

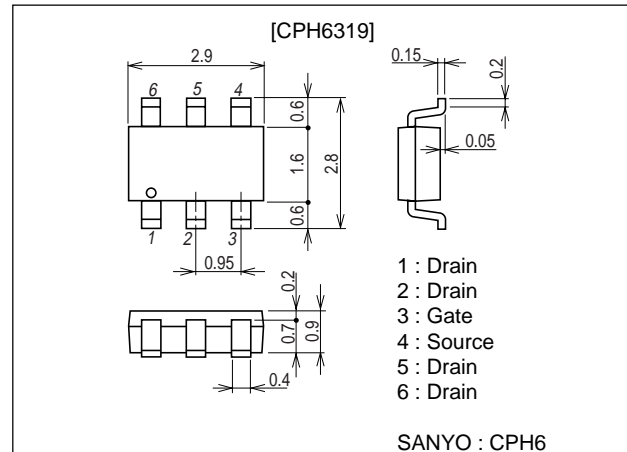
**CPH6319****High-Speed Switching Applications****Features**

- Low ON-resistance.
- High-speed switching.
- 1.8V drive.

Package Dimensions

unit : mm

2151A

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DS}		-12	V
Gate-to-Source Voltage	V_{GS}		± 8	V
Drain Current (DC)	I_D		-5	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	-20	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (900mm ² ×0.8mm)	1.5	W
		Mounted on a FR4 board $PW \leq 5\text{s}$	2.0	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	$V_{(BR)DSS}$	$I_D = -1\text{mA}$, $V_{GS} = 0$	-12			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -12\text{V}$, $V_{GS} = 0$			-10	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 6.4\text{V}$, $V_{DS} = 0$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -6\text{V}$, $I_D = -1\text{mA}$	-0.3		-1.0	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -6\text{V}$, $I_D = -3\text{A}$	5.8	8.5		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = -3\text{A}$, $V_{GS} = -4.5\text{V}$		36	47	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D = -1.5\text{A}$, $V_{GS} = -2.5\text{V}$		52	73	$\text{m}\Omega$
	$R_{DS(on)3}$	$I_D = -0.3\text{A}$, $V_{GS} = -1.8\text{V}$		72	105	$\text{m}\Omega$

