

**CPH6604**

## Ultrahigh-Speed Switching Applications

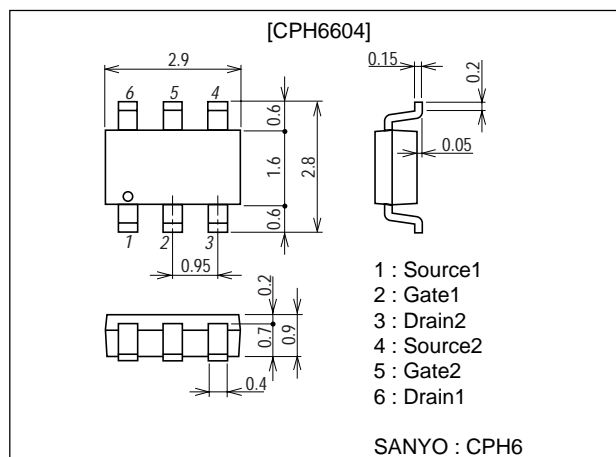
### Features

- 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	$V_{DS}$		30	V
Gate-to-Source Voltage	$V_{GS}$		$\pm 20$	V
Drain Current (DC)	$I_D$		2.0	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu s$ , duty cycle $\leq 1\%$	8.0	A
Allowable Power Dissipation	$P_D$	Mounted on a ceramic board (900mm <sup>2</sup> X 0.8mm) 1unit	0.9	W
Channel Temperature	$T_{ch}$		150	°C
Storage Temperature	$T_{stg}$		-55 to +150	°C

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = 1mA$ , $V_{GS} = 0$	30			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 30V$ , $V_{GS} = 0$			1	$\mu A$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 16V$ , $V_{DS} = 0$			$\pm 10$	$\mu A$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 10V$ , $I_D = 1mA$	1.2		2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = 10V$ , $I_D = 1A$	1.3	1.8		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = 1A$ , $V_{GS} = 10V$		115	150	$m\Omega$
	$R_{DS(on)2}$	$I_D = 0.5A$ , $V_{GS} = 4V$		190	270	$m\Omega$

