



ON Semiconductor®

Ordering number : ENN8175

ON Semiconductor DATA SHEET

N-Channel Silicon MOSFET

CPH3430 — General-Purpose Switching Device Applications

Features

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

Specifications

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

Parameter	Symbol	Conditions	Ratings		Unit
Drain-to-Source Voltage	V_{DSS}			60	V
Gate-to-Source Voltage	V_{GSS}			± 10	V
Drain Current (DC)	I_D			2	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$		8	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (900mm 2 \times 0.8mm)		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	$V_{(BR)DSS}$	$I_D=1\text{mA}$, $V_{GS}=0$	60			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60\text{V}$, $V_{GS}=0$			1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 8\text{V}$, $V_{DS}=0$			± 10	μA
Cutoff Voltage	$V_{GS(\text{off})}$	$V_{DS}=10\text{V}$, $I_D=1\text{mA}$	0.4		1.3	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10\text{V}$, $I_D=1\text{A}$	1.8	3.6		S
Static Drain-to-Source On-State Resistance	$R_{DS(\text{on})1}$	$I_D=1\text{A}$, $V_{GS}=4\text{V}$		170	220	$\text{m}\Omega$
	$R_{DS(\text{on})2}$	$I_D=1\text{A}$, $V_{GS}=2.5\text{V}$		190	270	$\text{m}\Omega$
Input Capacitance	C_{iss}	$V_{DS}=20\text{V}$, $f=1\text{MHz}$		325		pF
Output Capacitance	C_{oss}	$V_{DS}=20\text{V}$, $f=1\text{MHz}$		29		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=20\text{V}$, $f=1\text{MHz}$		21		pF
Turn-ON Delay Time	$t_{d(\text{on})}$	See specified Test Circuit.		11		ns
Rise Time	t_r	See specified Test Circuit.		17		ns
Turn-OFF Delay Time	$t_{d(\text{off})}$	See specified Test Circuit.		40		ns
Fall Time	t_f	See specified Test Circuit.		27		ns

