



ON Semiconductor®

ON Semiconductor
DATA SHEET

N-Channel Silicon MOSFET

CPH3437 — 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_{DS}		20	V
Gate-to-Source Voltage	V_{GS}		± 10	V
Drain Current (DC)	I_D		4.5	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	18	A
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (900mm ² ×0.8mm)	1.0	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	$V_{(BR)DSS}$	$I_D=1\text{mA}$, $V_{GS}=0\text{V}$	20			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=20\text{V}$, $V_{GS}=0\text{V}$			1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 8\text{V}$, $V_{DS}=0\text{V}$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10\text{V}$, $I_D=1\text{mA}$	0.4		1.4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10\text{V}$, $I_D=2.5\text{A}$	4	6.8		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=2\text{A}$, $V_{GS}=4.5\text{V}$		28	39	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D=2\text{A}$, $V_{GS}=4\text{V}$		29	40	$\text{m}\Omega$
	$R_{DS(on)3}$	$I_D=1\text{A}$, $V_{GS}=2.5\text{V}$		39	55	$\text{m}\Omega$

Marking : ZM

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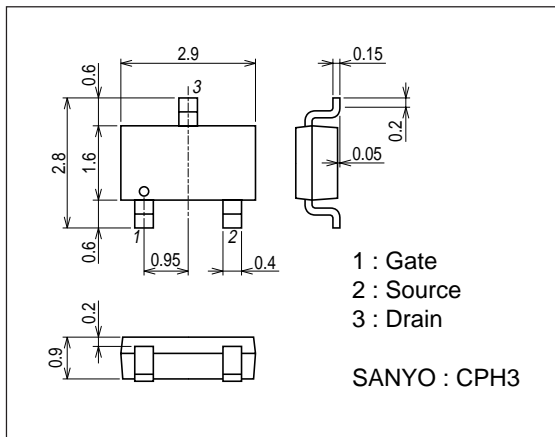
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS}=10V$, $f=1MHz$		755		pF
Output Capacitance	Coss	$V_{DS}=10V$, $f=1MHz$		155		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=10V$, $f=1MHz$		135		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		17		ns
Rise Time	t_r	See specified Test Circuit.		100		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		68		ns
Fall Time	t_f	See specified Test Circuit.		85		ns
Total Gate Charge	Qg	$V_{DS}=10V$, $V_{GS}=4V$, $I_D=4.5A$		9.9		nC
Gate-to-Source Charge	Qgs	$V_{DS}=10V$, $V_{GS}=4V$, $I_D=4.5A$		1.35		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=10V$, $V_{GS}=4V$, $I_D=4.5A$		3.5		nC
Diode Forward Voltage	V_{SD}	$I_S=4.5A$, $V_{GS}=0V$		0.84	1.2	V

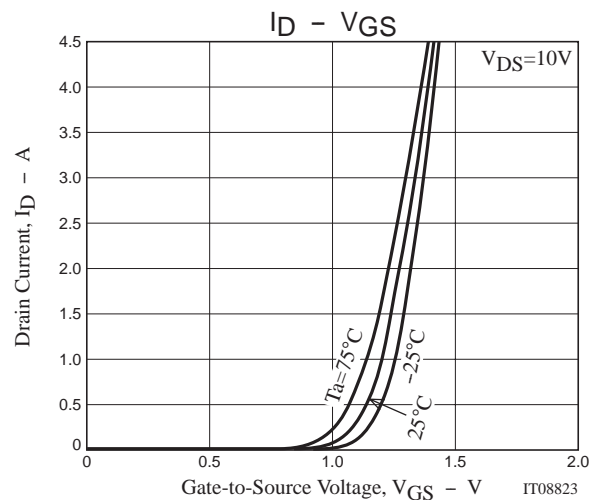
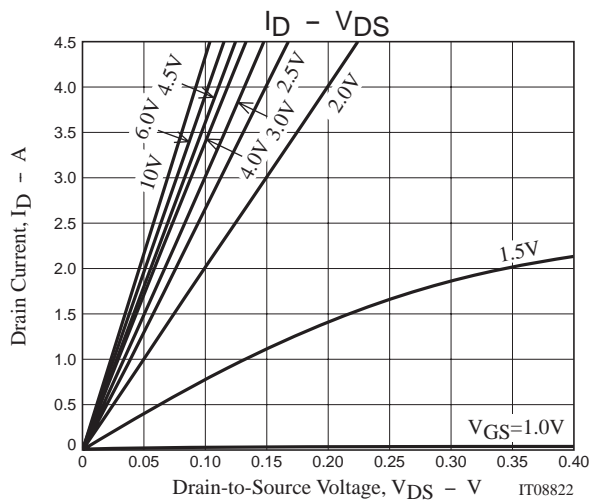
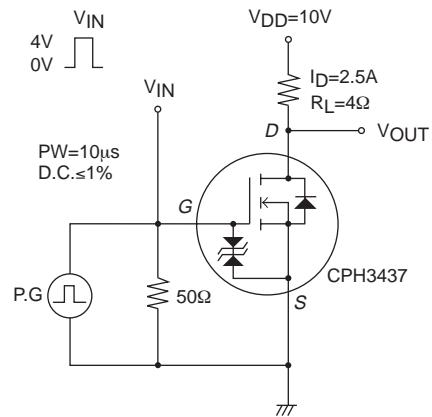
Package Dimensions

