



CPH6404

Ultrahigh-Speed Switching Applications

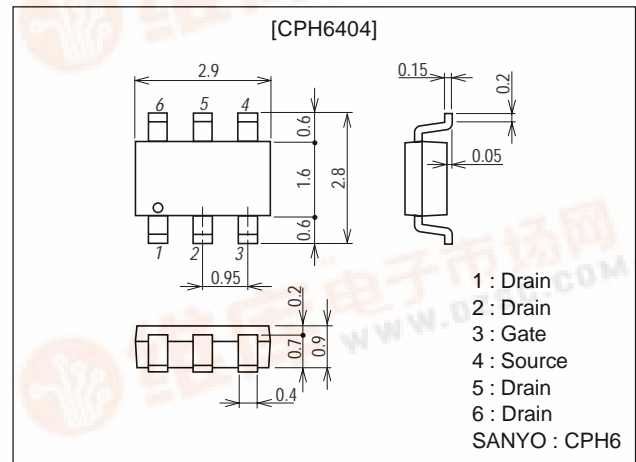
Features

- 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		6	A
Drain Current (pulse)	I_{DP}	$PW \leq 10\mu s$, duty cycle $\leq 1\%$	24	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (900mm ² ×0.8mm)	1.6	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-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	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	1.0		2.4	V
Forward Transfer Admittance	yfs	$V_{DS}=10V, I_D=3A$	4.2	6		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=3A, V_{GS}=10V$		33	43	mΩ
	$R_{DS(on)2}$	$I_D=1A, V_{GS}=4V$		48	68	mΩ
Input Capacitance	Ciss	$V_{DS}=10V, f=1MHz$		550		pF
Output Capacitance	Coss	$V_{DS}=10V, f=1MHz$		130		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=10V, f=1MHz$		80		pF

Marking : KD

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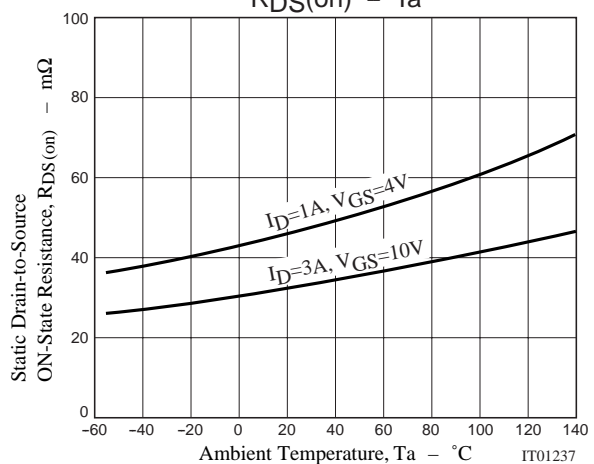
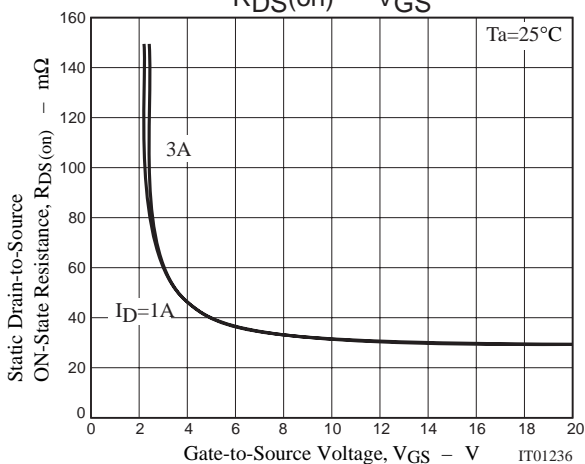
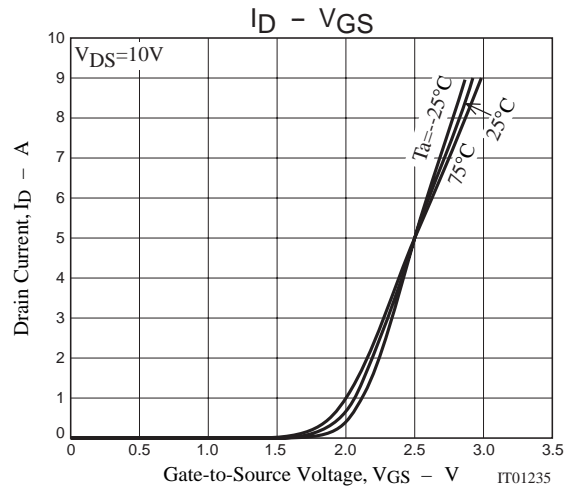
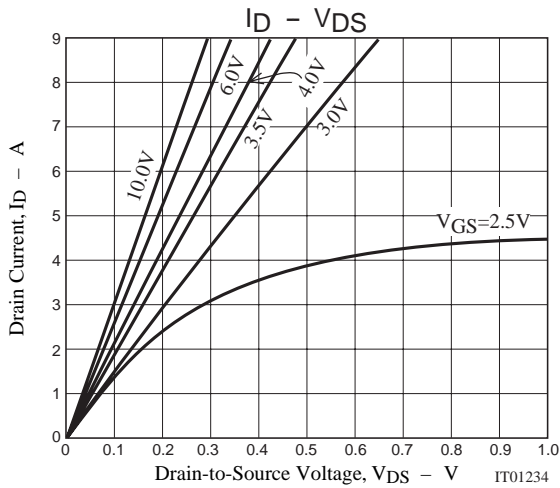
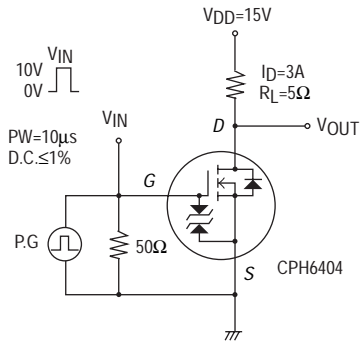


