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# ON Semiconductor DATA SHEET

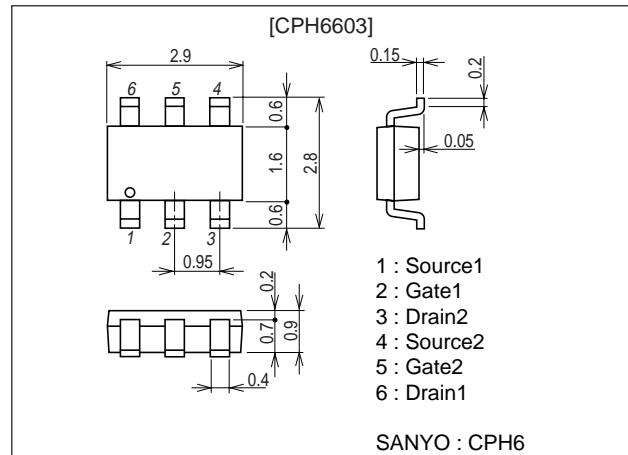
## CPH6603 — P-Channel Silicon MOSFET Ultrahigh-Speed Switching Applications

### Features

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

### Package Dimensions

unit : mm  
2202



### Specifications

#### Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		-30	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±20	V
Drain Current (DC)	I <sub>D</sub>		-1.5	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-6.0	A
Allowable Power Dissipation	P <sub>D</sub>	Mounted on a ceramic board (900mm²×0.8mm)1unit	0.9	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

#### Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	I <sub>D</sub> =-1mA, V <sub>GS</sub> =0	-30			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-30V, V <sub>GS</sub> =0			-1	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±16V, V <sub>DS</sub> =0			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-1mA	-1.2		-2.6	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-0.8A	1.0	1.5		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =-0.8A, V <sub>GS</sub> =-10V		190	250	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =-0.4A, V <sub>GS</sub> =-4V		330	460	mΩ

Marking : FN

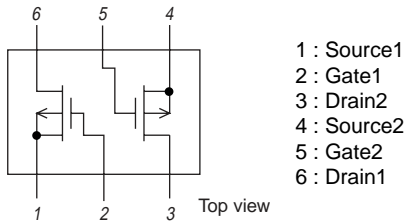
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# CPH6603