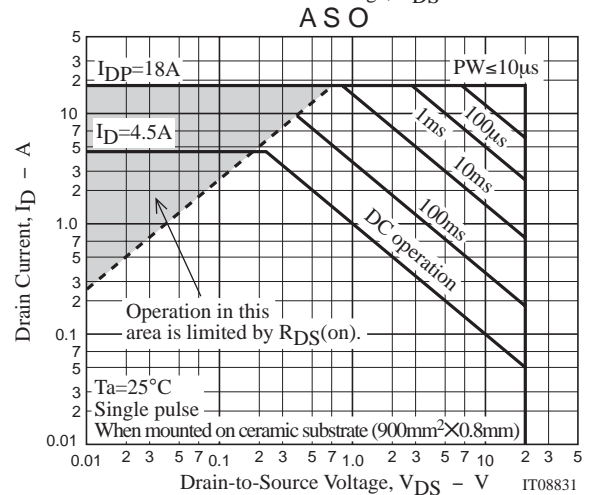
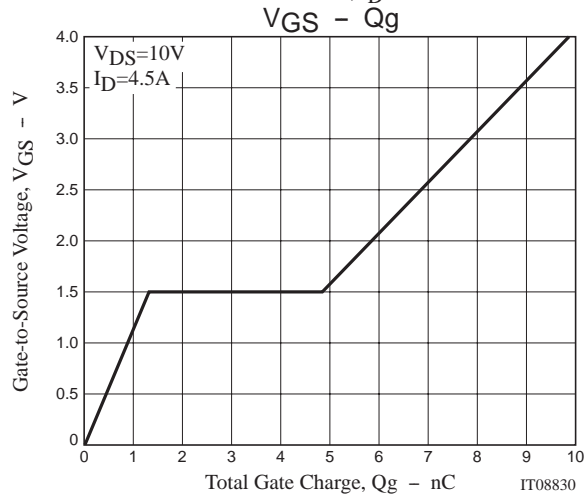
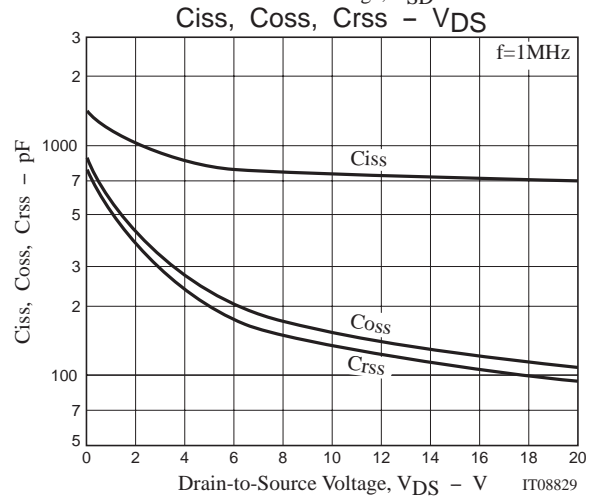
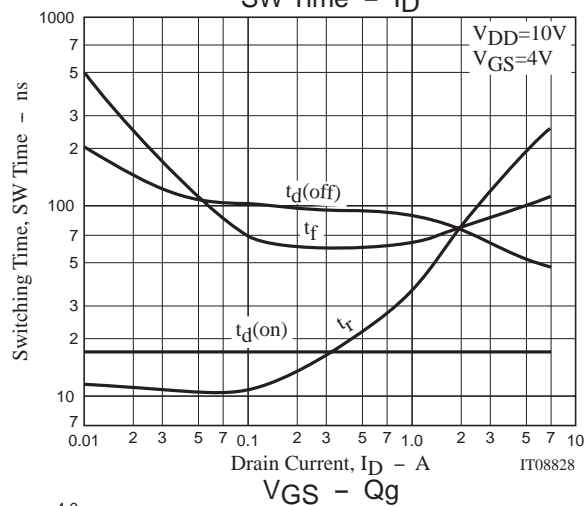
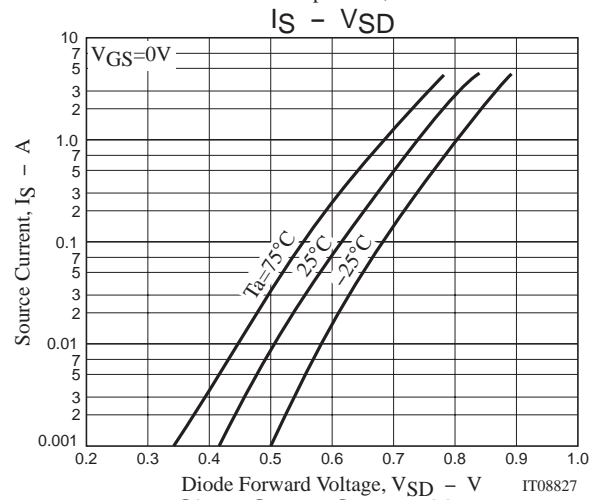
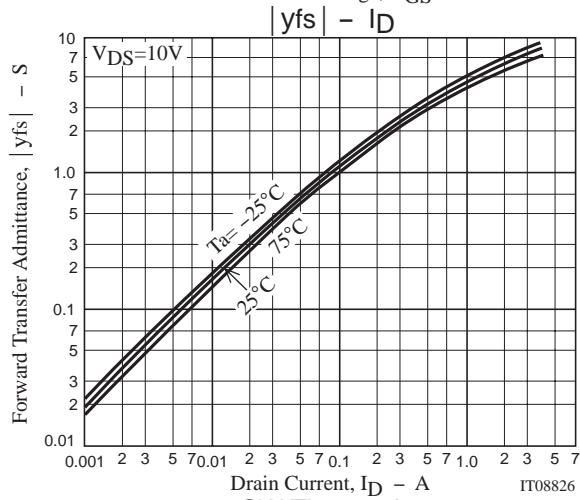
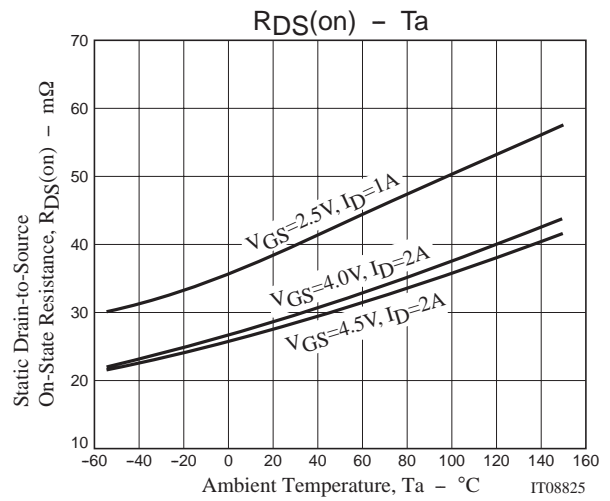
