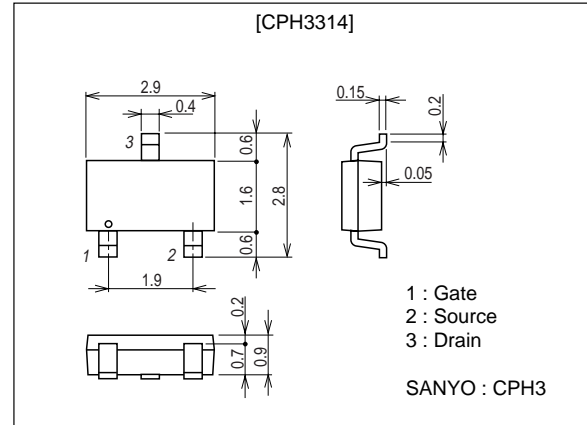


**CPH3314****Ultrahigh-Speed Switching Applications****Features**

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

**Package Dimensions**

unit : mm  
2152A

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		-30	V
Gate-to-Source Voltage	$V_{GSS}$		$\pm 20$	V
Drain Current (DC)	$I_D$		-1.6	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu\text{s}$ , duty cycles $\leq 1\%$	-6.4	A
Allowable Power Dissipation	$P_D$	Mounted on a ceramic board (900mm $^2$ X0.8mm)	1	W
Channel Temperature	$T_{ch}$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1\text{mA}$ , $V_{GS} = 0$	-30			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -30\text{V}$ , $V_{GS} = 0$			-1	$\mu\text{A}$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 16\text{V}$ , $V_{DS} = 0$			$\pm 10$	$\mu\text{A}$
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} $	$V_{DS} = -10\text{V}$ , $I_D = -0.8\text{A}$	1.0	1.5		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = -0.8\text{A}$ , $V_{GS} = -10\text{V}$		210	270	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D = -0.4\text{A}$ , $V_{GS} = -4\text{V}$		360	500	$\text{m}\Omega$
Input Capacitance	$C_{iss}$	$V_{DS} = -10\text{V}$ , $f = 1\text{MHz}$		185		pF
Output Capacitance	$C_{oss}$	$V_{DS} = -10\text{V}$ , $f = 1\text{MHz}$		30		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS} = -10\text{V}$ , $f = 1\text{MHz}$		20		pF

