



ON Semiconductor®

**ON Semiconductor
DATA SHEET****CPH6429** — N-Channel Silicon MOSFET
Ultrahigh-Speed Switching 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_{DS}		60	V
Gate-to-Source Voltage	V_{GS}		± 10	V
Drain Current (DC)	I_D		2	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycles $\leq 1\%$	8	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (1200mm ² ×0.8mm)	1.6	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	$V_{GS(off)}$	$V_{DS}=10\text{V}$, $I_D=1\text{mA}$	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	$R_{DS(on)1}$	$I_D=1\text{A}$, $V_{GS}=4\text{V}$		170	220	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D=1\text{A}$, $V_{GS}=2.5\text{V}$		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	$t_{d(on)}$	See specified Test Circuit		11		ns
Rise Time	t_r	See specified Test Circuit		17		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		40		ns
Fall Time	t_f	See specified Test Circuit		27		ns

Marking : ZF

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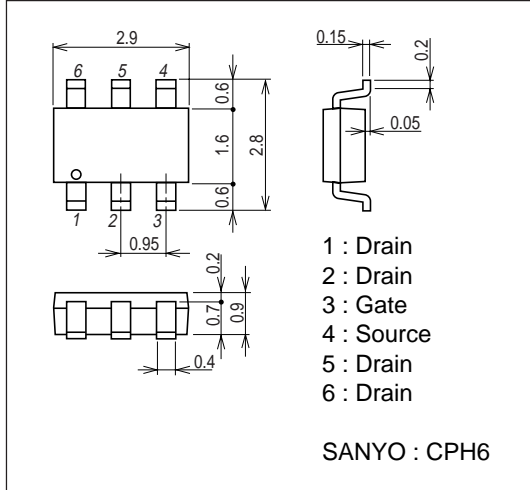
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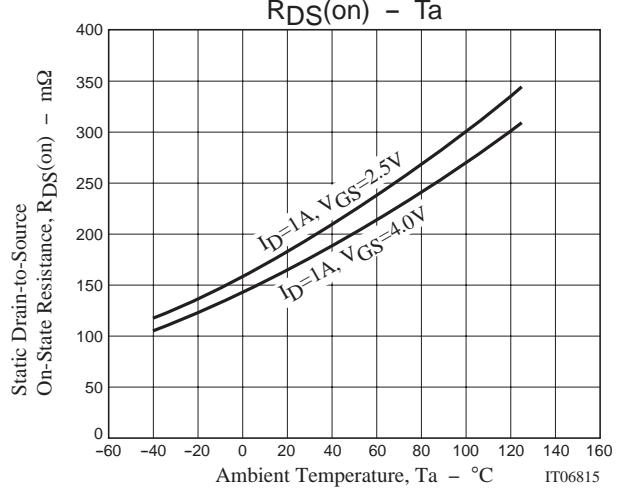
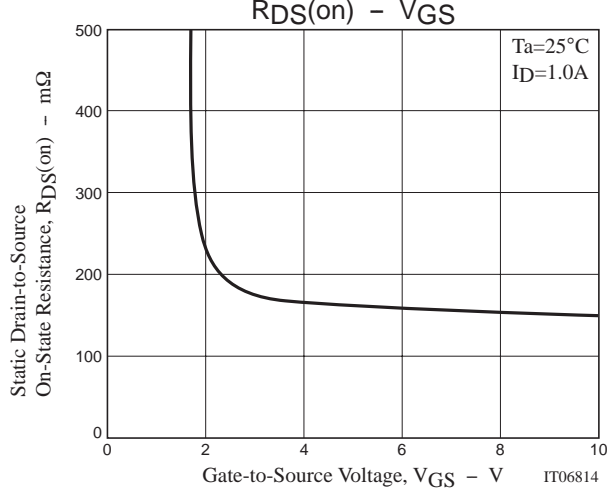
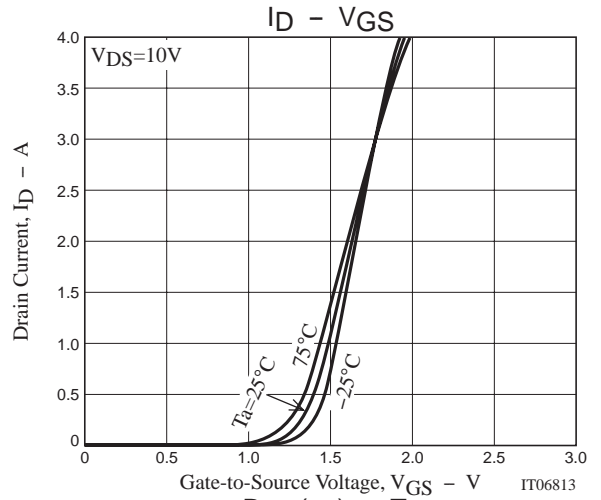
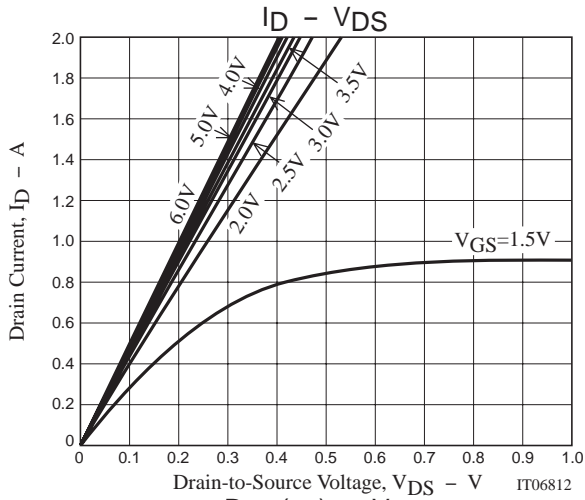
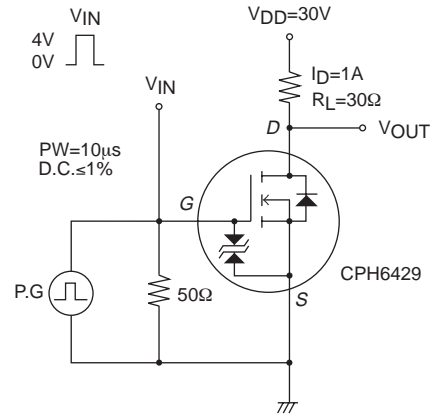
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Qg	V _{DS} =30V, V _{GS} =4V, I _D =2A		4.2		nC
Gate-to-Source Charge	Qgs	V _{DS} =30V, V _{GS} =4V, I _D =2A		1.1		nC
Gate-to-Drain "Miller" Charge	Qgd	V _{DS} =30V, V _{GS} =4V, I _D =2A		1.1		nC
Diode Forward Voltage	V _{SD}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