Marking : FP

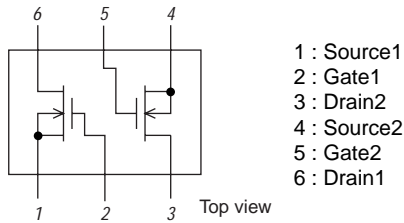
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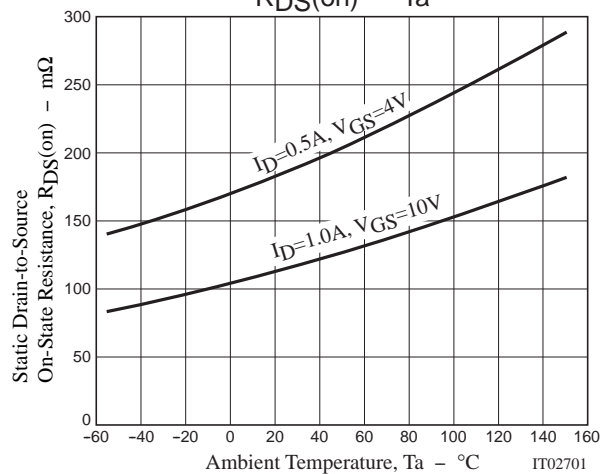
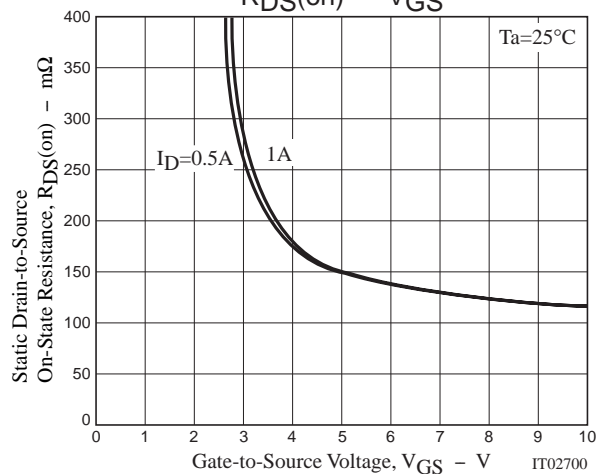
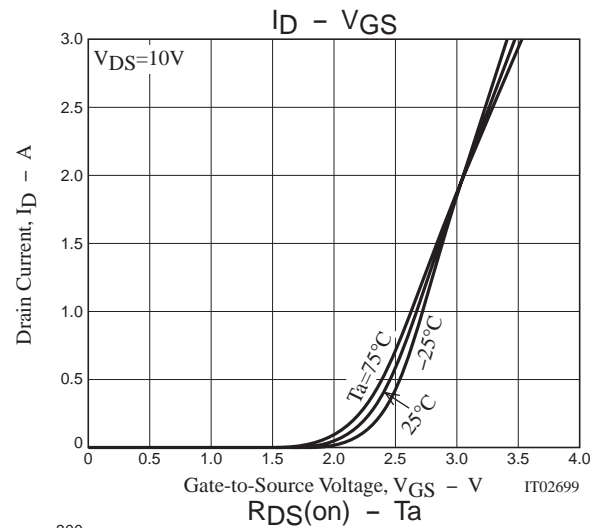
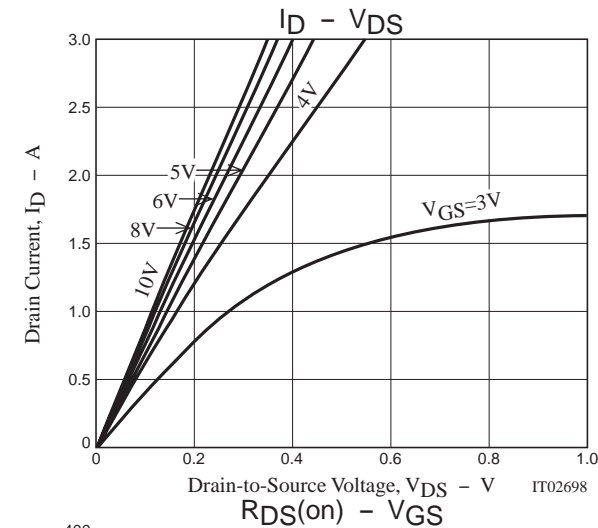
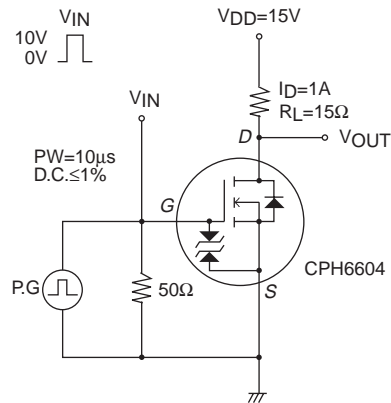
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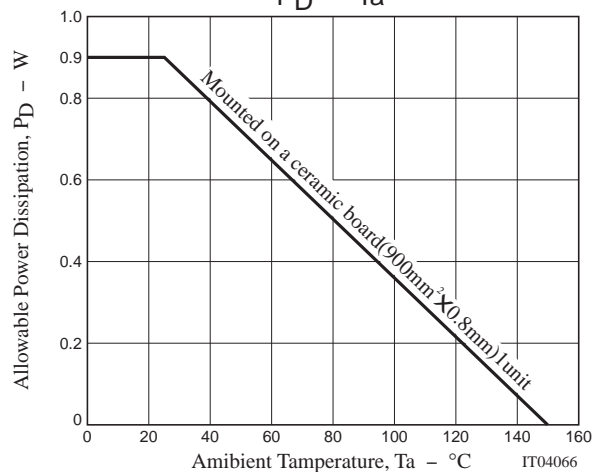
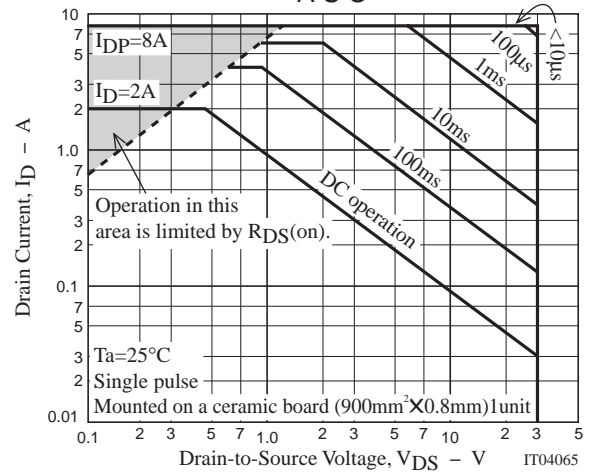
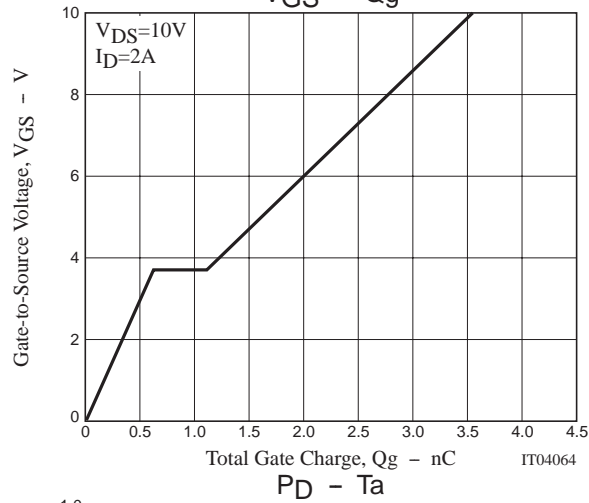
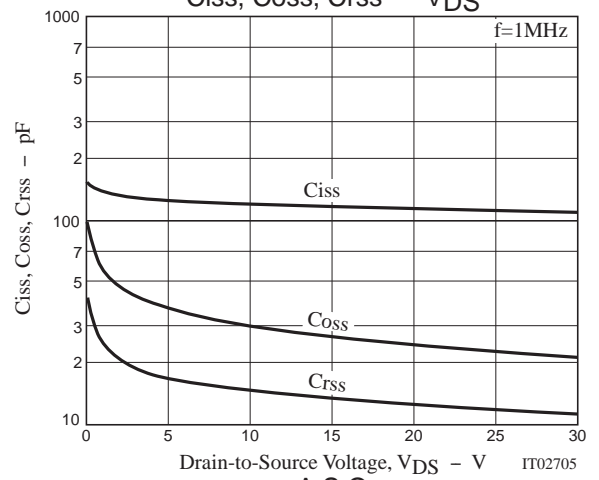
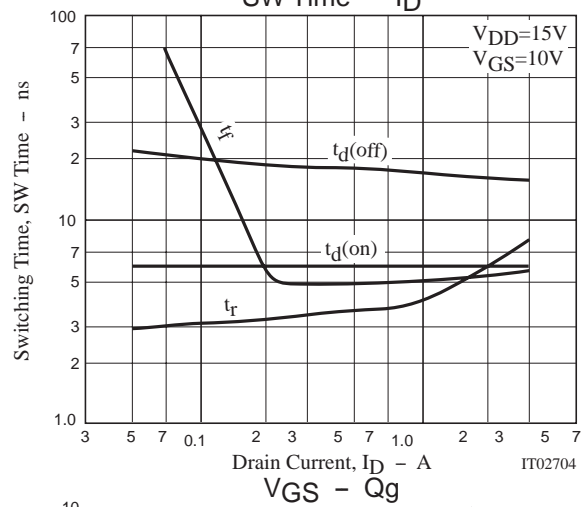
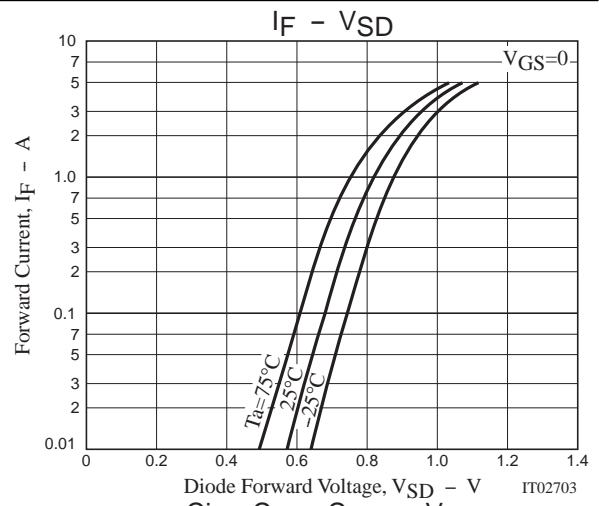
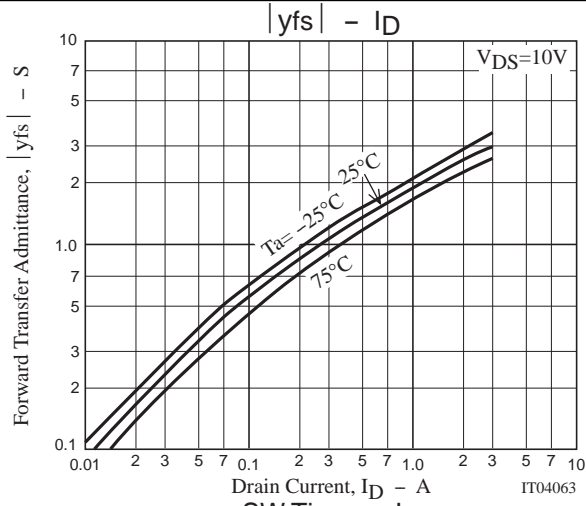
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	$C_{iss}$	$V_{DS}=10V, f=1MHz$		120		pF
Output Capacitance	$C_{oss}$	$V_{DS}=10V, f=1MHz$		30		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=10V, f=1MHz$		15		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		6		ns
Rise Time	$t_r$	See specified Test Circuit.		4		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		17		ns
Fall Time	$t_f$	See specified Test Circuit.		5		ns
Total Gate Charge	$Q_g$	$V_{DS}=10V, V_{GS}=10V, I_D=2.0A$		3.6		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS}=10V, V_{GS}=10V, I_D=2.0A$		0.6		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$	$V_{DS}=10V, V_{GS}=10V, I_D=2.0A$		0.5		nC
Diode Forward Voltage	$V_{SD}$	$I_S=2.0A, V_{GS}=0$		0.87	1.2	V

## Electrical Connection



## Switching Time Test Circuit





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