



CPH3414

Ultrahigh-Speed Switching Applications

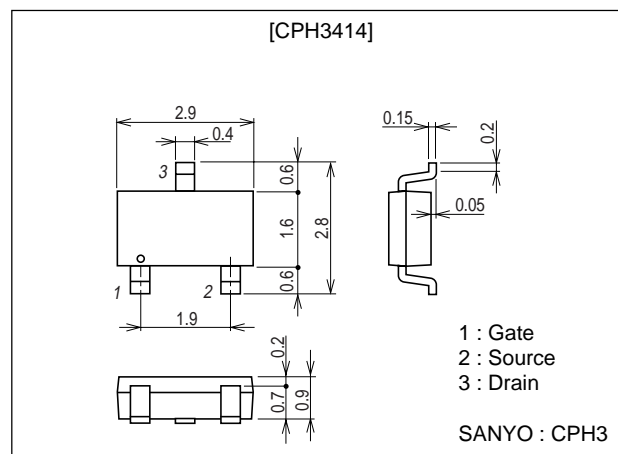
Features

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

Package Dimensions

unit : mm

2152A



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}		±20	V
Drain Current (DC)	I _D		2.2	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	8.8	A
Allowable Power Dissipation	P _D	Mounted on a ceramic board (900mm²×0.8mm)	1.0	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	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±16V, V _{DS} =0			±10	μA
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	1.4	2.0		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =1A, V _{GS} =10V		115	150	mΩ
	R _{DS(on)2}	I _D =0.5A, V _{GS} =4V		190	270	mΩ

