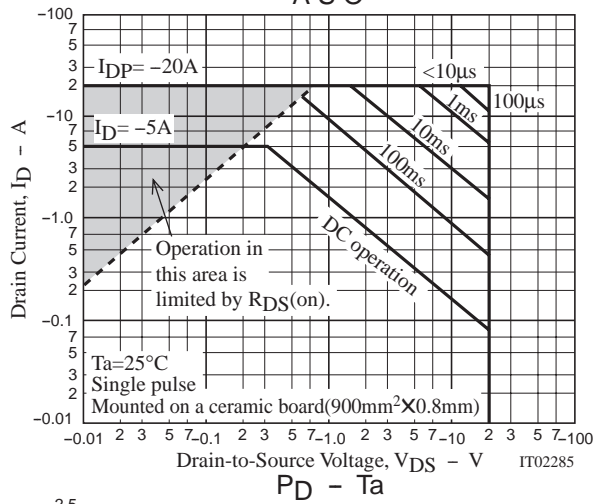
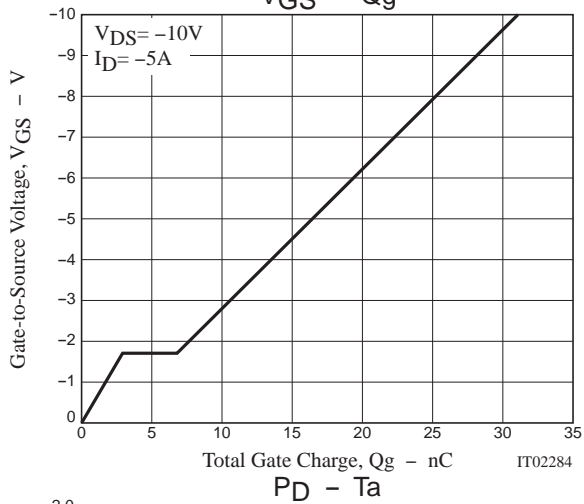
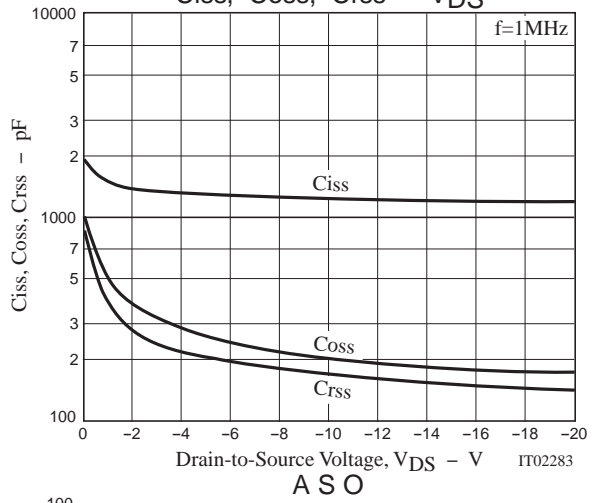
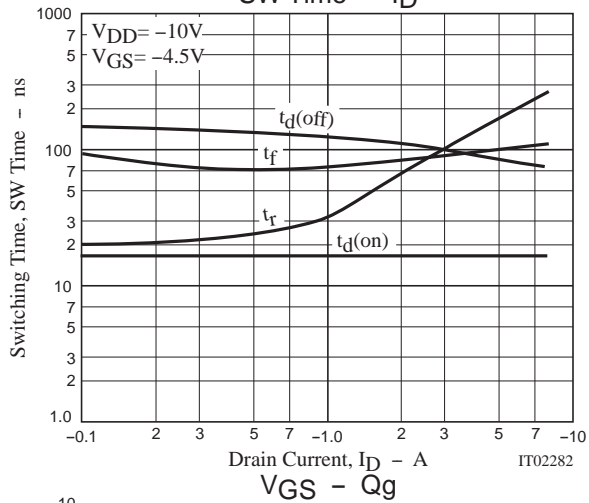
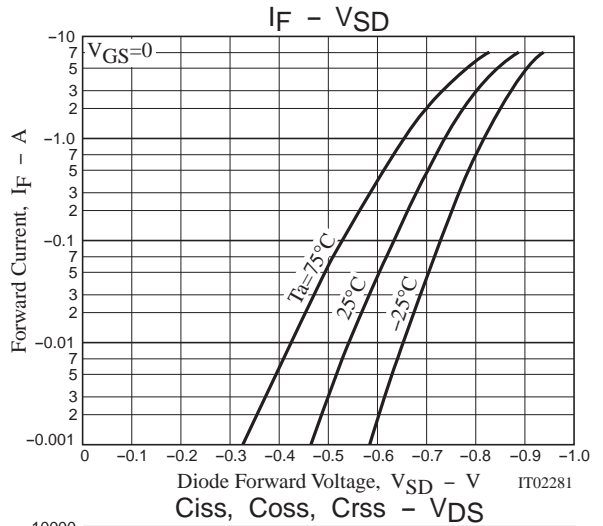
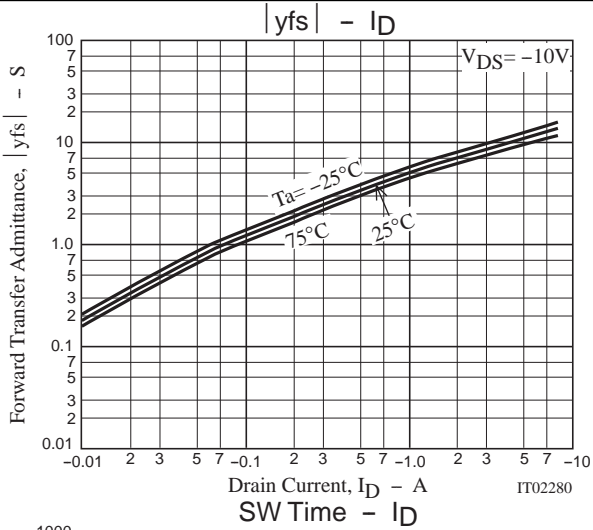
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|-------------------------------|---------------------|-------------------------------------------------------------------|---------|-------|------|------|
| | | | min | typ | max | |
| Input Capacitance | Ciss | V _{DS} =-10V, f=1MHz | | 1230 | | pF |
| Output Capacitance | Coss | V _{DS} =-10V, f=1MHz | | 200 | | pF |
| Reverse Transfer Capacitance | Crss | V _{DS} =-10V, f=1MHz | | 170 | | pF |
| Turn-ON Delay Time | t _{d(on)} | See specified Test Circuit | | 17 | | ns |
| Rise Time | t _r | See specified Test Circuit | | 100 | | ns |
| Turn-OFF Delay Time | t _{d(off)} | See specified Test Circuit | | 100 | | ns |
| Fall Time | t _f | See specified Test Circuit | | 95 | | ns |
| Total Gate Charge | Q _g | V _{DS} =-10V, V _{GS} =-10V, I _D =-5A | | 31 | | nC |
| Gate-to-Source Charge | Q _{gs} | V _{DS} =-10V, V _{GS} =-10V, I _D =-5A | | 2.8 | | nC |
| Gate-to-Drain "Miller" Charge | Q _{gd} | V _{DS} =-10V, V _{GS} =-10V, I _D =-5A | | 4.2 | | nC |
| Diode Forward Voltage | V _{SD} | I _S =-5A, V _{GS} =0 | | -0.83 | -1.5 | V |

Marking : JM

Switching Time Test Circuit



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