

Ordering number : ENN7745

N-Channel Silicon MOSFET



**CPH3418**

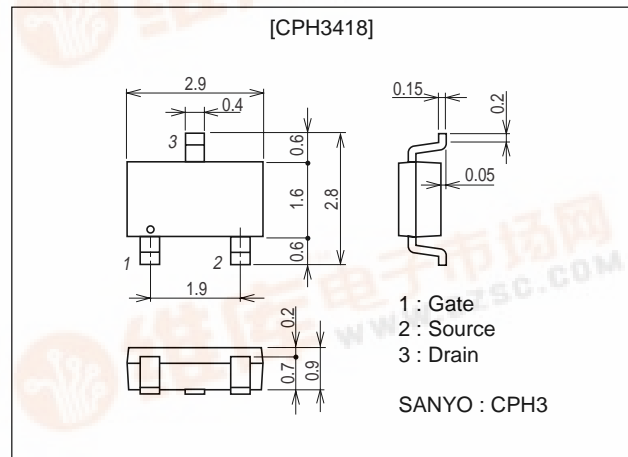
**Ultrahigh-Speed Switching Applications**

**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 <sub>DSS</sub>		30	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±20	V
Drain Current (DC)	I <sub>D</sub>		1.4	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	5.6	A
Allowable Power Dissipation	P <sub>D</sub>	Mounted on a ceramic board (900mm²X0.8mm)	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> =700mA	0.77	1.1		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =700mA, V <sub>GS</sub> =10V		230	300	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =400mA, V <sub>GS</sub> =4V		400	560	mΩ

Marking : KT

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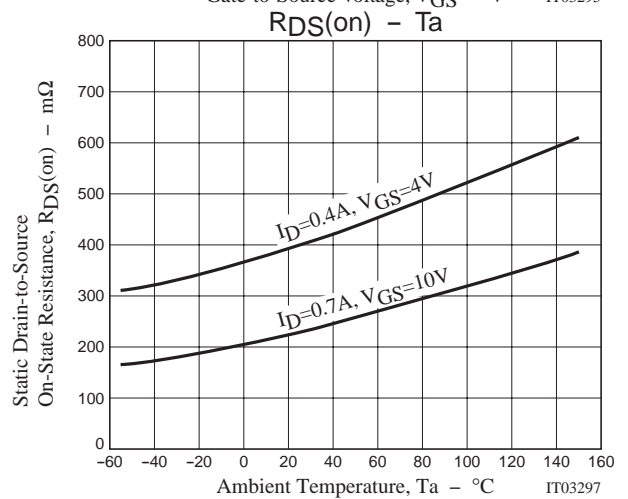
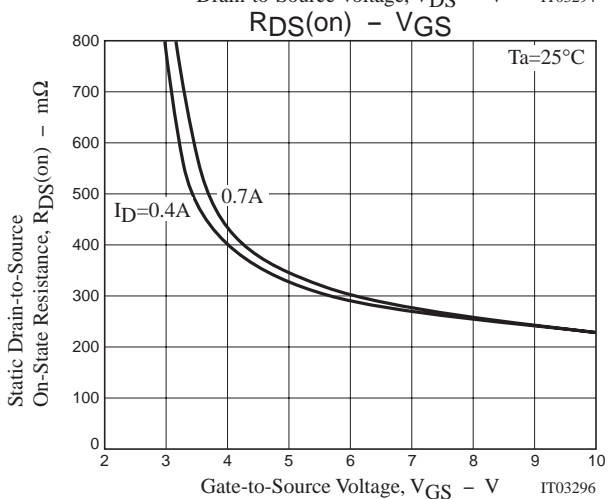
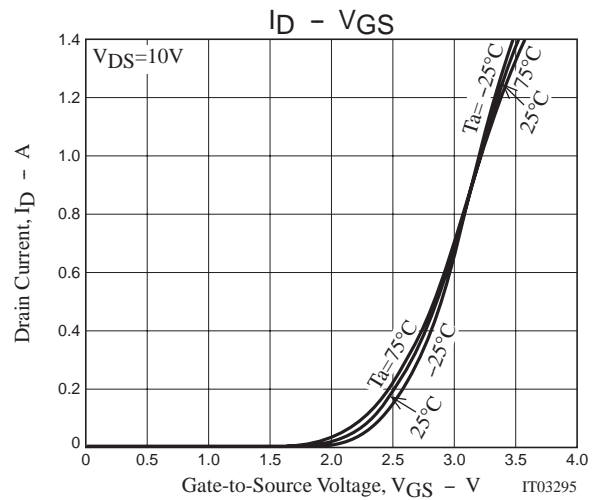
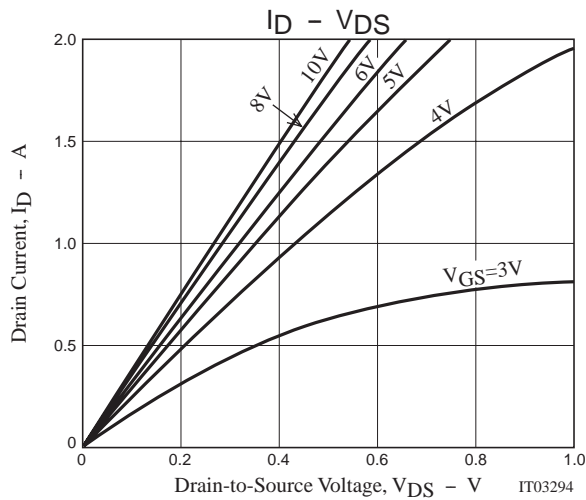
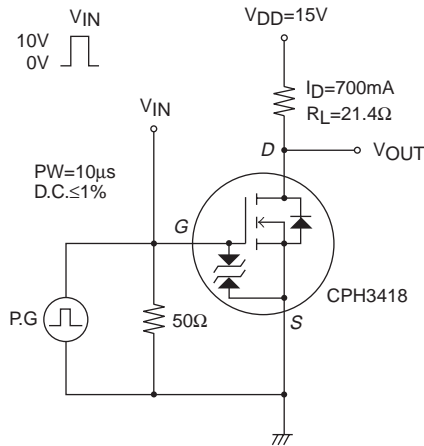


