



Ultrahigh-Speed Switching Applications

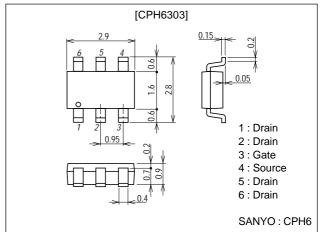
Features

- · Low ON 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 | VGSS | | ±10 | V |
| Drain Current (DC) | ID | | -4 | Α |
| Drain Current (pulse) | I _{DP} | PW≤10µs, duty cycle≤1% | -16 | Α |
| Allowable Power Dissipation | D- | Mounted on a ceramic board (900mm ² ×0.8mm) | 1.6 | W |
| | PD | Mounted on a FR4 board, PW≤5s | 2.0 | 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 | Oille |
| Drain-to-Source Breakdown Voltage | V _{(BR)DSS} | $I_D=-1$ mA, $V_{GS}=0$ | -20 | | | V |
| Zero-Gate Voltage Drain Current | IDSS | V _{DS} =-20V, V _{GS} =0 | | | -1 | μA |
| Gate-to-Source Leakage Current | IGSS | $V_{GS}=\pm 8V$, $V_{DS}=0$ | | | ±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 | 3.5 | 6.0 | | S |
| Static Drain-to-Source On-State Resistance | R _{DS} (on)1 | I _D =-2A, V _{GS} =-4V | | 70 | 90 | mΩ |
| | R _{DS} (on)2 | I _D =-1A, V _{GS} =-2.5V | | 100 | 130 | mΩ |

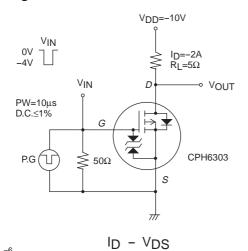
Marking: JC Continued on next page.

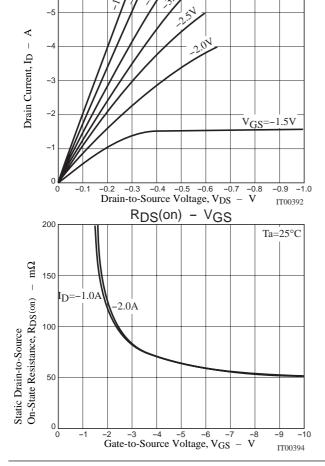
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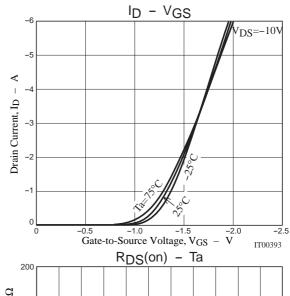
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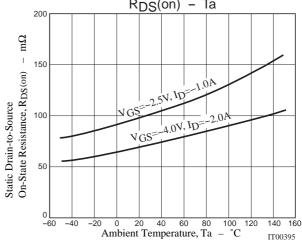
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|-------------------------------|-----------------|-------------------------------------------------------------------|---------|-------|------|------|
| | | | min | typ | max | Uill |
| Input Capacitance | Ciss | V _{DS} =-10V, f=1MHz | | 820 | | pF |
| Output Capacitance | Coss | V _{DS} =-10V, f=1MHz | | 150 | | pF |
| Reverse Transfer Capacitance | Crss | V _{DS} =-10V, f=1MHz | | 100 | | pF |
| Turn-ON Delay Time | td(on) | See specified Test Circuit | | 17 | | ns |
| Rise Time | t _r | See specified Test Circuit | | 60 | | ns |
| Turn-OFF Delay Time | td(off) | See specified Test Circuit | | 66 | | ns |
| Fall Time | t _f | See specified Test Circuit | | 56 | | ns |
| Total Gate Charge | Qg | V _{DS} =-10V, V _{GS} =-10V, I _D =-4A | | 17 | | nC |
| Gate-to-Source Charge | Qgs | V _{DS} =-10V, V _{GS} =-10V, I _D =-4A | | 1.5 | | nC |
| Gate-to-Drain "Miller" Charge | Qgd | V _{DS} =-10V, V _{GS} =-10V, I _D =-4A | | 2 | | nC |
| Diode Forward Voltage | V _{SD} | I _S =-4A, V _{GS} =0 | | -0.85 | -1.5 | V |

Switching Time Test Circuit

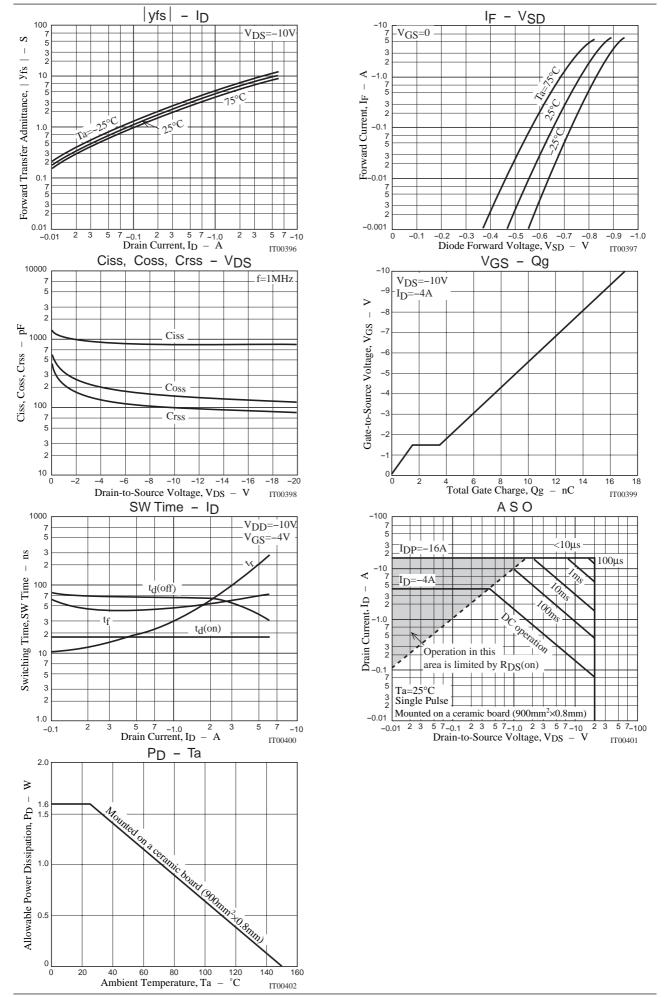








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