CPH6404

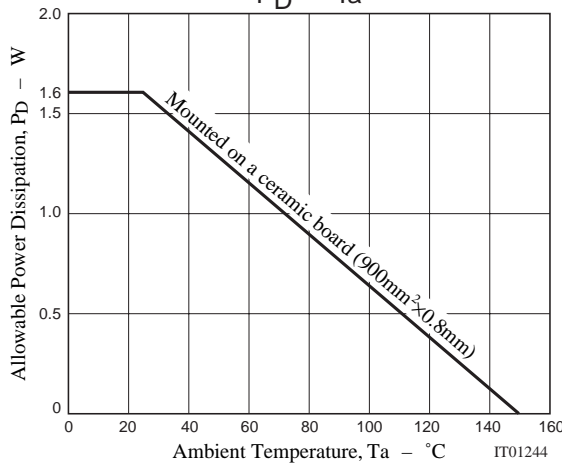
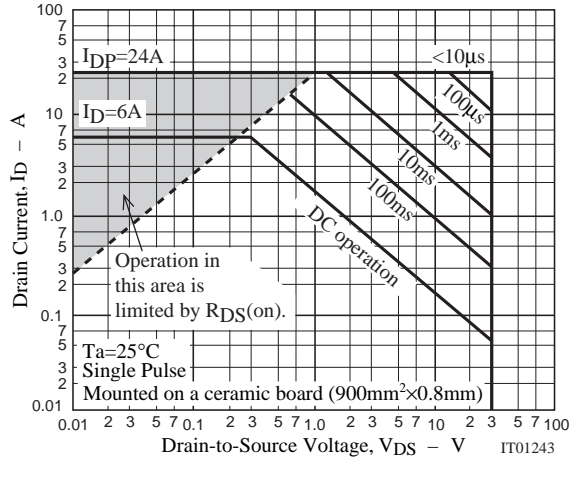
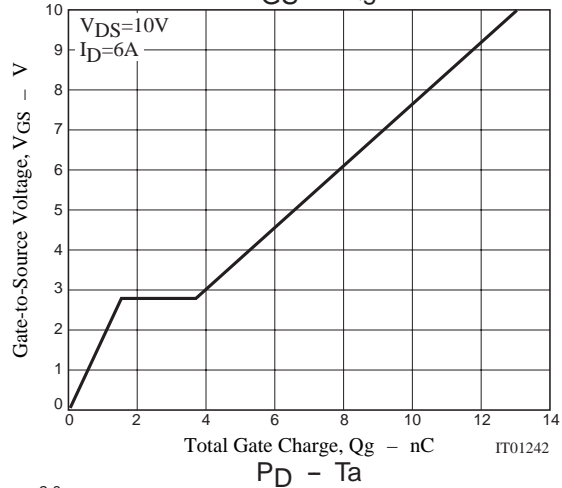
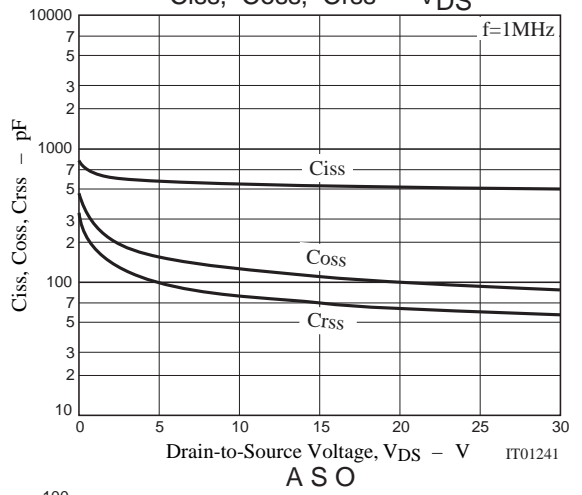
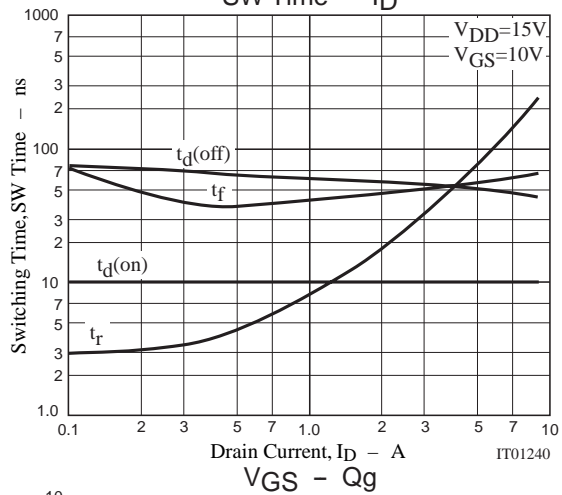
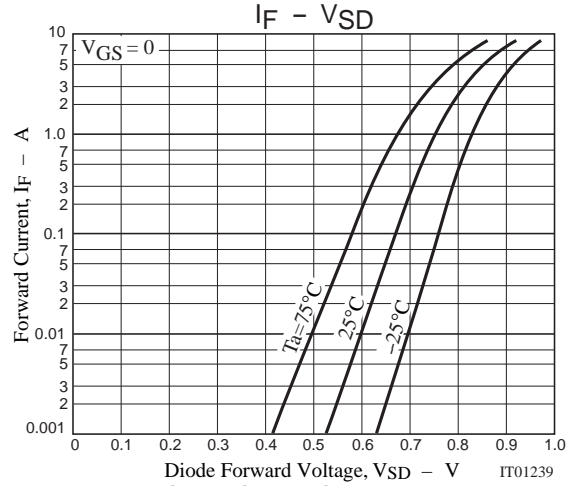
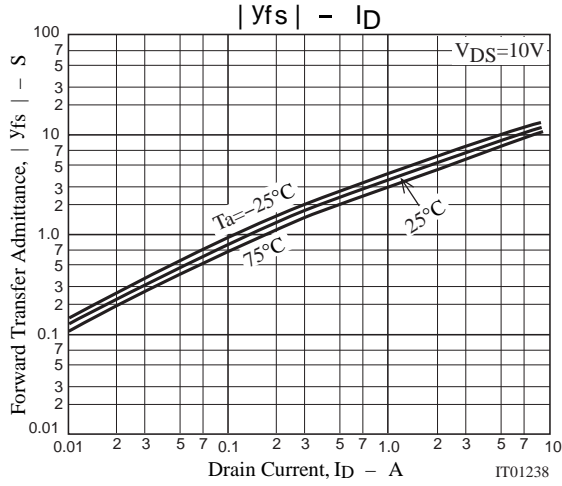
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		10		ns
Rise Time	t_r	See specified Test Circuit		30		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		55		ns
Fall Time	t_f	See specified Test Circuit		50		ns
Total Gate Charge	Qg	$V_{DS}=10V, V_{GS}=10V, I_D=6A$		13		nC
Gate-to-Source Charge	Qgs	$V_{DS}=10V, V_{GS}=10V, I_D=6A$		1.5		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=10V, V_{GS}=10V, I_D=6A$		2.2		nC
Diode Forward Voltage	V_{SD}	$I_S=6A, V_{GS}=0$	0.86	1.2		V

Switching Time Test Circuit



CPH6404



CPH6404

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