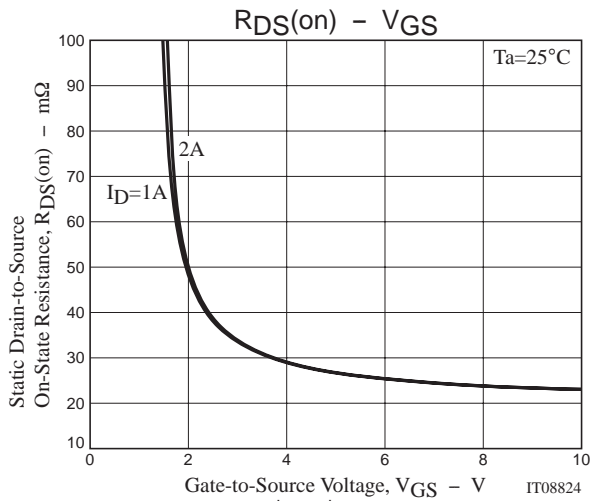
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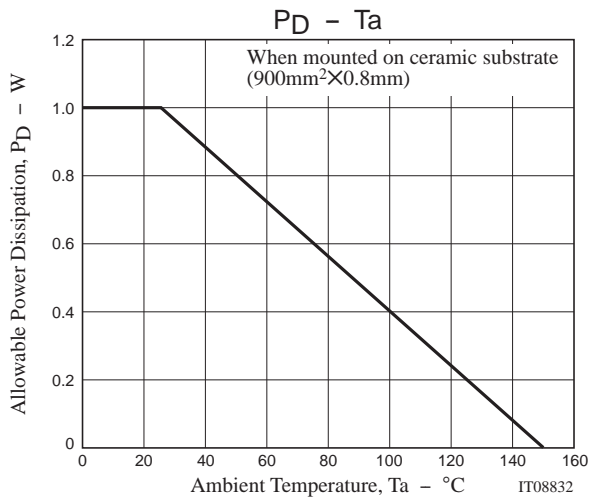
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Switching Time Test Circuit







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