



Ultrahigh-Speed Switching Applications

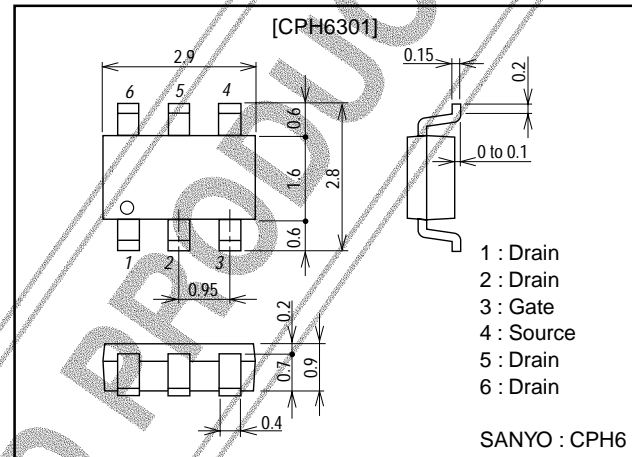
Features

- Low ON resistance.
- Ultrahigh-speed switching.
- 2.5V drive.

Package Dimensions

unit:mm

2151



Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		-20	V
Gate-to-Source Voltage	V_{GSS}		±10	V
Drain Current (DC)	I_D		-3	A
Drain Current (pulse)	I_{DP}	$PW \leq 10\mu s$, duty cycle $\leq 1\%$	-12	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (900mm \times 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	$V_{(BR)DSS}$	$I_D = -1mA$, $V_{GS} = 0$	-20			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -20V$, $V_{GS} = 0$			-10	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 8V$, $V_{DS} = 0$			±10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -10V$, $I_D = -1mA$	-0.4		-1.4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -10V$, $I_D = -1.5A$	3.3	4.8		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = -1.5A$, $V_{GS} = -4V$		110	145	m Ω
	$R_{DS(on)2}$	$I_D = -0.5A$, $V_{GS} = -2.5V$		160	220	m Ω
Input Capacitance	C_{iss}	$V_{DS} = -10V$, $f = 1MHz$		360		pF
Output Capacitance	C_{oss}	$V_{DS} = -10V$, $f = 1MHz$		180		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS} = -10V$, $f = 1MHz$		90		pF

Marking: JA

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SANYO Electric Co., Ltd. Semiconductor Company