Marking : JP

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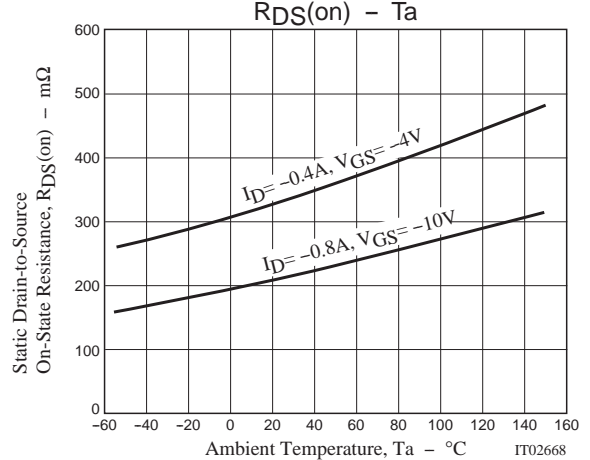
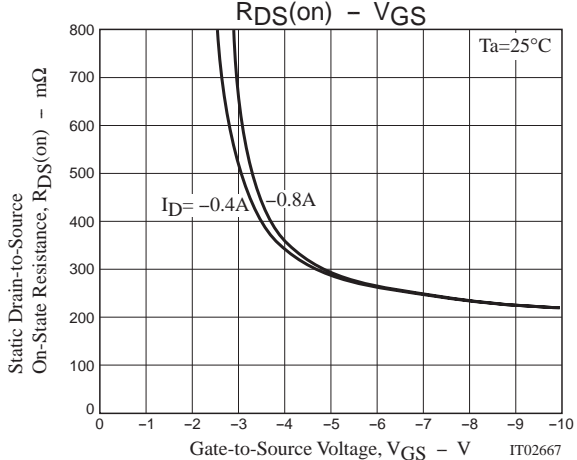
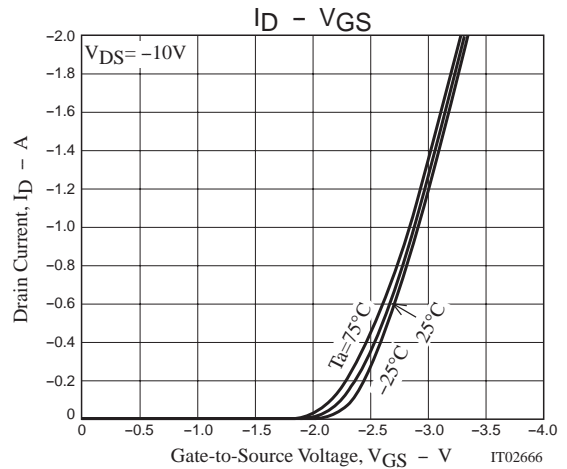
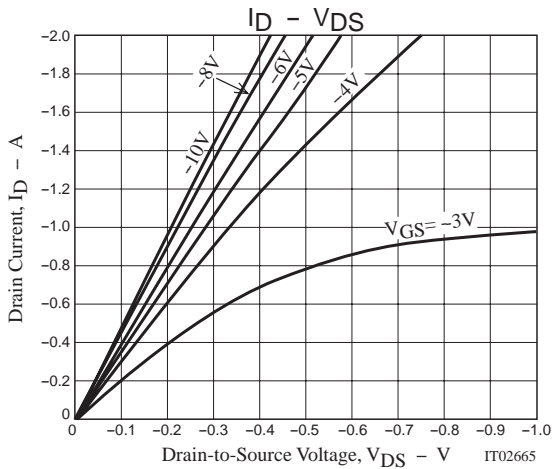
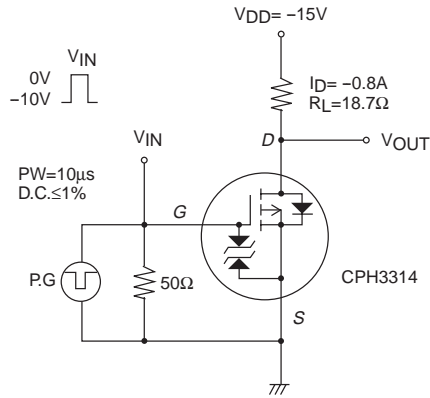
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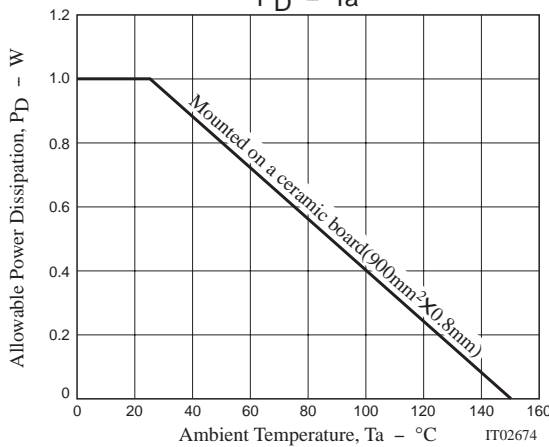
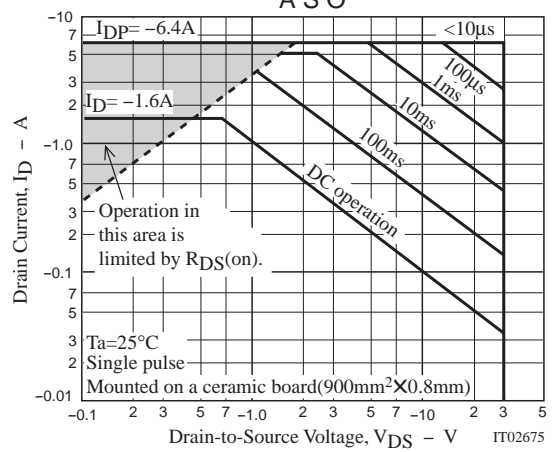
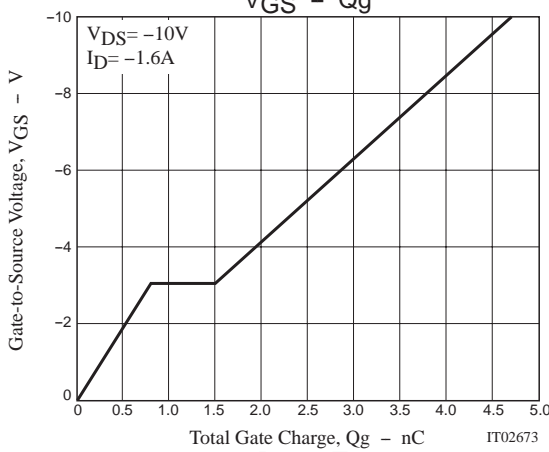
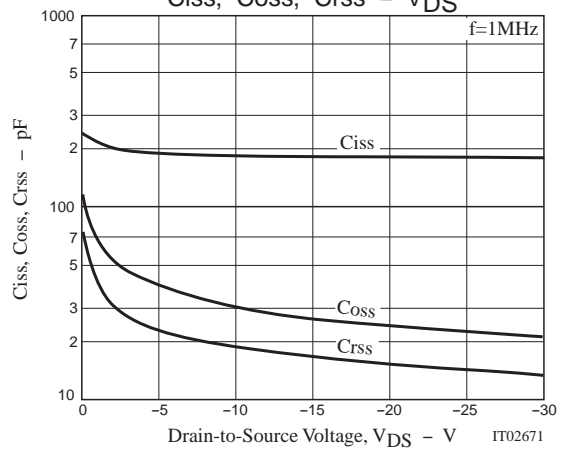
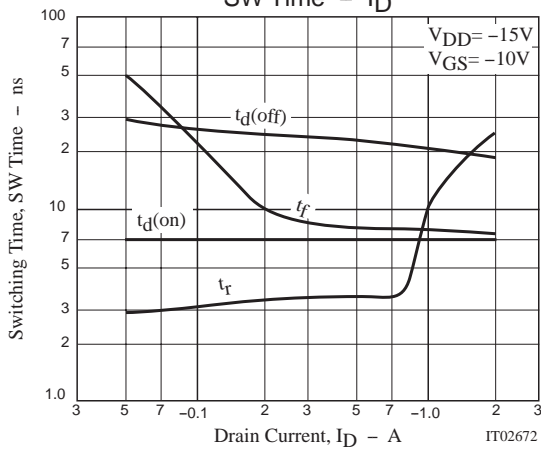
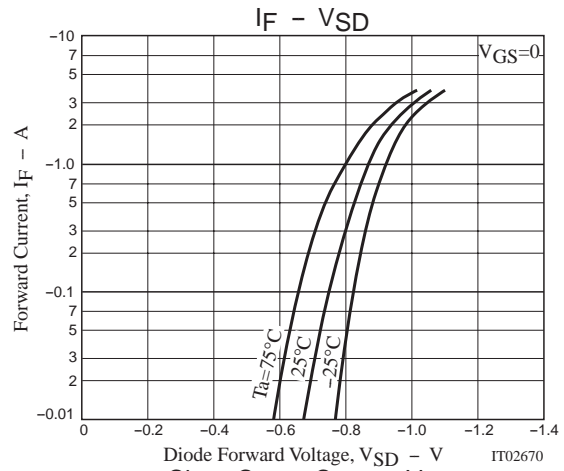
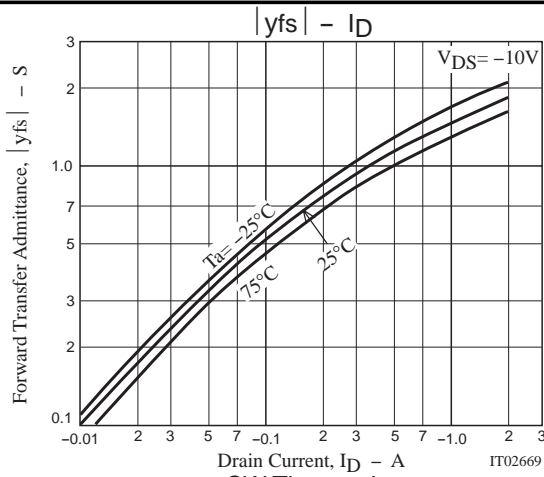
# CPH3314

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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		7		ns
Rise Time	$t_r$	See specified Test Circuit		4		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		22		ns
Fall Time	$t_f$	See specified Test Circuit		8		ns
Total Gate Charge	$Q_g$	$V_{DS}=-10V, V_{GS}=-10V, I_D=-1.6A$		4.7		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS}=-10V, V_{GS}=-10V, I_D=-1.6A$		0.8		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$	$V_{DS}=-10V, V_{GS}=-10V, I_D=-1.6A$		0.7		nC
Diode Forward Voltage	$V_{SD}$	$I_S=-1.6A, V_{GS}=0$		-0.9	-1.5	V

## Switching Time Test Circuit





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