



ON Semiconductor®

ON Semiconductor
DATA SHEET**CPH6414** — N-Channel Silicon MOSFET
General-Purpose Switching Device
Applications**Features**

- Low ON-resistance.
- 4V drive.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		30	V
Gate-to-Source Voltage	V _{GSS}		±20	V
Drain Current (DC)	I _D		5	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycles≤1%	20	A
Allowable Power Dissipation	P _D	Mounted on a ceramic board (1200mm ² ×0.8mm)	1.6	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} =0V	30			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V			1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} = ±16V, V _{DS} =0V			±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 =3A	3.1	4.5		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =3A, V _{GS} =10V		37	48	mΩ
	R _{DS(on)2}	I _D =1.5A, V _{GS} =4V		63	88	mΩ
Input Capacitance	C _{iss}	V _{DS} =10V, f=1MHz		460		pF
Output Capacitance	C _{oss}	V _{DS} =10V, f=1MHz		95		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} =10V, f=1MHz		75		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit.		11		ns
Rise Time	t _r	See specified Test Circuit.		12		ns
Turn-OFF Delay Time	t _{d(off)}	See specified Test Circuit.		31		ns
Fall Time	t _f	See specified Test Circuit.		18		ns

Marking : KQ

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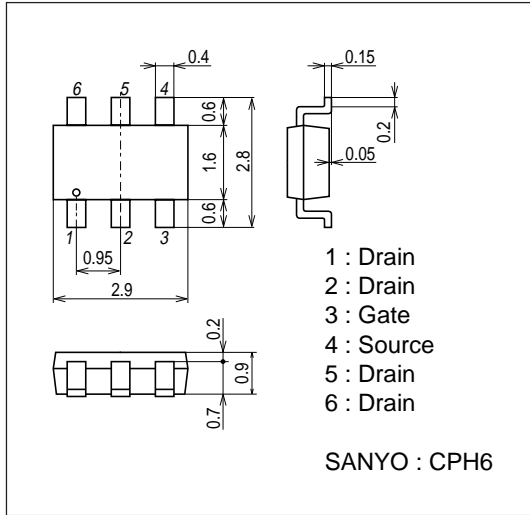
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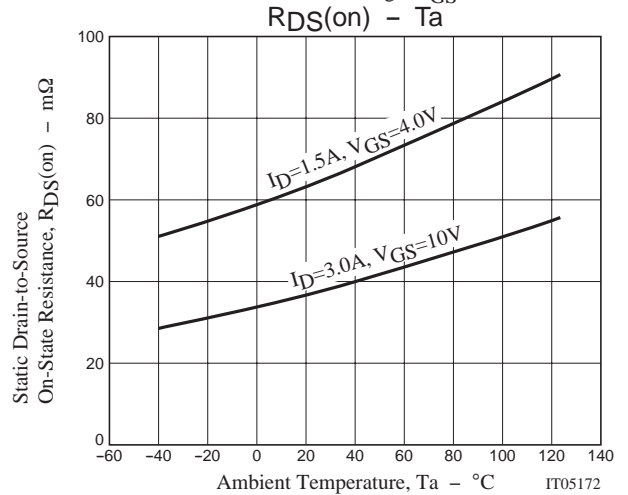
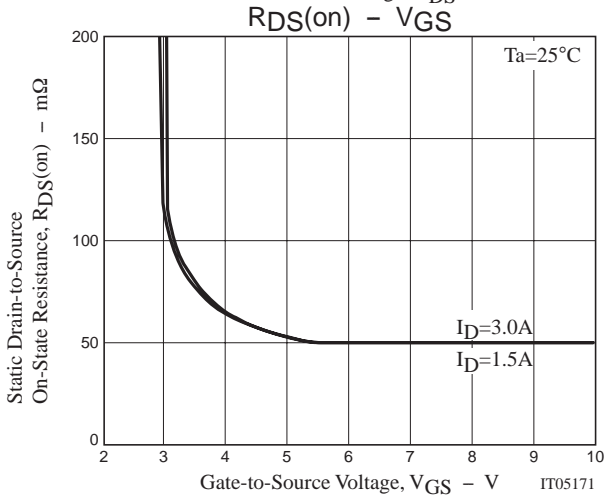
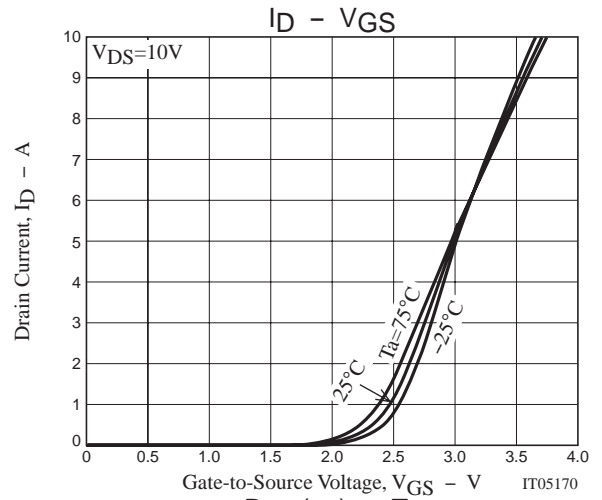
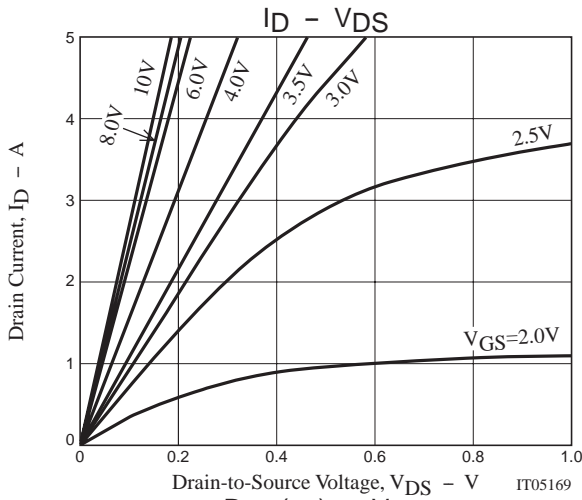
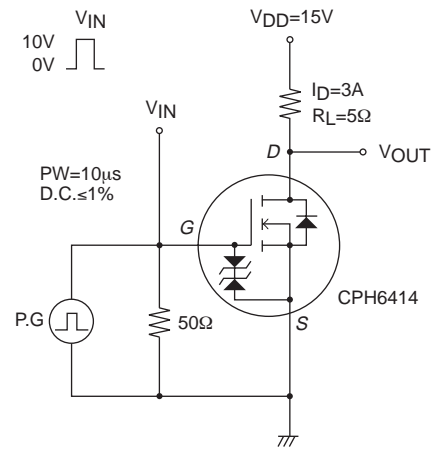
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Qg	V _{DS} =10V, V _{GS} =10V, I _D =5A		8.5		nC
Gate-to-Source Charge	Qgs	V _{DS} =10V, V _{GS} =10V, I _D =5A		1.8		nC
Gate-to-Drain "Miller" Charge	Qgd	V _{DS} =10V, V _{GS} =10V, I _D =5A		1.3		nC
Diode Forward Voltage	V _{SD}	I _S =5A, V _{GS} =0V		0.86	1.2	V