Marking : JV

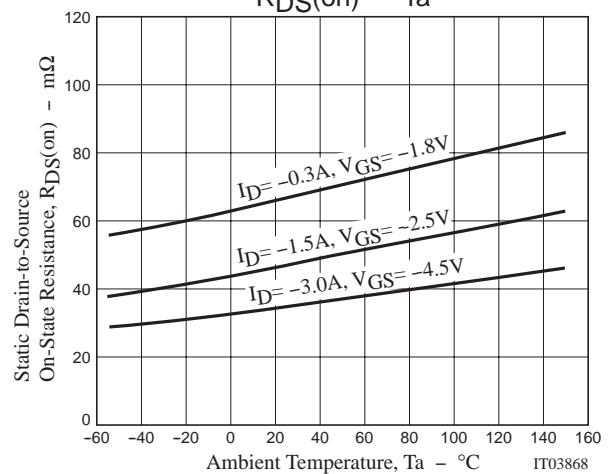
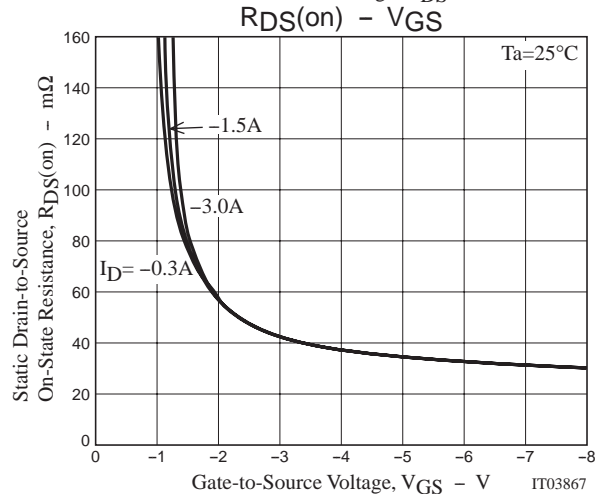
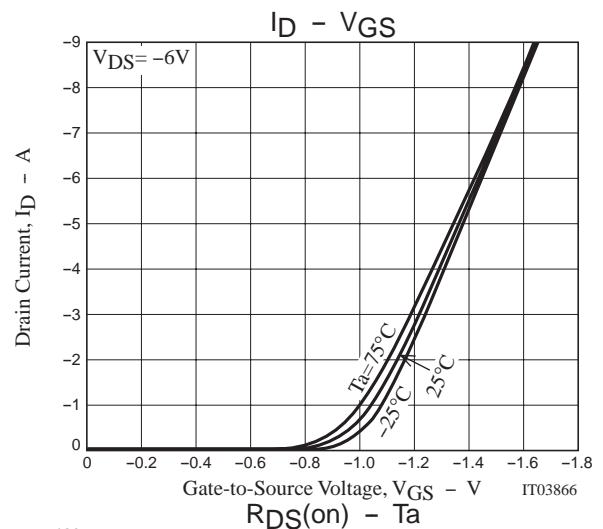
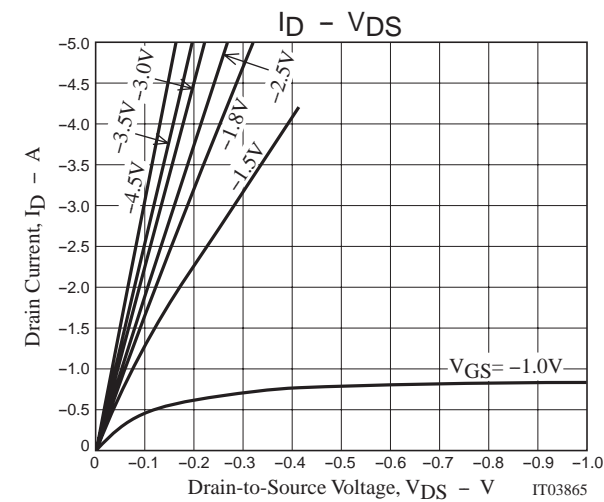
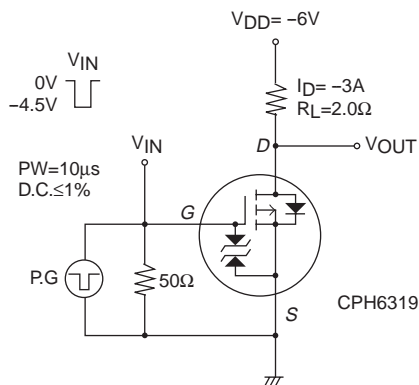
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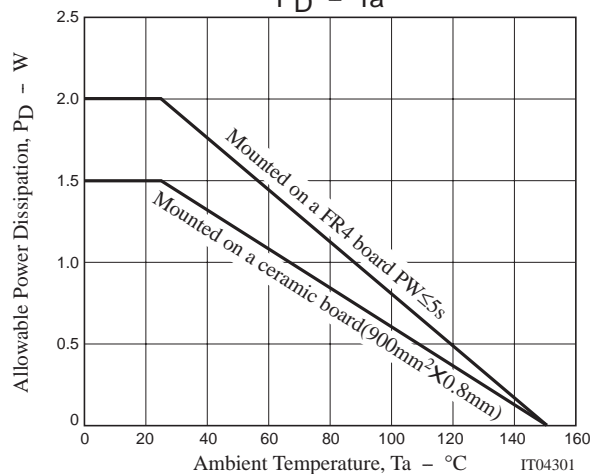
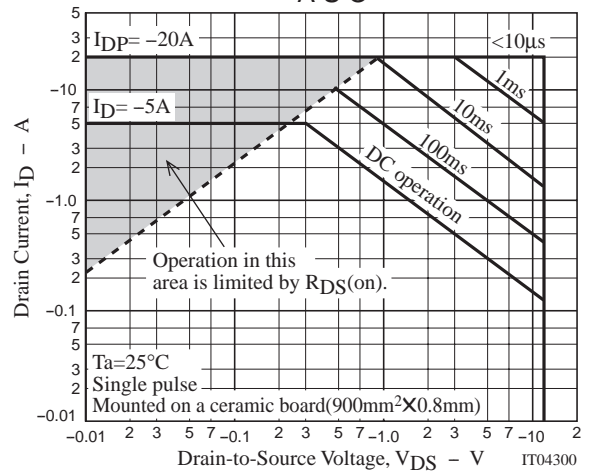
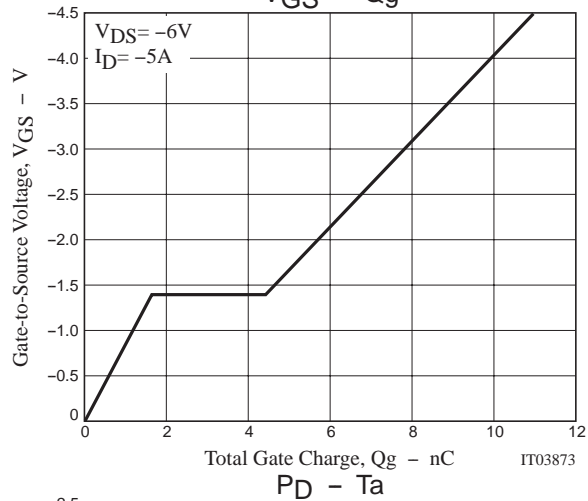
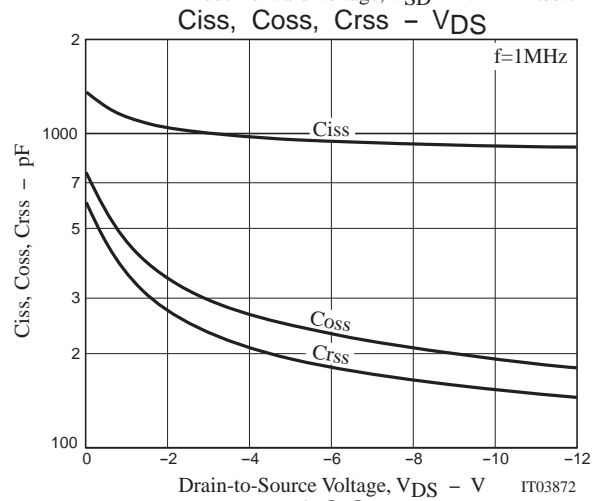
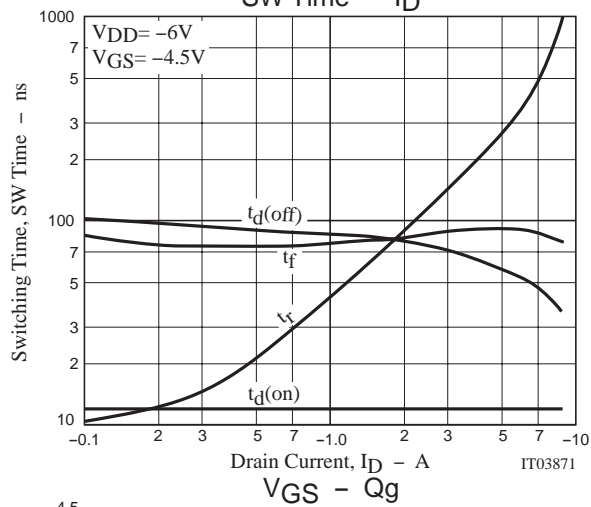
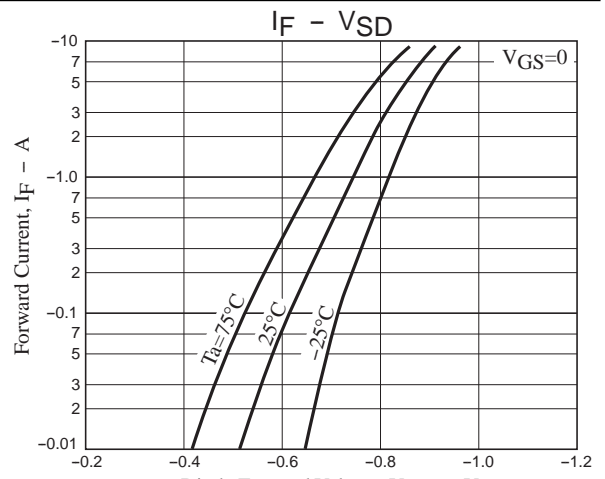
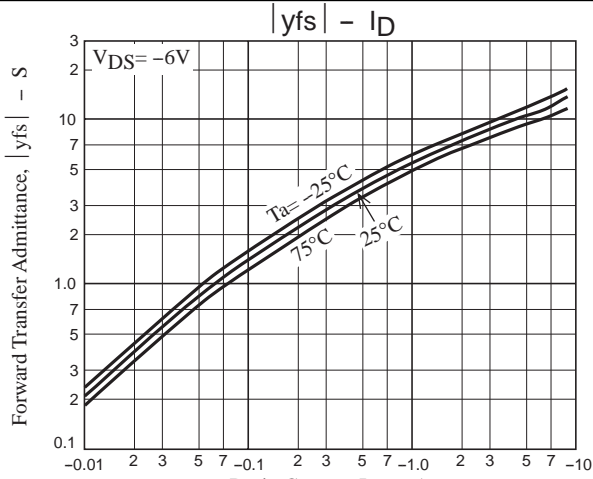
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	C_{iss}	$V_{DS}=-6V, f=1MHz$		940		pF
Output Capacitance	C_{oss}	$V_{DS}=-6V, f=1MHz$		230		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=-6V, f=1MHz$		180		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		12		ns
Rise Time	t_r	See specified Test Circuit.		143		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		71		ns
Fall Time	t_f	See specified Test Circuit.		89		ns
Total Gate Charge	Q_g	$V_{DS}=-6V, V_{GS}=-4.5V, I_D=-5A$		11		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=-6V, V_{GS}=-4.5V, I_D=-5A$		1.6		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=-6V, V_{GS}=-4.5V, I_D=-5A$		2.8		nC
Diode Forward Voltage	V_{SD}	$I_S=-5A, V_{GS}=0$		-0.85	-1.5	V

Switching Time Test Circuit





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