



ON Semiconductor®

Ordering number : EN6794A

ON Semiconductor DATA SHEET

P-Channel Silicon MOSFET

CPH6311—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}			-20	V
Gate-to-Source Voltage	V_{GSS}			± 10	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)		1.6	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	$V_{(BR)DSS}$	$I_D = -1\text{mA}$, $V_{GS} = 0\text{V}$	-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	$V_{GS(\text{off})}$	$V_{DS} = -10\text{V}$, $I_D = -1\text{mA}$	-0.4		-1.4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -10\text{V}$, $I_D = -3\text{A}$	5.8	8.5		S
Static Drain-to-Source On-State Resistance	$R_{DS(\text{on})1}$	$I_D = -3\text{A}$, $V_{GS} = -4.5\text{V}$		32	42	$\text{m}\Omega$
	$R_{DS(\text{on})2}$	$I_D = -1\text{A}$, $V_{GS} = -2.5\text{V}$		46	60	$\text{m}\Omega$

Marking : JM

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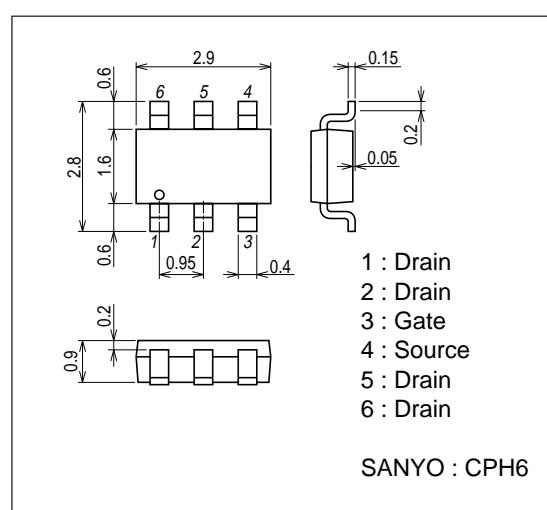
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	C_{iss}	$V_{DS}=-10V, f=1MHz$		1230		pF
Output Capacitance	C_{oss}	$V_{DS}=-10V, f=1MHz$		200		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=-10V, f=1MHz$		170		pF
Turn-ON 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.		100		ns
Fall Time	t_f	See specified Test Circuit.		95		ns
Total Gate Charge	Q_g	$V_{DS}=-10V, V_{GS}=-10V, I_D=-5A$		31		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=-10V, V_{GS}=-10V, I_D=-5A$		2.8		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=-10V, V_{GS}=-10V, I_D=-5A$		4.2		nC
Diode Forward Voltage	V_{SD}	$I_S=-5A, V_{GS}=0V$		-0.83	-1.5	V

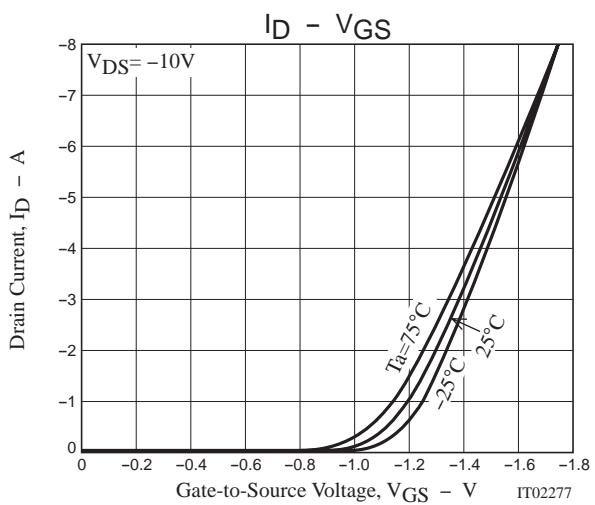
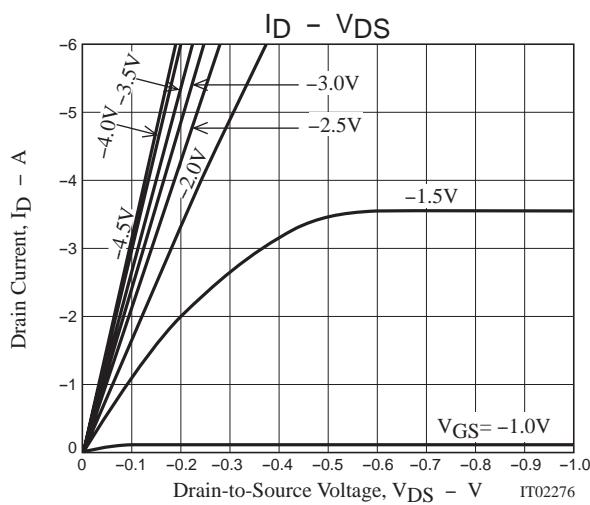
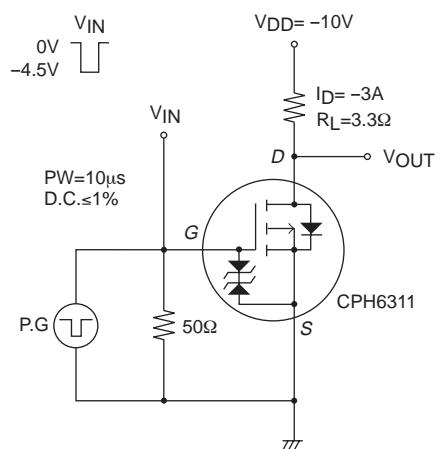
Package Dimensions

