



CPH6414

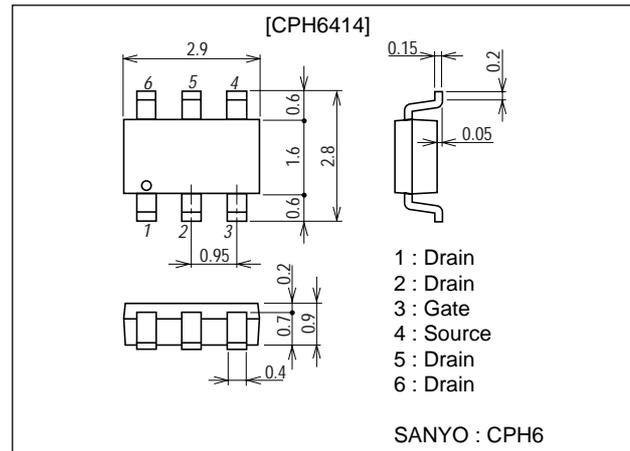
Ultrahigh-Speed Switching Applications

Features

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

Package Dimensions

unit : mm
2151A



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}	$PW \leq 10 \mu s$, duty cycle $\leq 1\%$	20	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board(1200mm ² X0.8mm)	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	$V_{(BR)DSS}$	$I_D=1mA$, $V_{GS}=0$	30			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30V$, $V_{GS}=0$			1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 16V$, $V_{DS}=0$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V$, $I_D=1mA$	1.2		2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V$, $I_D=3A$	3.1	4.5		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=3A$, $V_{GS}=10V$		37	48	$m\Omega$
	$R_{DS(on)2}$	$I_D=1.5A$, $V_{GS}=4V$		63	88	$m\Omega$