Marking : ZF

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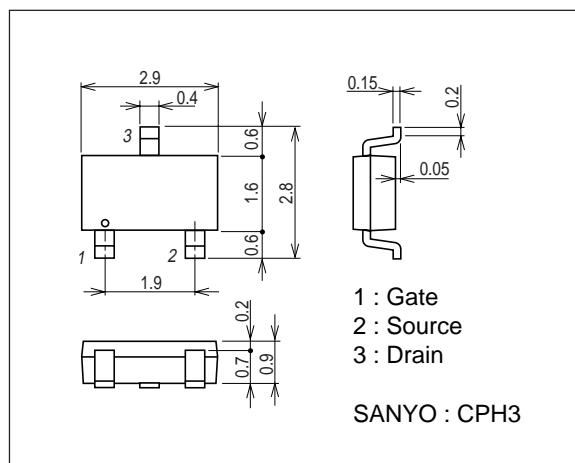
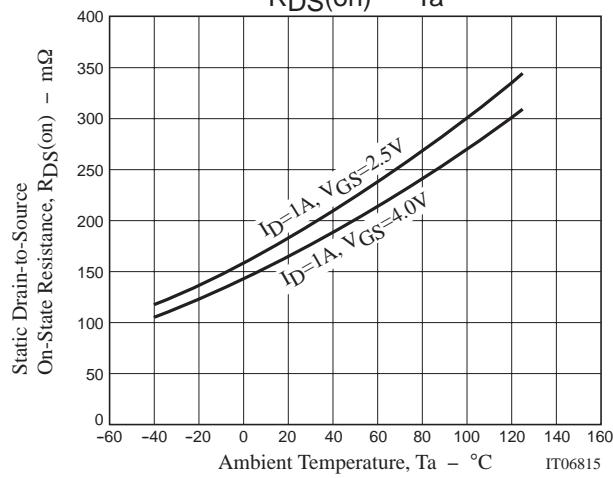
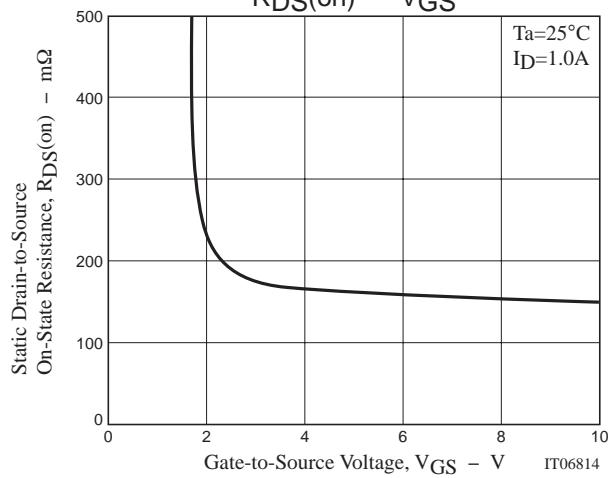
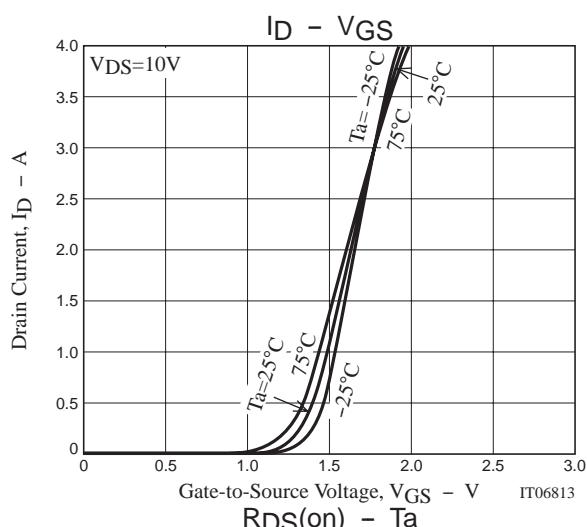
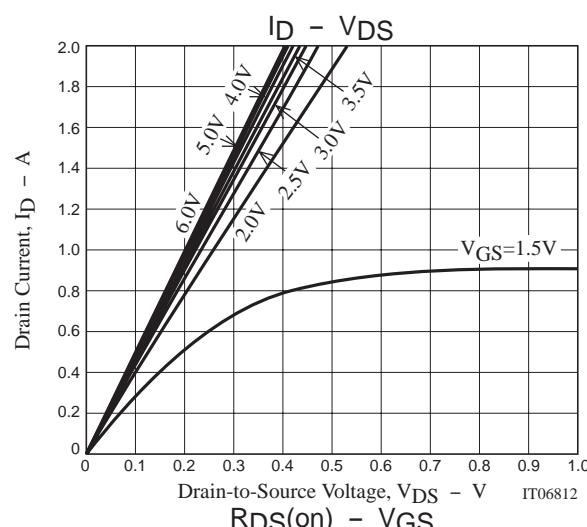
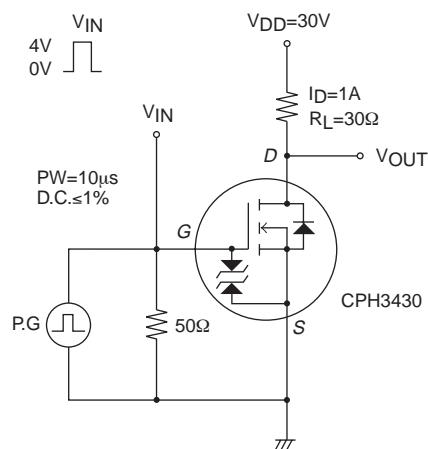
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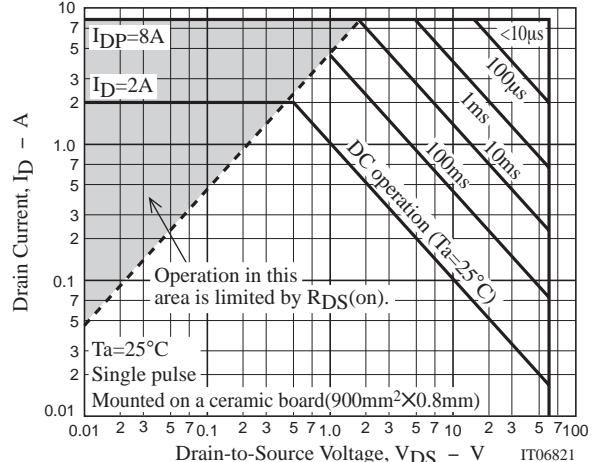
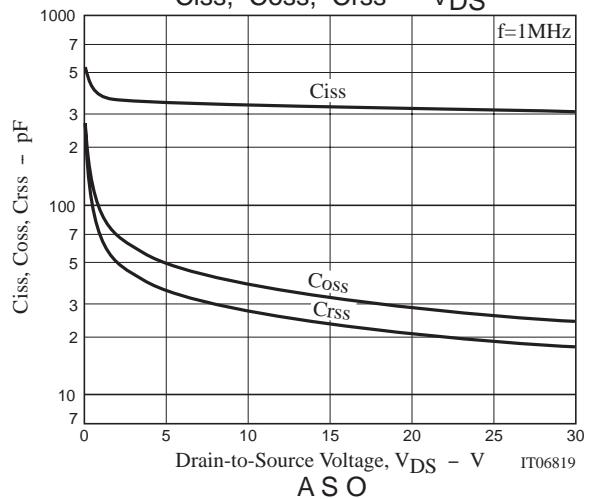
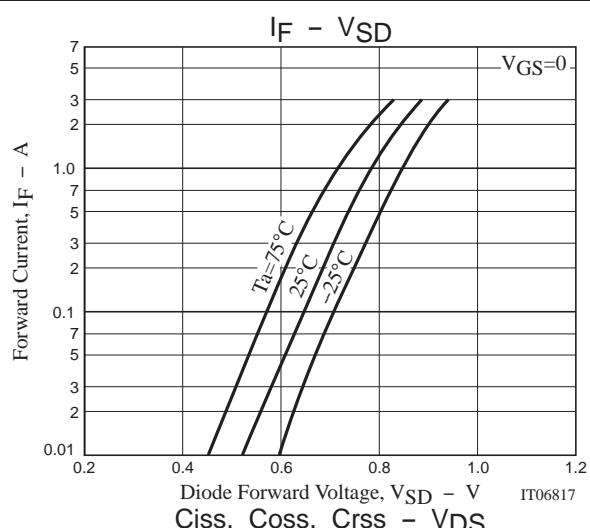
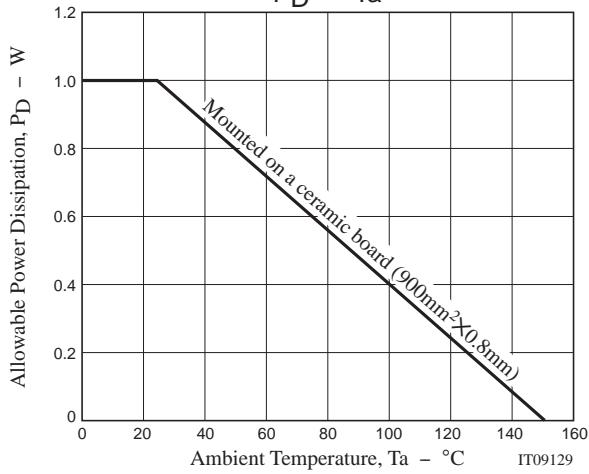
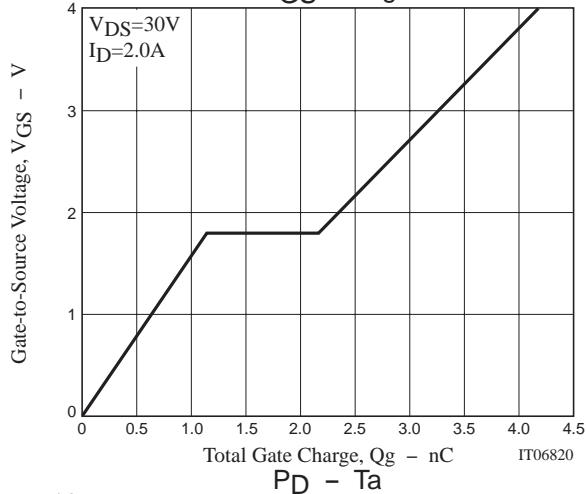