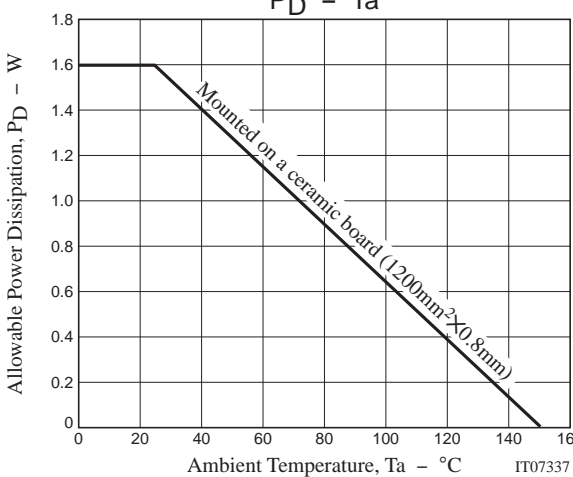
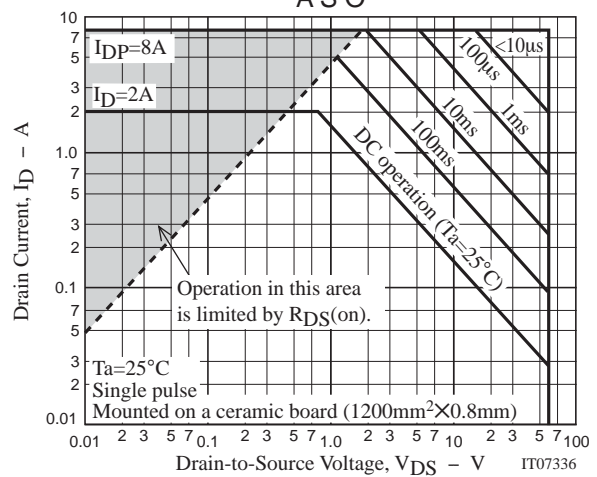
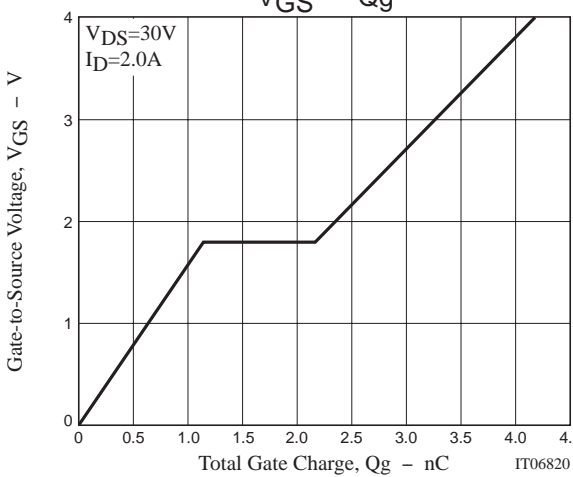
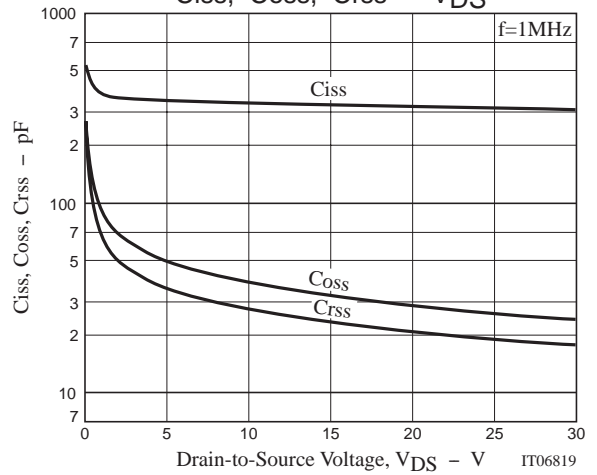
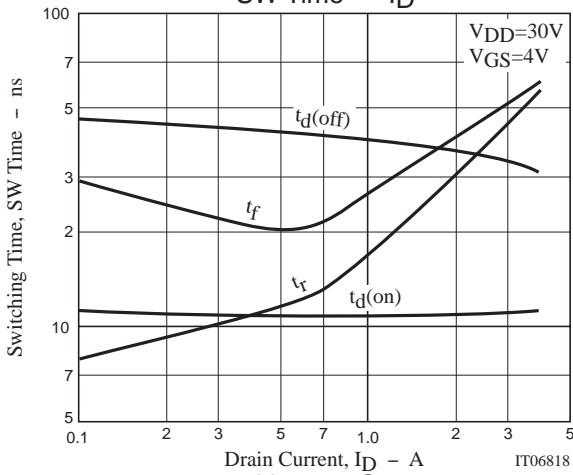
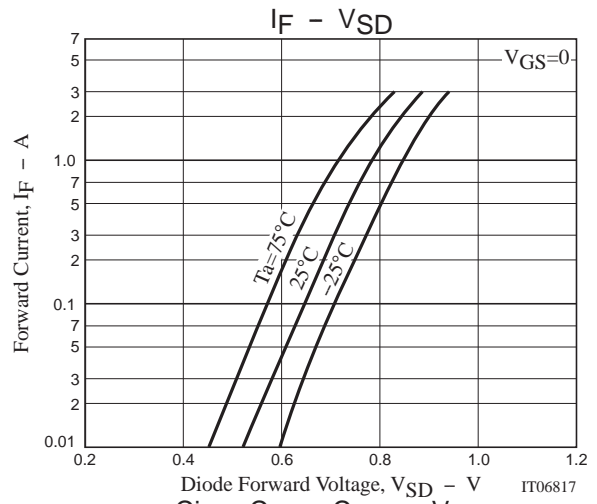
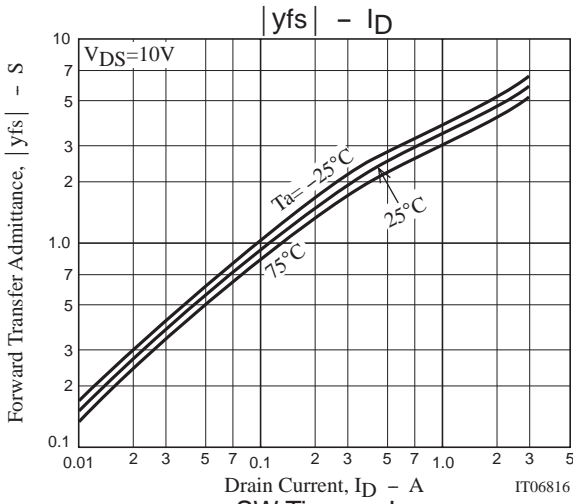
Package Dimensions

unit : mm
2151A



Switching Time Test Circuit





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