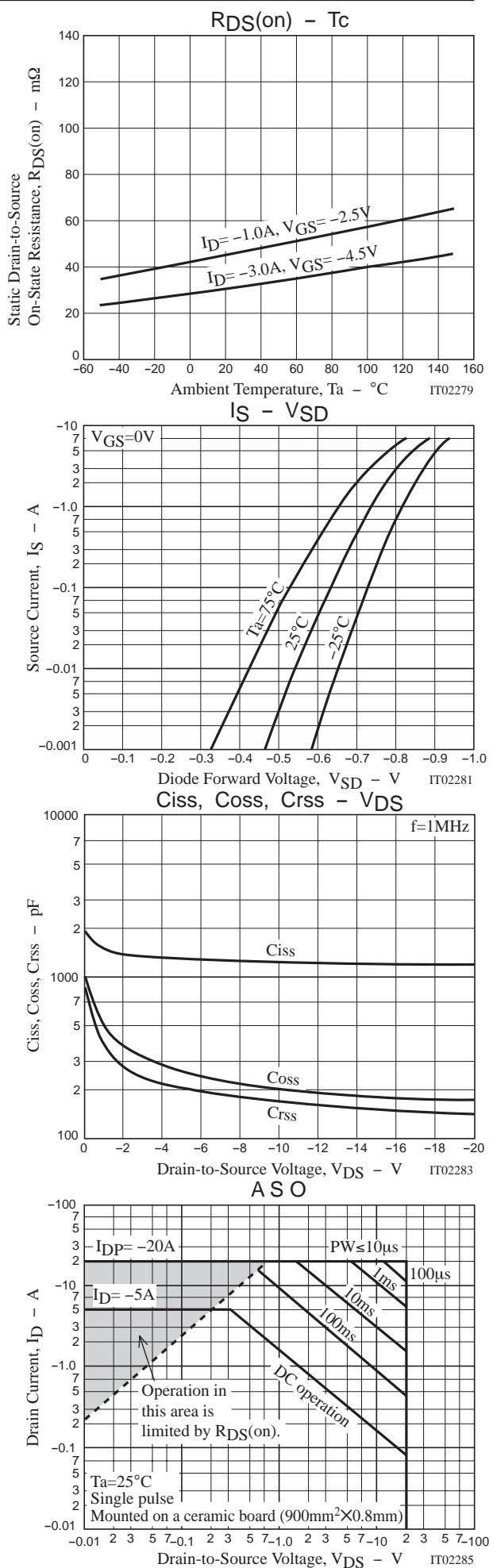
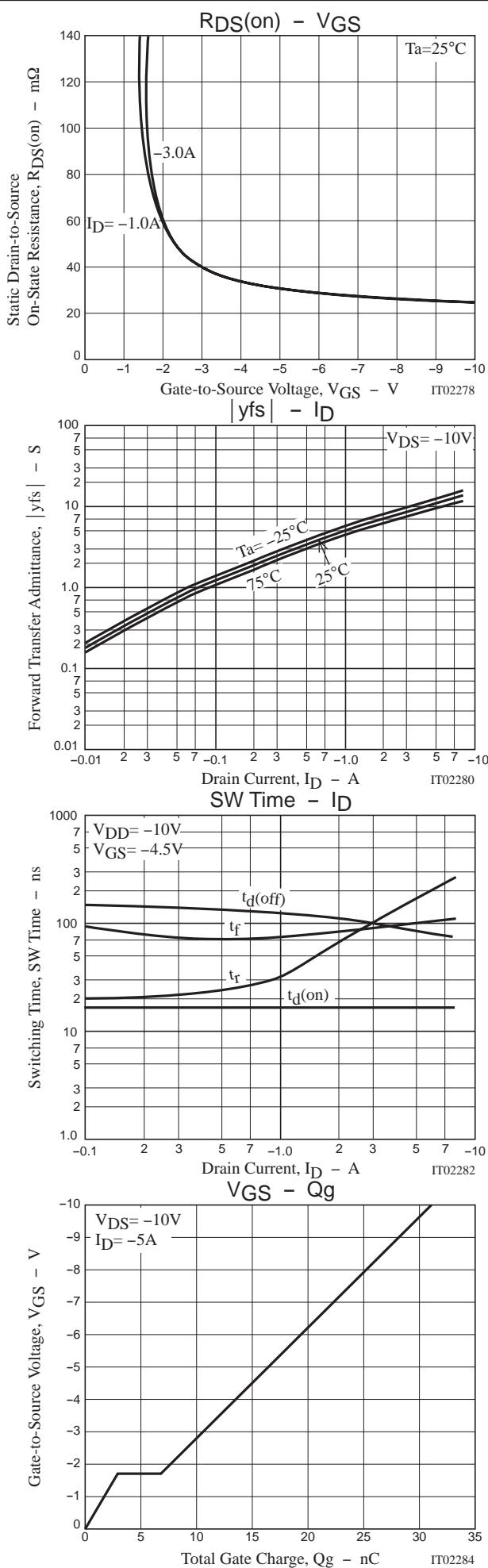
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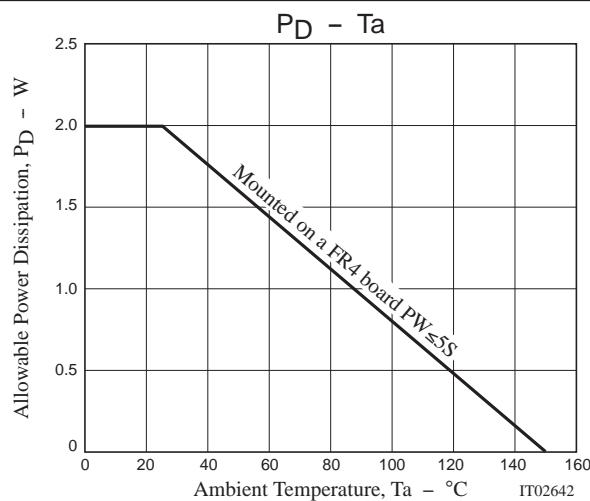
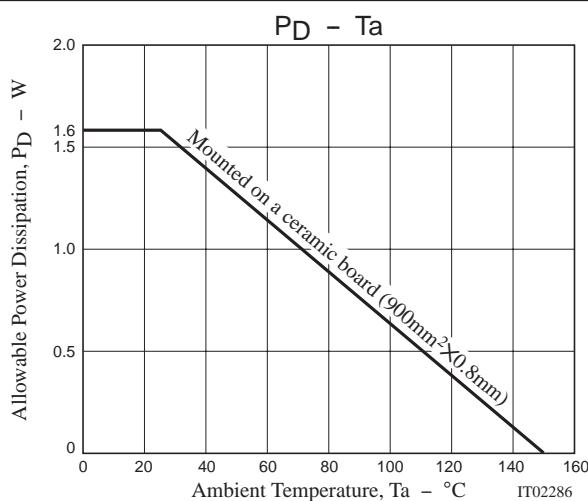
7018A-003



Switching Time Test Circuit







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