Marking : KP

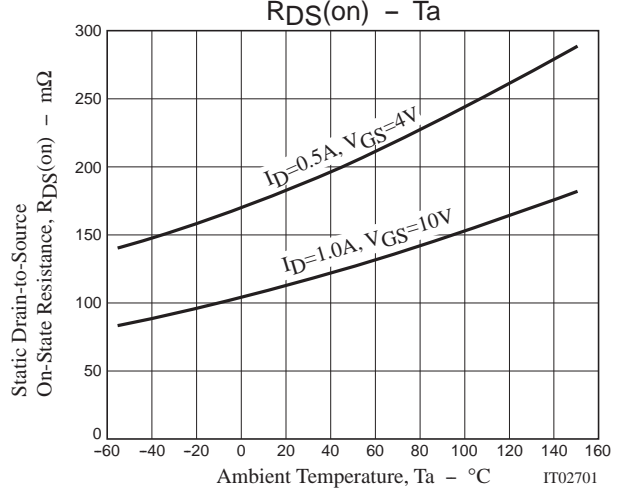
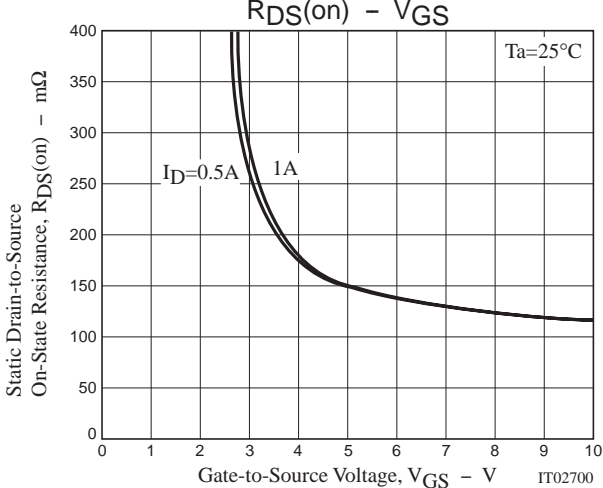
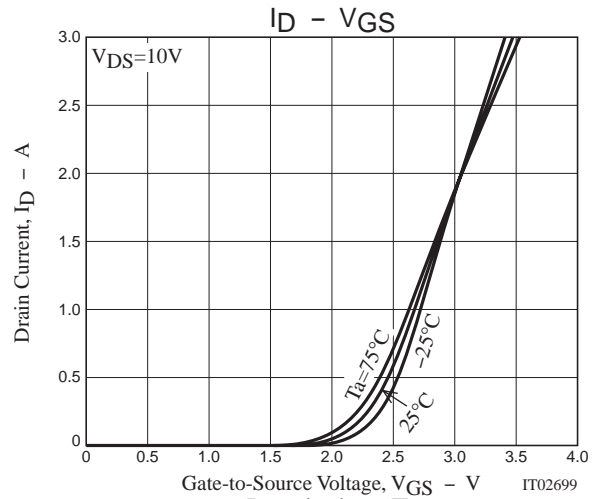
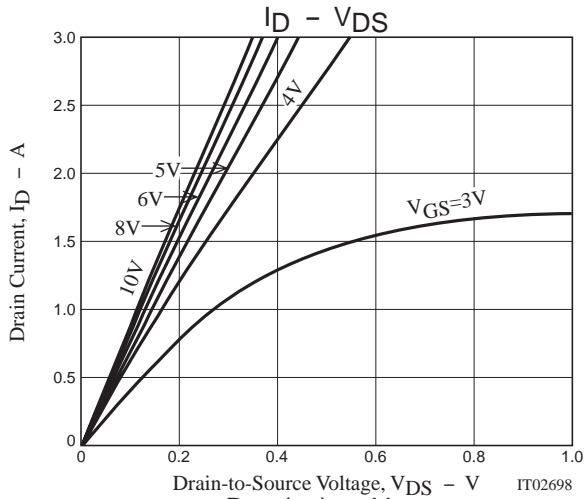
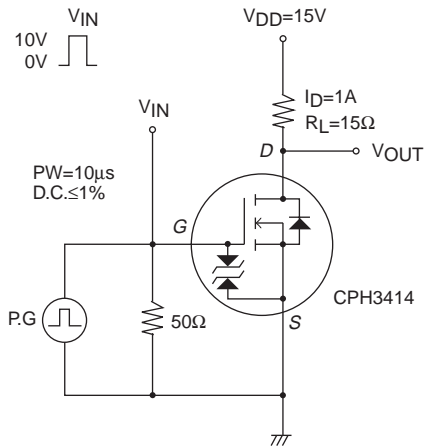
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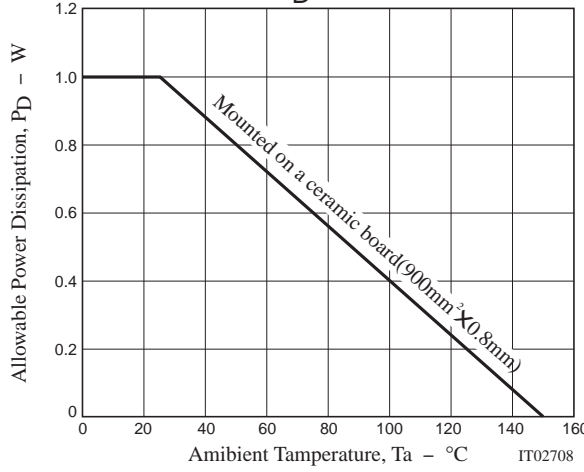
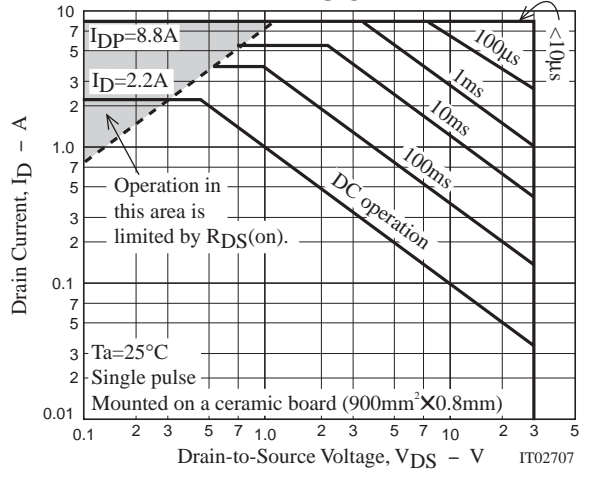
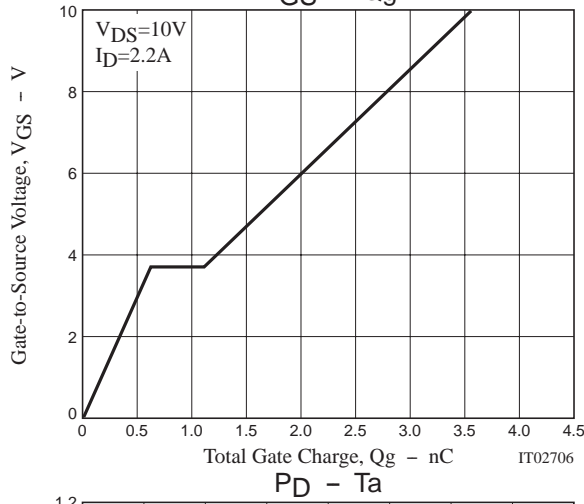
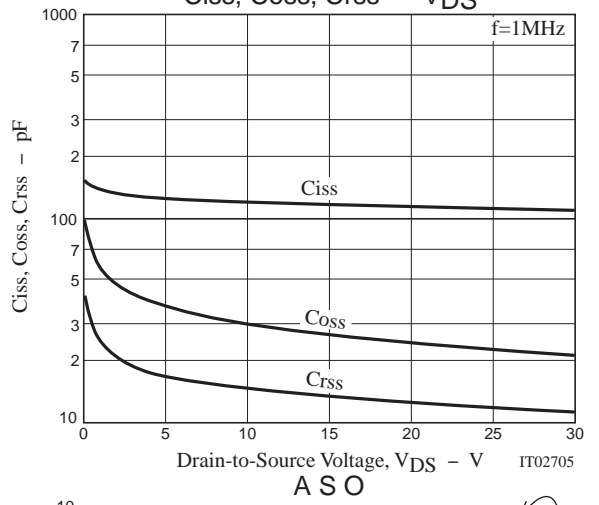
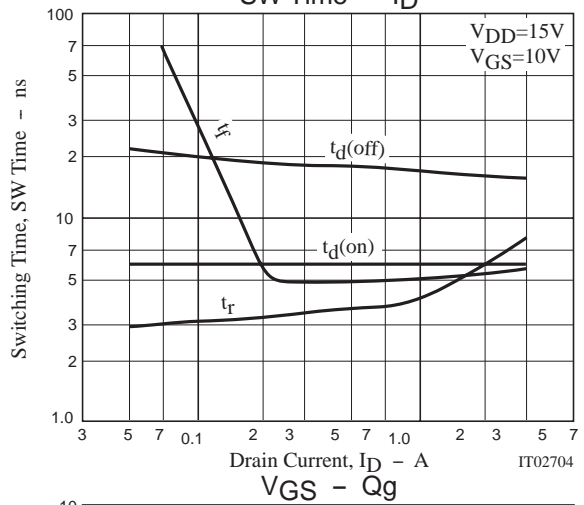
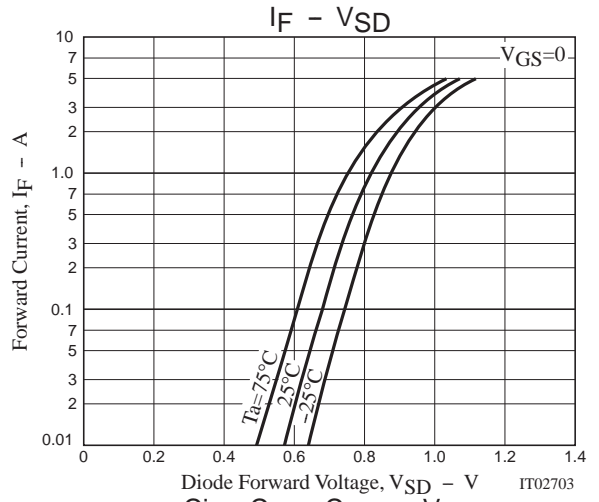
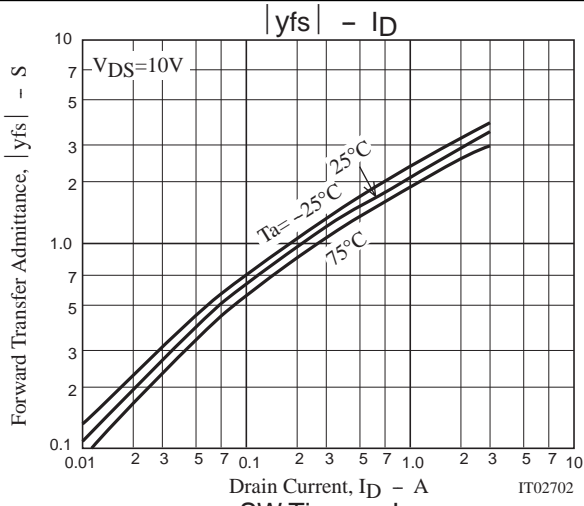
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V _{DS} =10V, f=1MHz		120		pF
Output Capacitance	Coss	V _{DS} =10V, f=1MHz		30		pF
Reverse Transfer Capacitance	Crss	V _{DS} =10V, f=1MHz		15		pF
Turn-ON Delay Time	t _{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	Qg	V _{DS} =10V, V _{GS} =10V, I _D =2.2A		3.6		nC
Gate-to-Source Charge	Qgs	V _{DS} =10V, V _{GS} =10V, I _D =2.2A		0.6		nC
Gate-to-Drain "Miller" Charge	Qgd	V _{DS} =10V, V _{GS} =10V, I _D =2.2A		0.5		nC
Diode Forward Voltage	V _{SD}	I _S =2.2A, V _{GS} =0		0.9	1.2	V

Switching Time Test Circuit





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