



ON Semiconductor®

**ON Semiconductor**  
**DATA SHEET****CPH6314** — P-Channel Silicon MOSFET  
**General-Purpose Switching Device**  
**Applications****Features**

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

**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)	$I_D$		-4	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu\text{s}$ , duty cycle $\leq 1\%$	-16	A
Allowable Power Dissipation	$P_D$	Mounted on a ceramic board (1200mm <sup>2</sup> ×0.8mm)	1.6	W
Channel Temperature	$T_{ch}$		150	°C
Storage Temperature	$T_{stg}$		-55 to +150	°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} $	$V_{DS}=-10\text{V}$ , $I_D=-2\text{A}$	2.5	3.6		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=-2\text{A}$ , $V_{GS}=-10\text{V}$		53	69	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D=-1\text{A}$ , $V_{GS}=-4.5\text{V}$		92	129	$\text{m}\Omega$
	$R_{DS(on)3}$	$I_D=-1\text{A}$ , $V_{GS}=-4\text{V}$		105	147	$\text{m}\Omega$
Input Capacitance	$C_{iss}$	$V_{DS}=-10\text{V}$ , $f=1\text{MHz}$		510		pF
Output Capacitance	$C_{oss}$	$V_{DS}=-10\text{V}$ , $f=1\text{MHz}$		115		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=-10\text{V}$ , $f=1\text{MHz}$		78		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		11		ns
Rise Time	$t_r$	See specified Test Circuit.		20		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		40		ns
Fall Time	$t_f$	See specified Test Circuit.		32		ns

Marking : JQ

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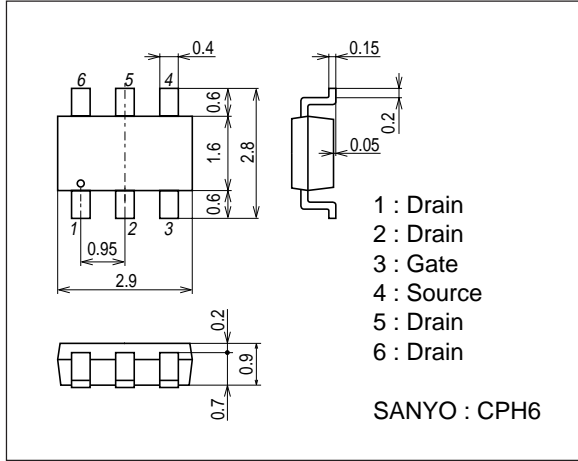
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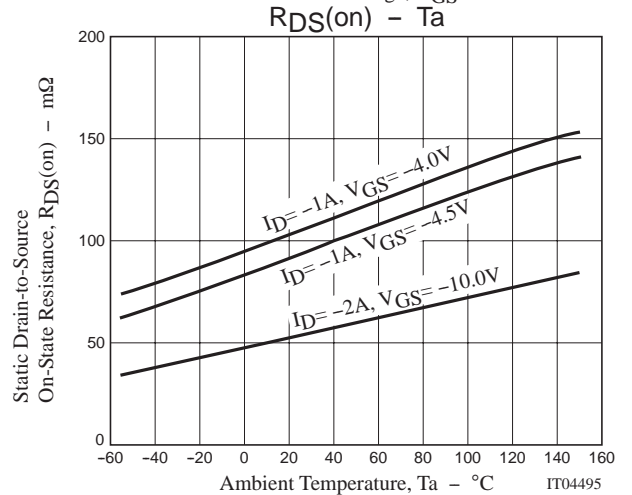
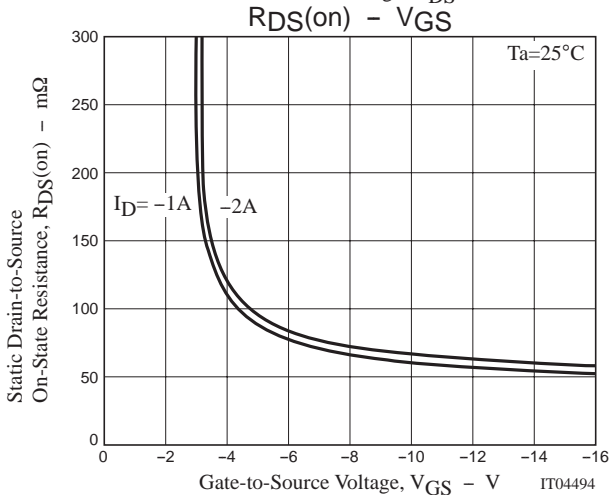
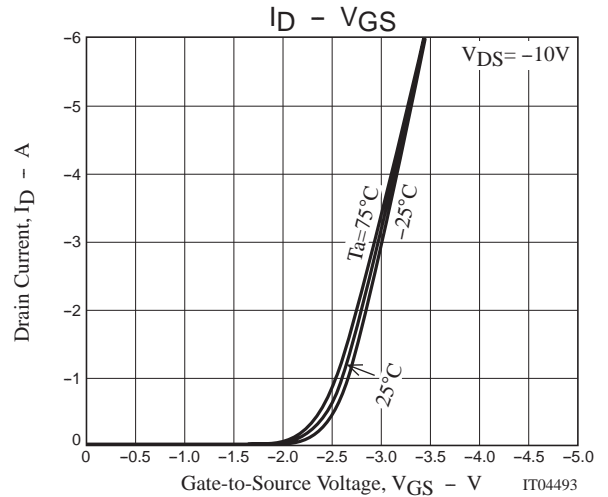
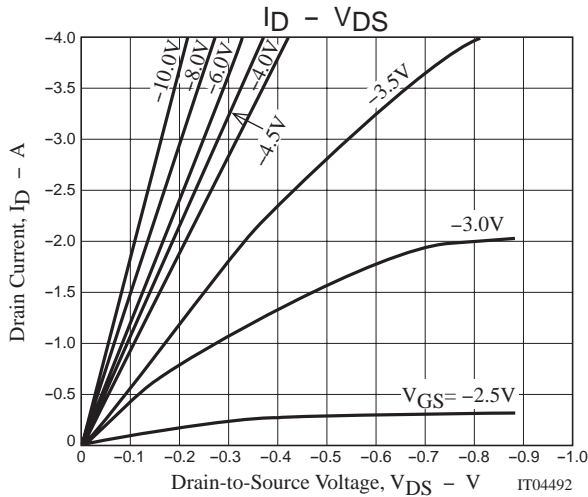
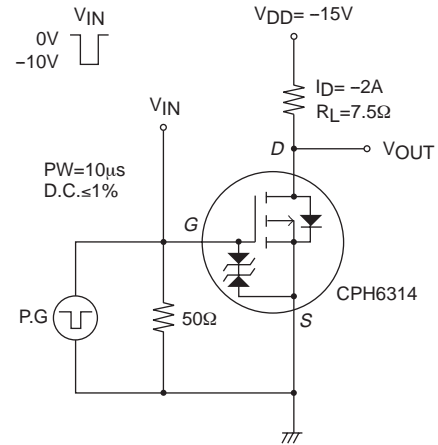
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Qg	$V_{DS}=-10V, V_{GS}=-10V, I_D=-4A$		11		nC
Gate-to-Source Charge	Qgs	$V_{DS}=-10V, V_{GS}=-10V, I_D=-4A$		2.4		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=-10V, V_{GS}=-10V, I_D=-4A$		1.7		nC
Diode Forward Voltage	$V_{SD}$	$I_S=-4A, V_{GS}=0$		-0.86	-1.2	V