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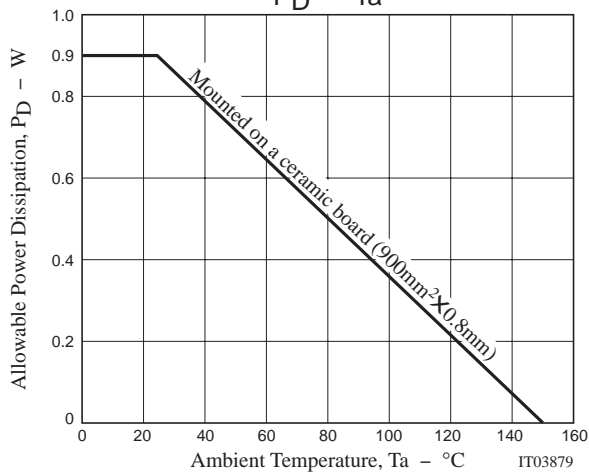
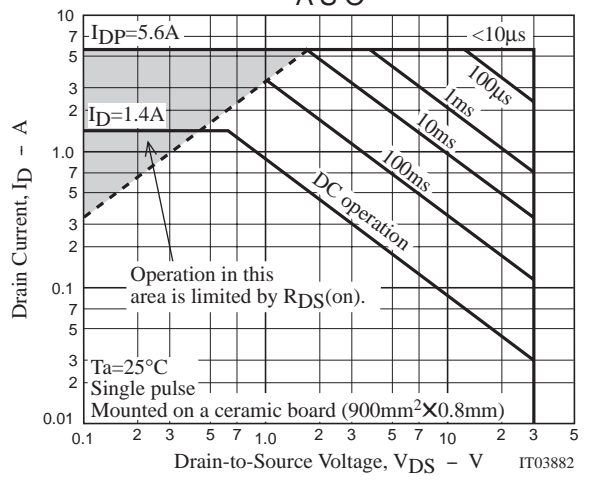
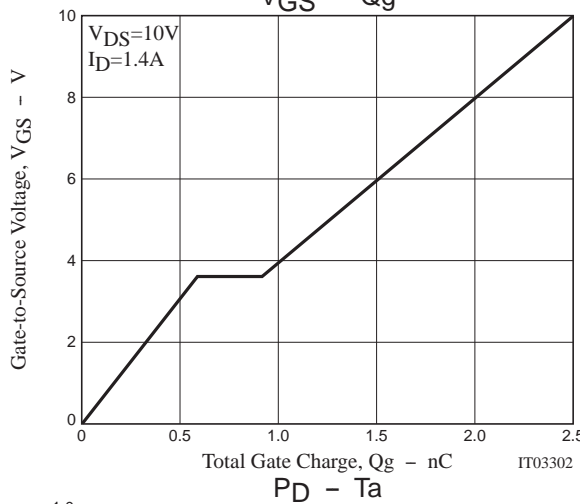
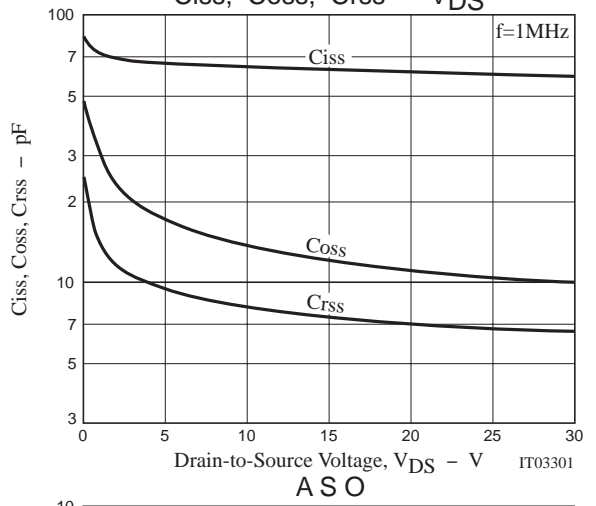
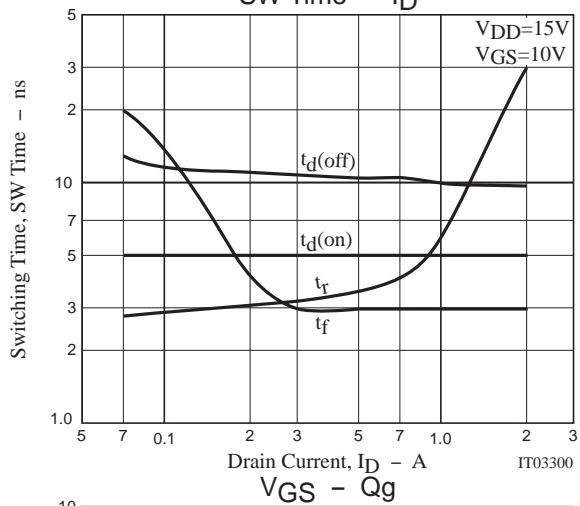
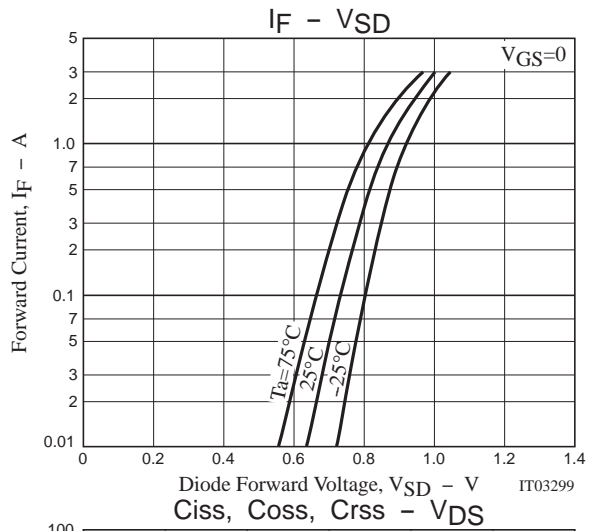
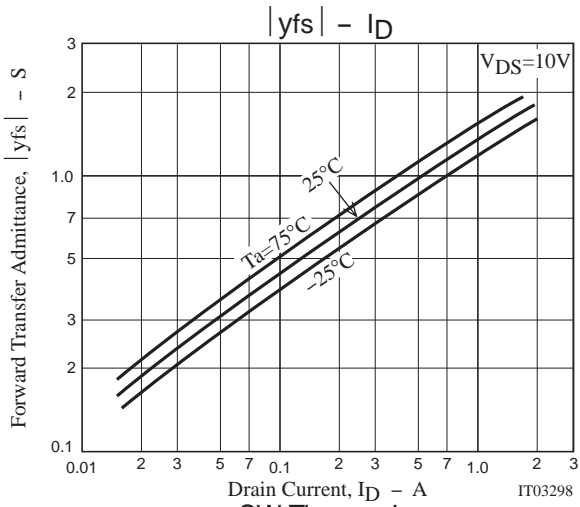
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V <sub>DS</sub> =10V, f=1MHz		65		pF
Output Capacitance	Coss	V <sub>DS</sub> =10V, f=1MHz		14		pF
Reverse Transfer Capacitance	Crss	V <sub>DS</sub> =10V, f=1MHz		8		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See specified Test Circuit.		5		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.		11		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit.		3		ns
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =10V, V <sub>GS</sub> =10V, I <sub>D</sub> =1.4A		2.5		nC
Gate-to-Source Charge	Q <sub>gs</sub>	V <sub>DS</sub> =10V, V <sub>GS</sub> =10V, I <sub>D</sub> =1.4A		0.6		nC
Gate-to-Drain "Miller" Charge	Q <sub>gd</sub>	V <sub>DS</sub> =10V, V <sub>GS</sub> =10V, I <sub>D</sub> =1.4A		0.3		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =1.4A, V <sub>GS</sub> =0	0.87		1.2	V

## Switching Time Test Circuit



# CPH3418



## CPH3418

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Note on usage : Since the CPH3418 is designed for high-speed switching applications, please avoid using this device in the vicinity of highly charged objects.

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