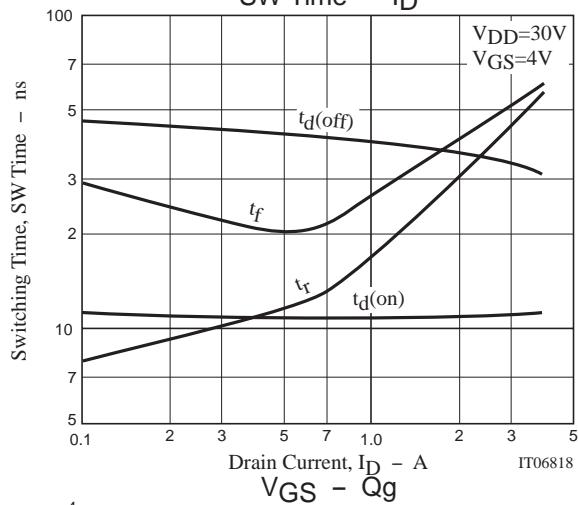
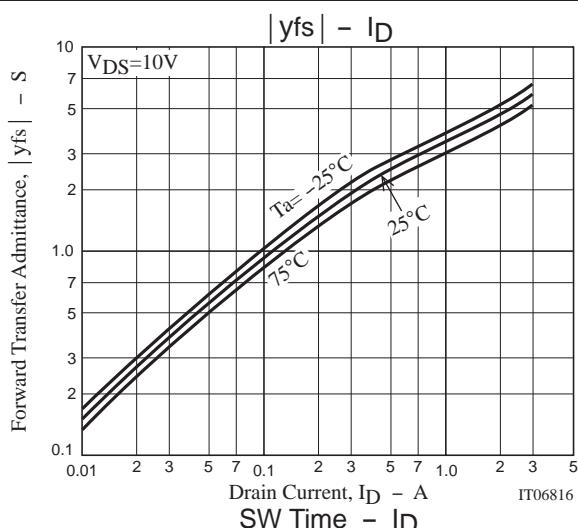
Parameter	Symbol	Conditions	Ratings			Unit	
			min	typ	max		
Total Gate Charge	Qg	$V_{DS}=30V, V_{GS}=4V, I_D=2A$			4.2	nC	
Gate-to-Source Charge	Qgs	$V_{DS}=30V, V_{GS}=4V, I_D=2A$			1.1	nC	
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=30V, V_{GS}=4V, I_D=2A$			1.1	nC	
Diode Forward Voltage	V _{SD}	$I_S=2A, V_{GS}=0$			0.86	1.2	V

Package Dimensions

unit : mm

2152A

**Switching Time Test Circuit**



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