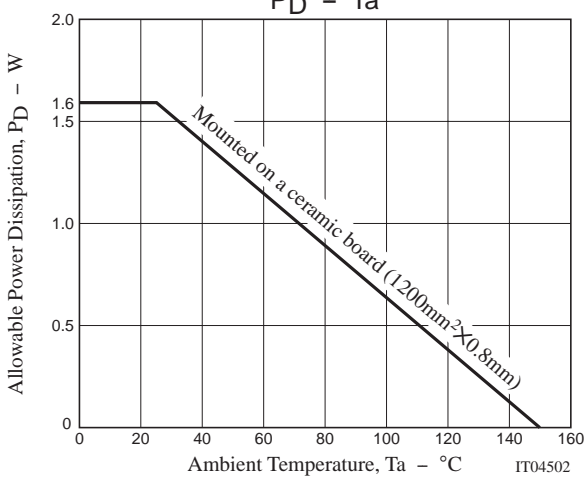
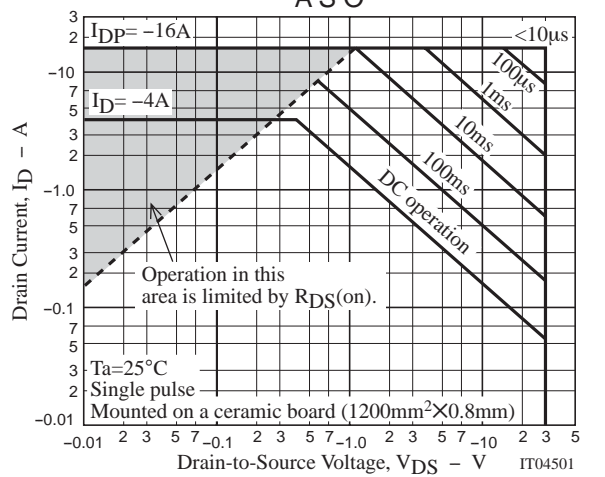
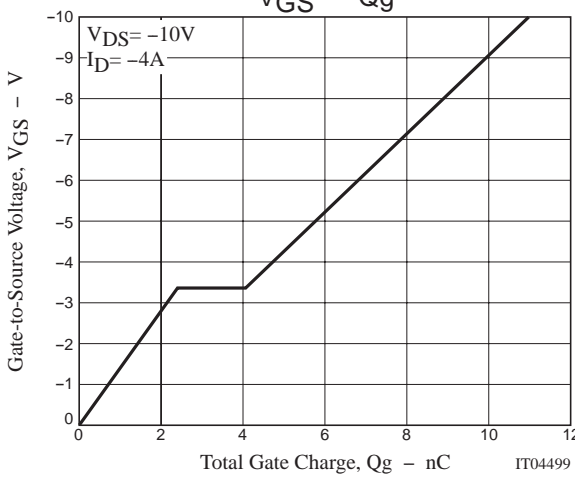
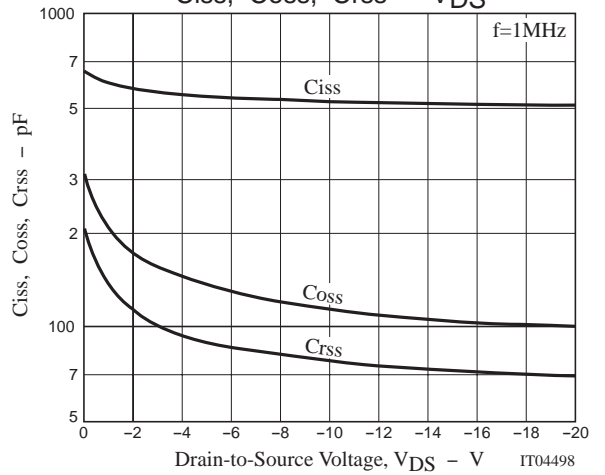
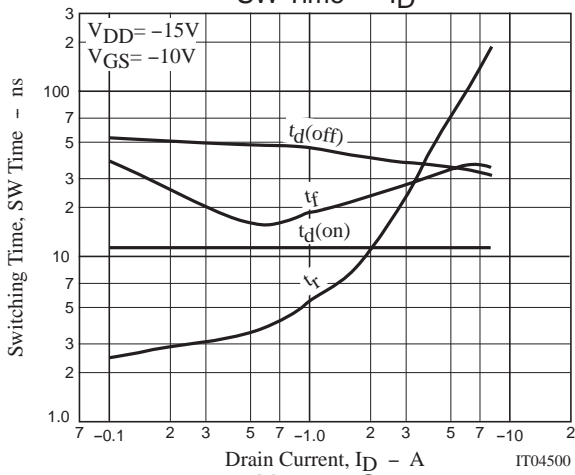
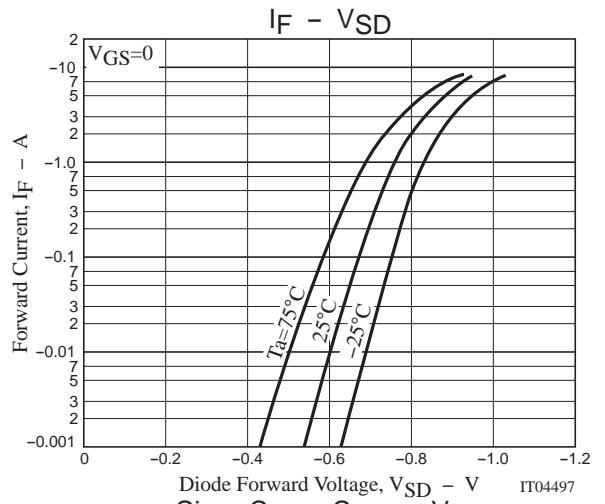
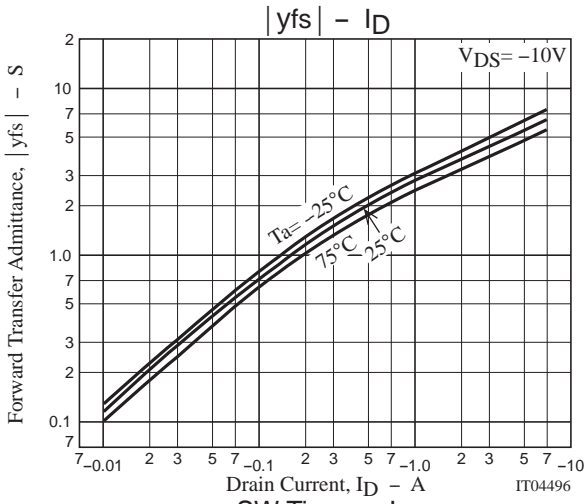
## Package Dimensions

unit : mm  
2151B



## Switching Time Test Circuit





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