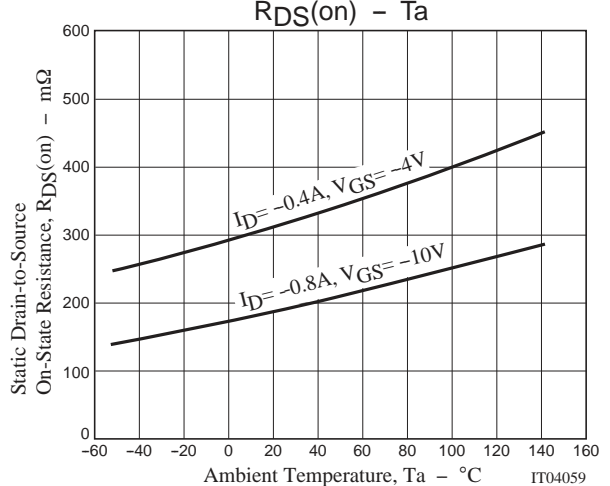
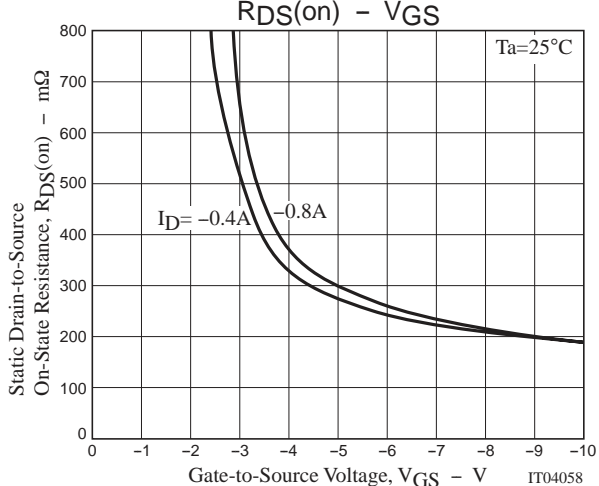
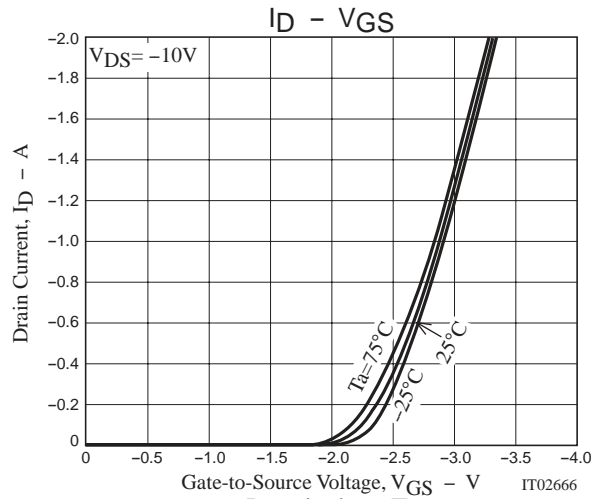
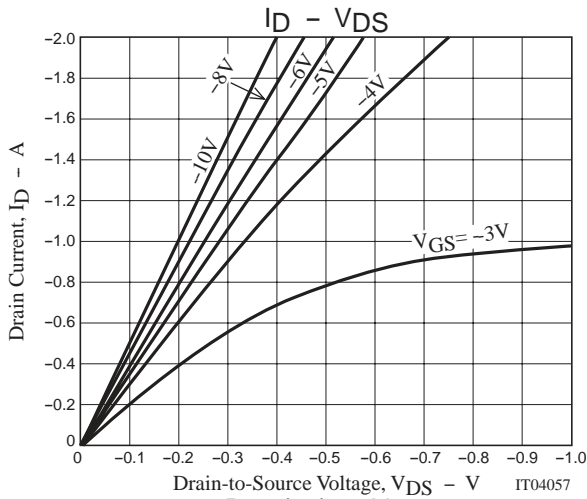
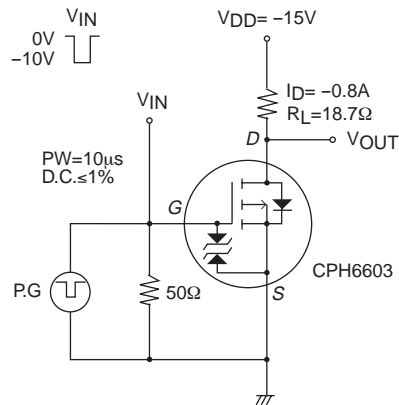
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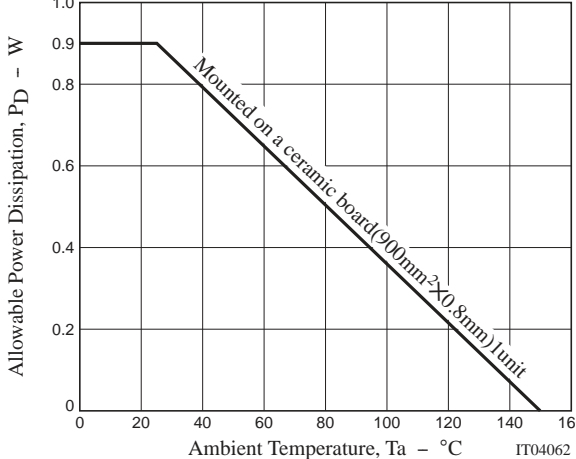
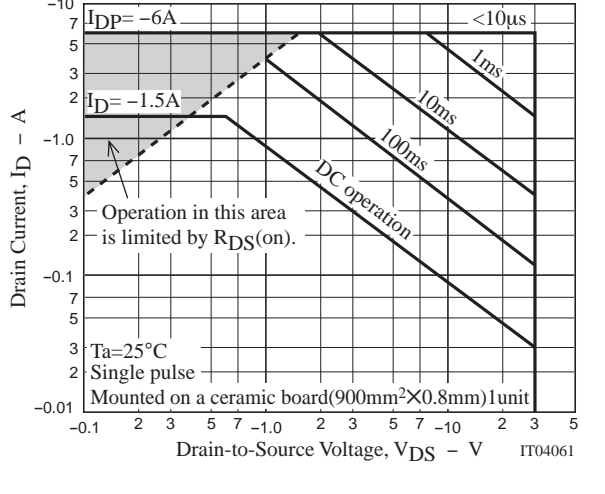
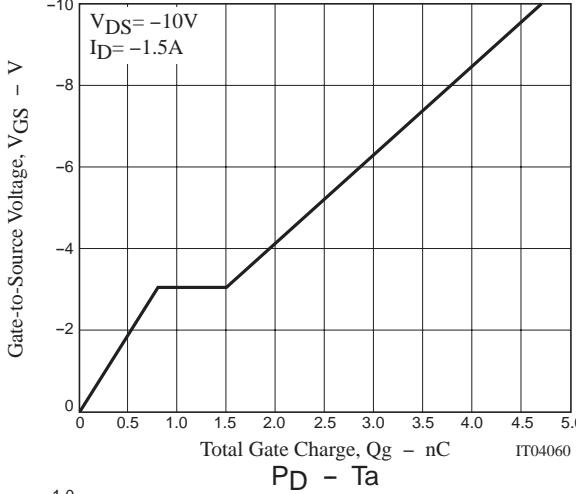
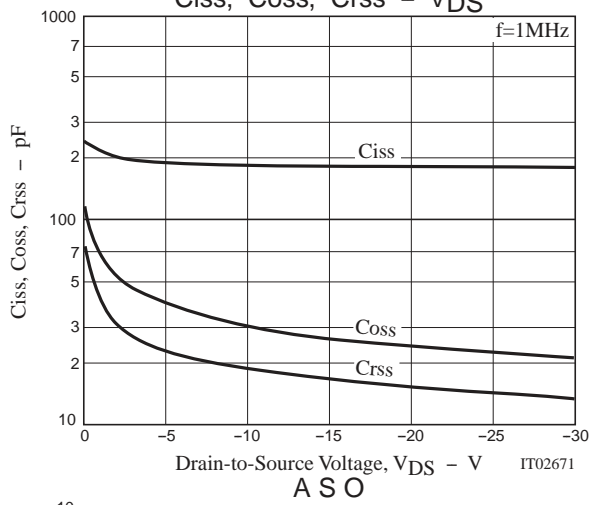
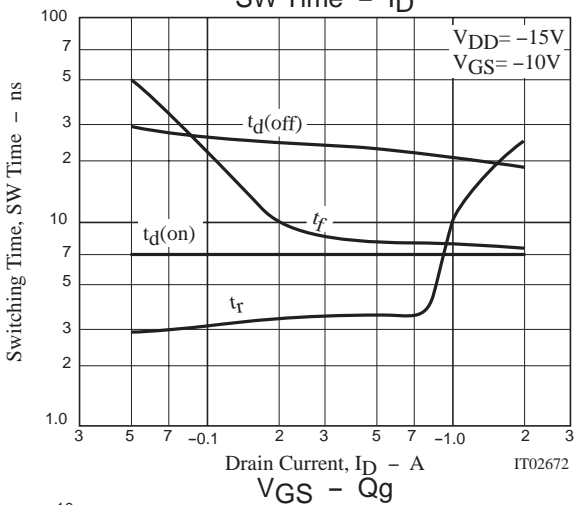
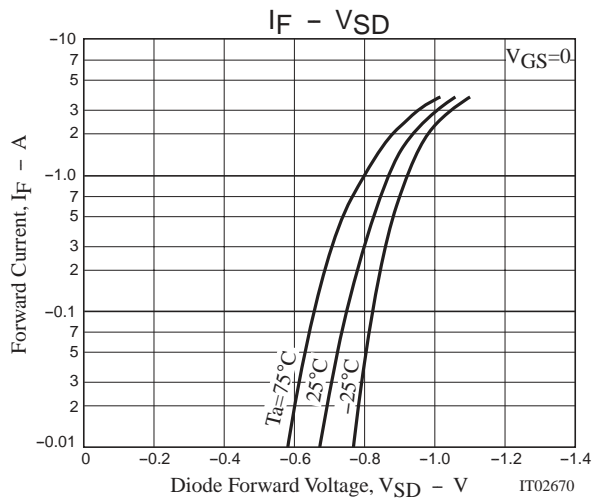
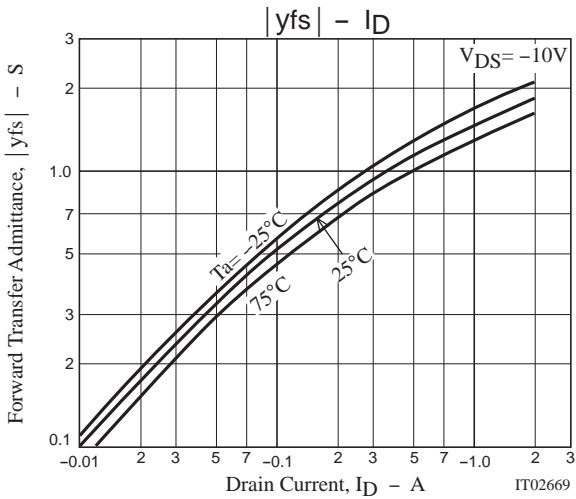
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V <sub>DS</sub> =-10V, f=1MHz		185		pF
Output Capacitance	Coss	V <sub>DS</sub> =-10V, f=1MHz		30		pF
Reverse Transfer Capacitance	Crss	V <sub>DS</sub> =-10V, f=1MHz		20		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See specified Test Circuit.		7		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit.		4		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>	See specified Test Circuit.		22		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit.		8		ns
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-1.5A		4.7		nC
Gate-to-Source Charge	Q <sub>gs</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-1.5A		0.8		nC
Gate-to-Drain "Miller" Charge	Q <sub>gd</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-1.5A		0.7		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-1.5A, V <sub>GS</sub> =0		-0.88	-1.5	V

## Electrical Connection



## Switching Time Test Circuit





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