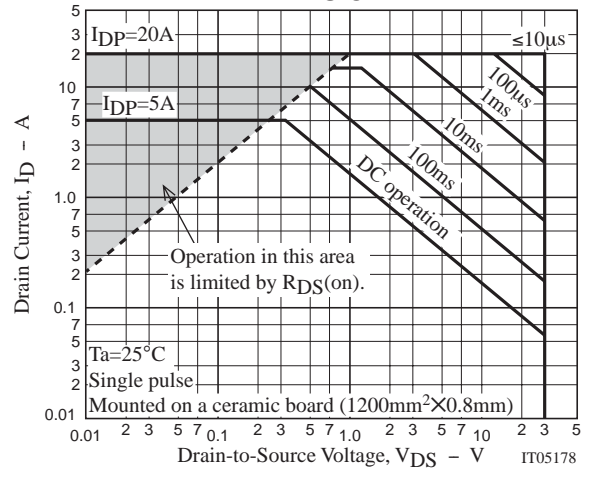
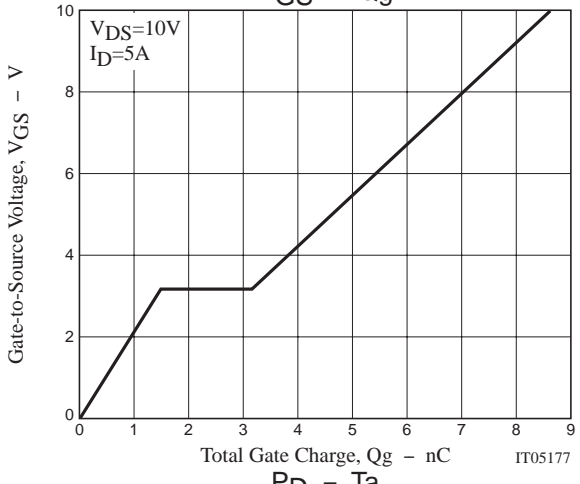
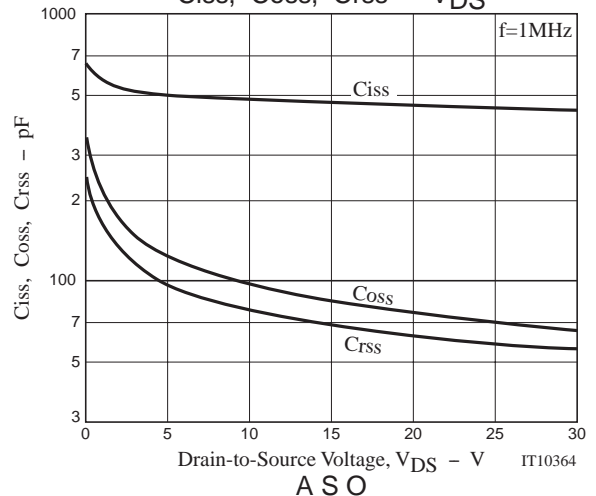
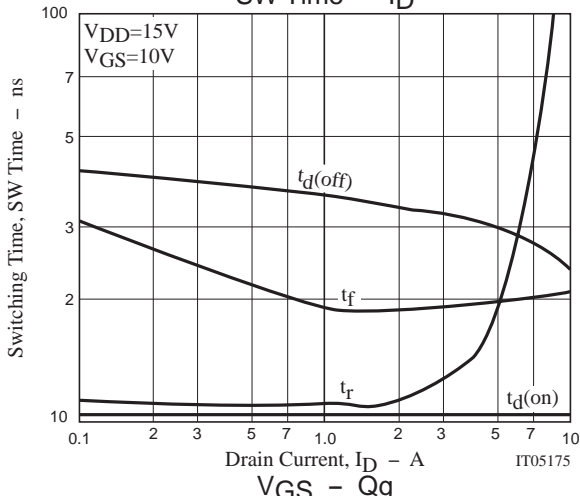
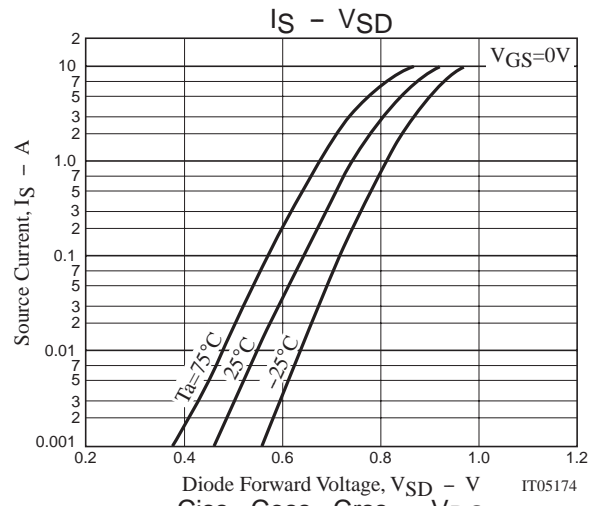
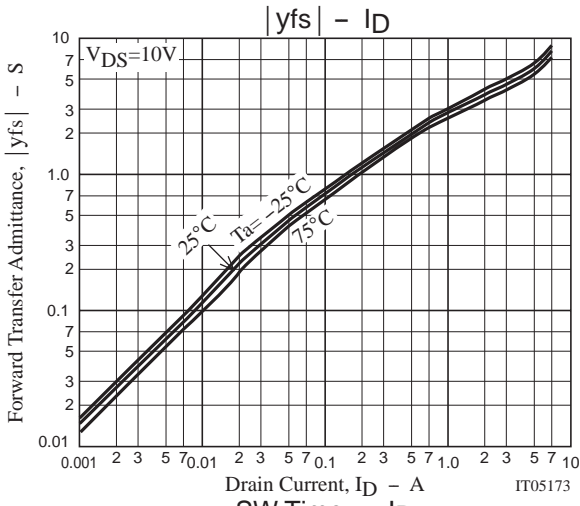
Package Dimensions

unit : mm
7018-003



Switching Time Test Circuit





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