Marking : KQ

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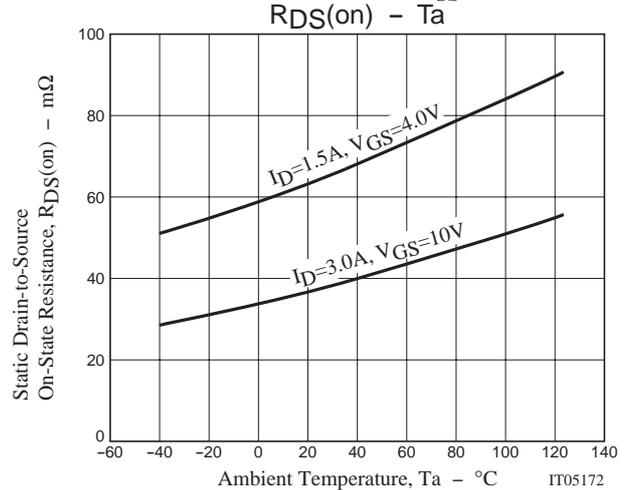
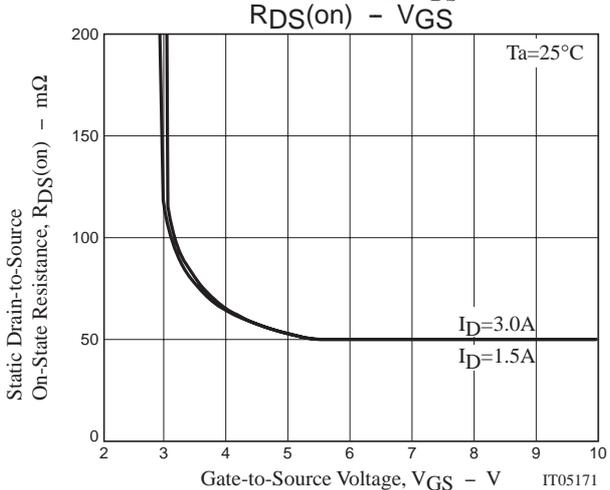
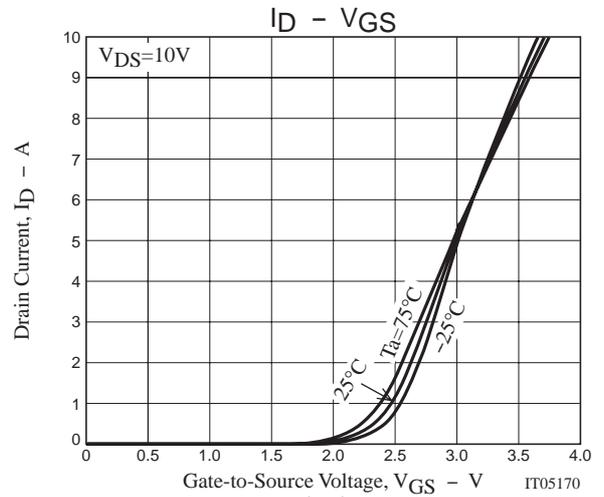
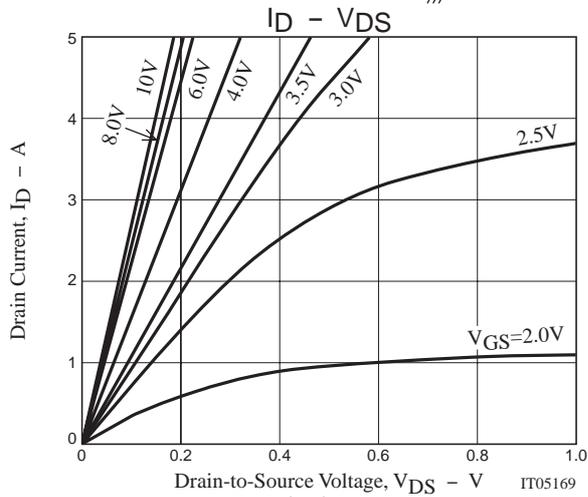
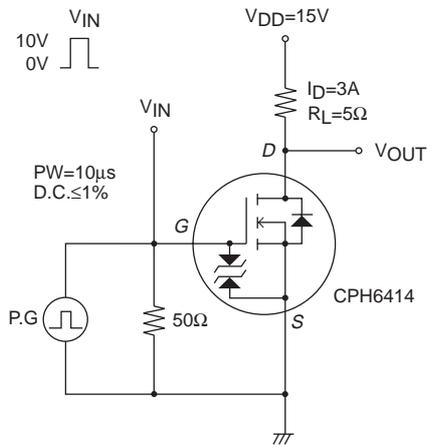
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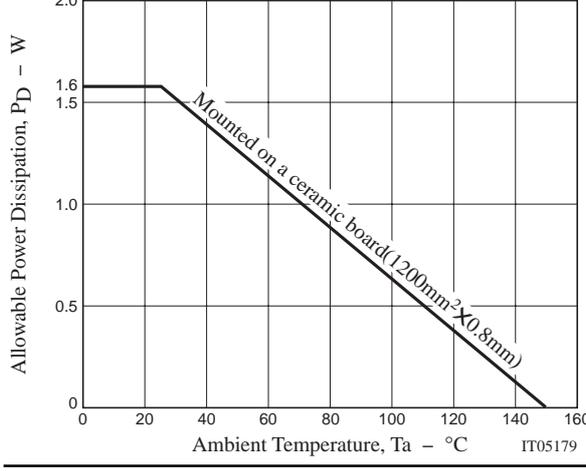
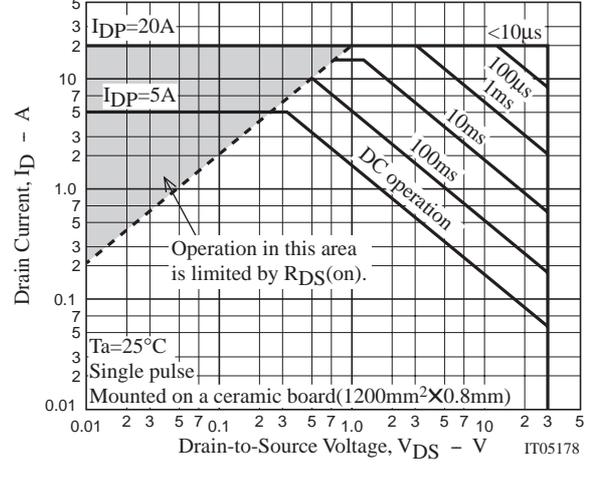
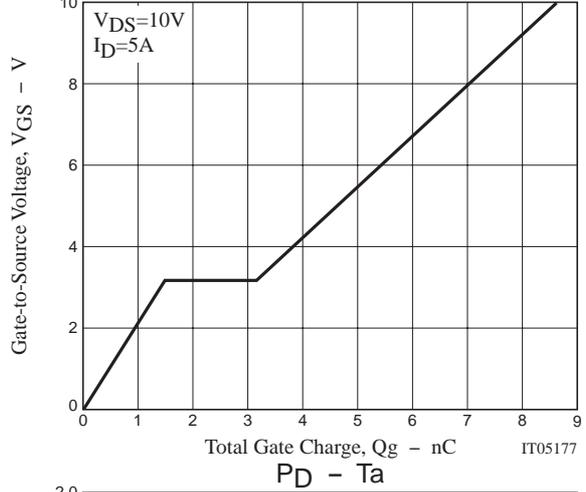
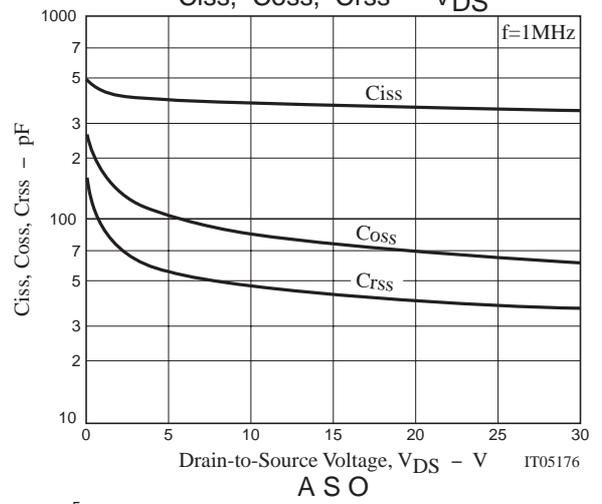
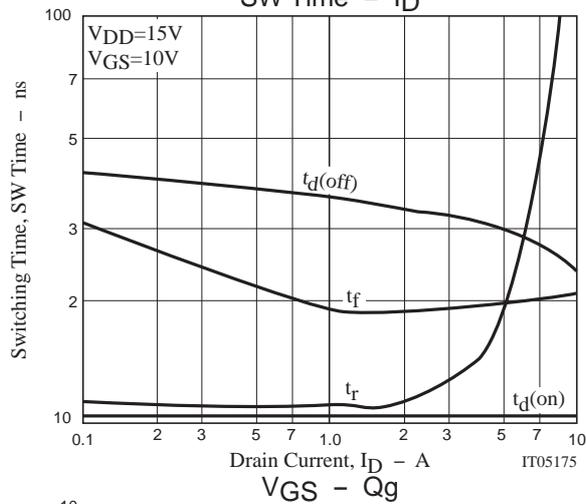
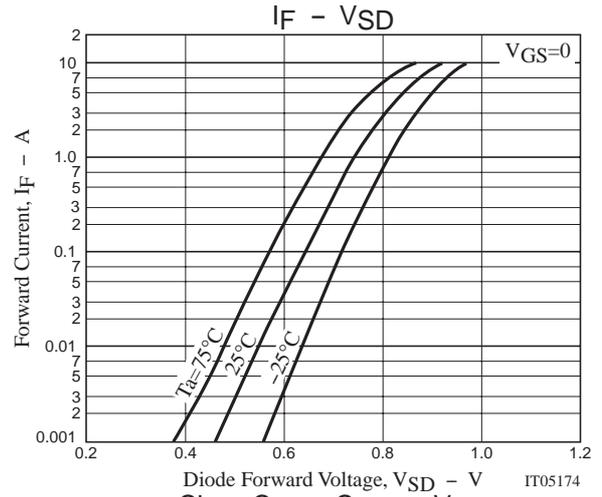
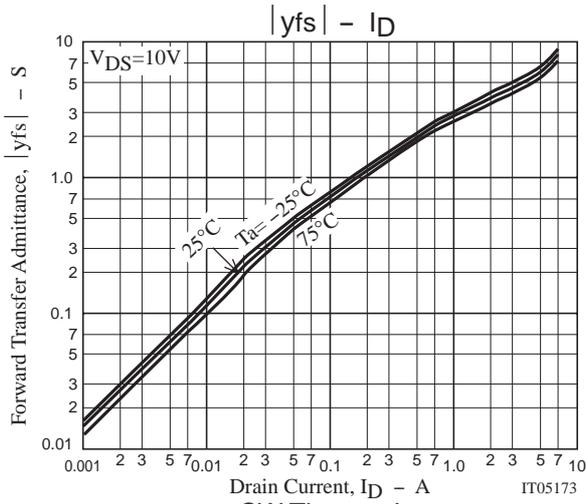
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V _{DS} =10V, f=1MHz		370		pF
Output Capacitance	Coss	V _{DS} =10V, f=1MHz		85		pF
Reverse Transfer Capacitance	Crss	V _{DS} =10V, f=1MHz		47		pF
Turn-ON Delay Time	t _{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
Total Gate Charge	Q _g	V _{DS} =10V, V _{GS} =10V, I _D =5A		8.5		nC
Gate-to-Source Charge	Q _{gs}	V _{DS} =10V, V _{GS} =10V, I _D =5A		1.8		nC
Gate-to-Drain "Miller" Charge	Q _{gd}	V _{DS} =10V, V _{GS} =10V, I _D =5A		1.3		nC
Diode Forward Voltage	V _{SD}	I _S =5A, V _{GS} =0	0.86		1.2	V

Switching Time Test Circuit



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