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

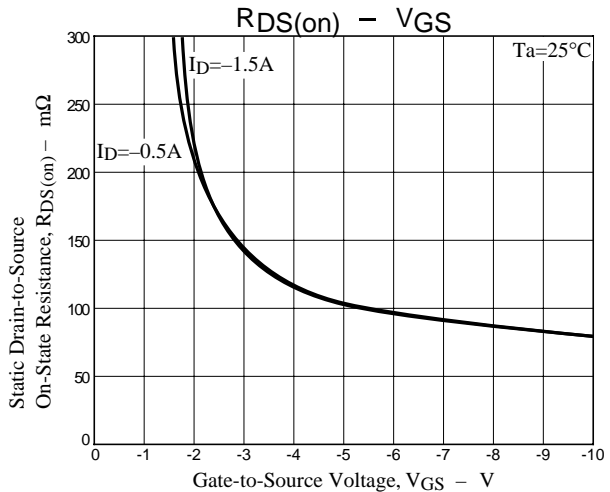
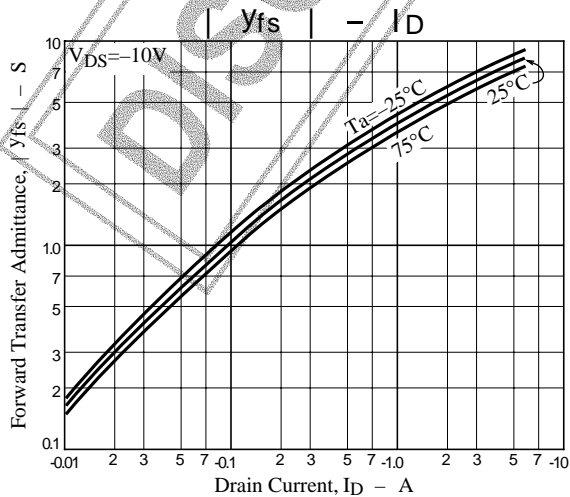
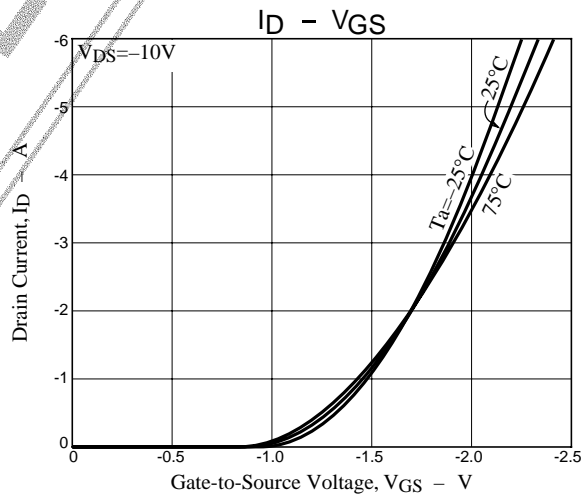
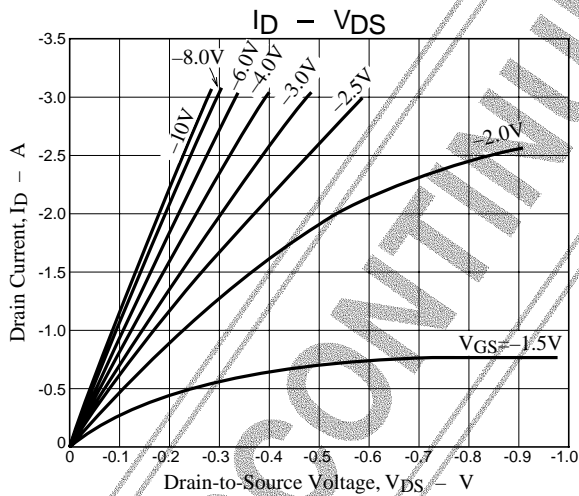
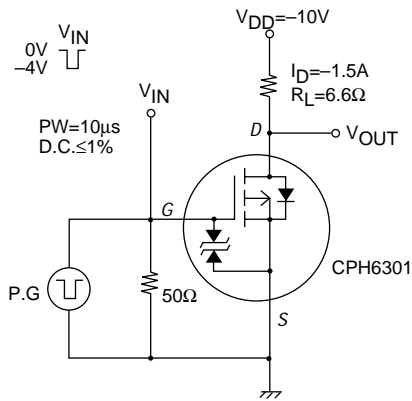
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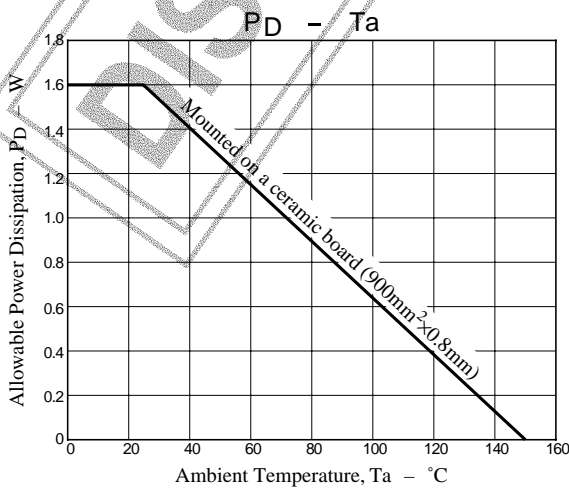
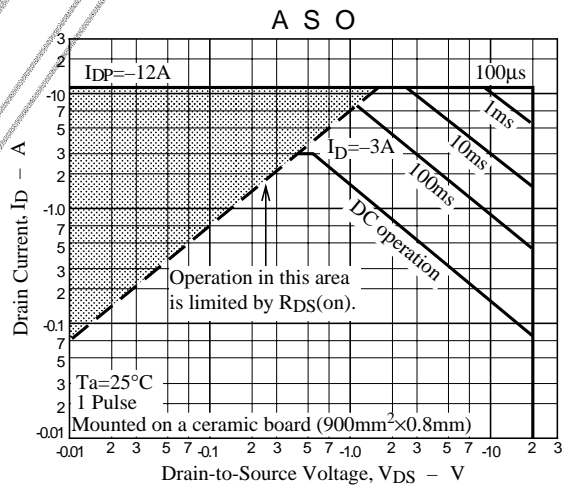
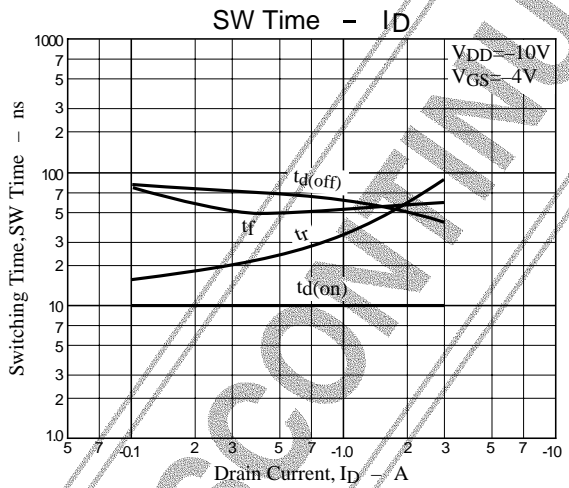
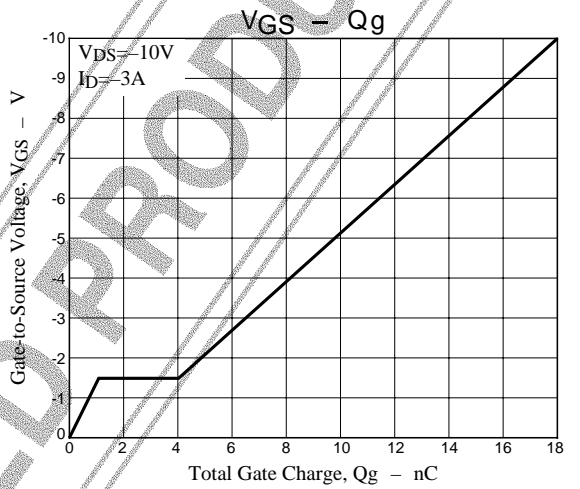
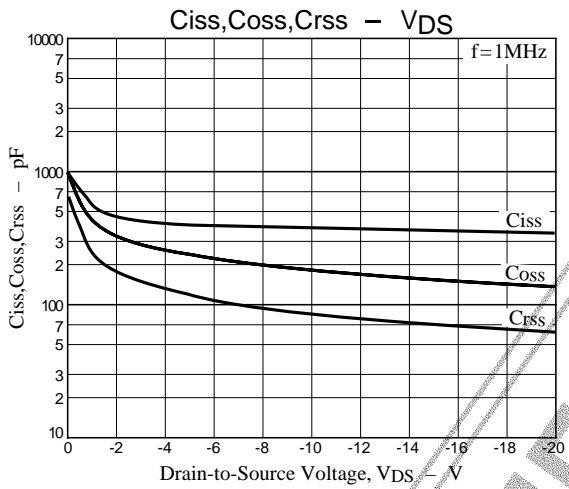
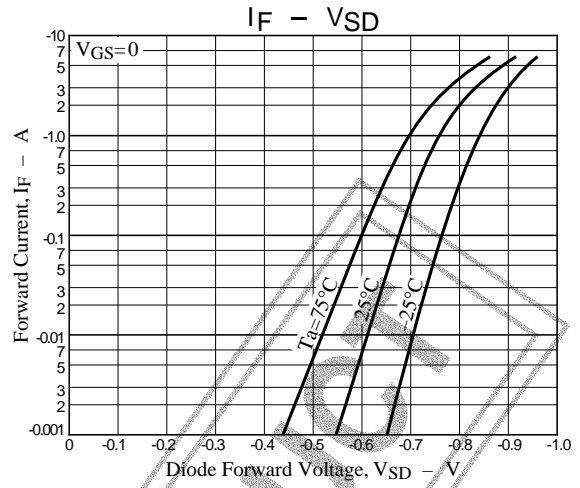
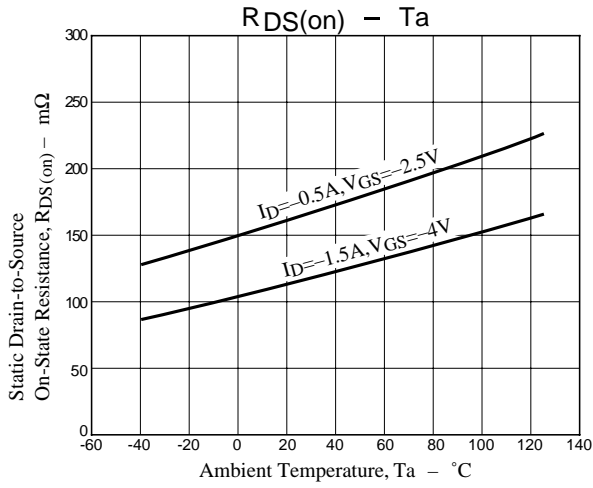
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		10		ns
Rise Time	t_r	See specified Test Circuit		42		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		56		ns
Fall Time	t_f	See specified Test Circuit		56		ns
Total Gate Charge	Qg	$V_{DS}=-10V, V_{GS}=-10V, I_D=-3A$		18		nC
Gate-to-Source Charge	Qgs	$V_{DS}=-10V, V_{GS}=-10V, I_D=-3A$		1		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=-10V, V_{GS}=-10V, I_D=-3A$		3		nC
Diode Forward Voltage	V_{SD}	$I_S=-3A, V_{GS}=0$		-0.85	-1.5	V

Switching Time Test Circuit



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