

**CPH6311**

Ultrahigh-Speed Switching Applications

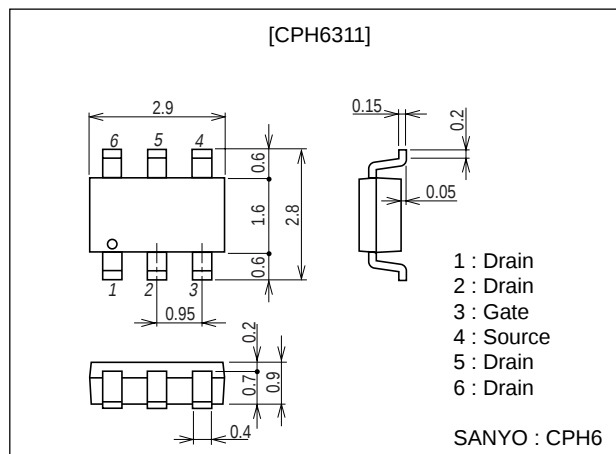
Features

- Low ON-state resistance.
- Ultrahigh-speed switching.
- 2.5V 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}		-20	V
Gate-to-Source Voltage	V _{GSS}		±10	V
Drain Current (DC)	I _D		-5	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	-20	A
Allowable Power Dissipation	P _D	Mounted on a ceramic board (900mm²×0.8mm)	1.6	W
		Mounted on a FR4 board PW≤5S	2.0	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 _D =-20V, V _{GS} =0			-1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±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 =-3A	5.8	8.5		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =-3A, V _{GS} =-4.5V		32	42	mΩ
	R _{DS(on)2}	I _D =-1A, V _{GS} =-2.5V		46	60	mΩ

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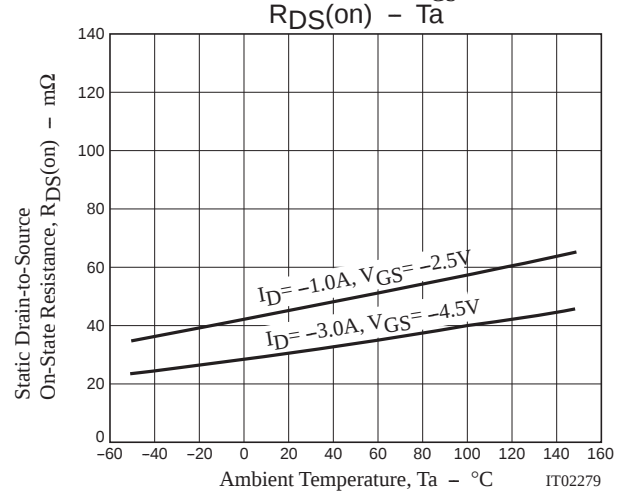
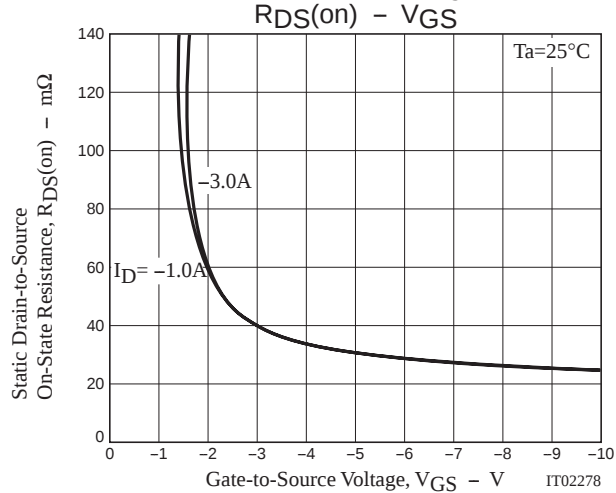
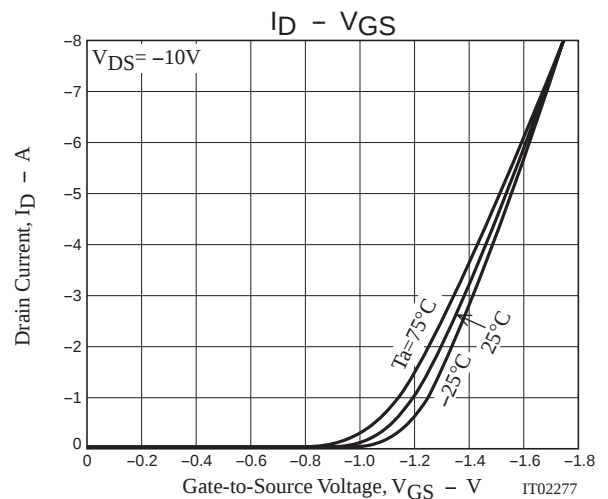
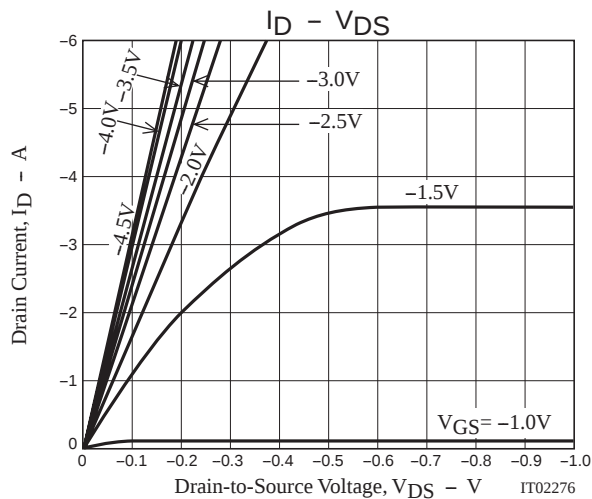
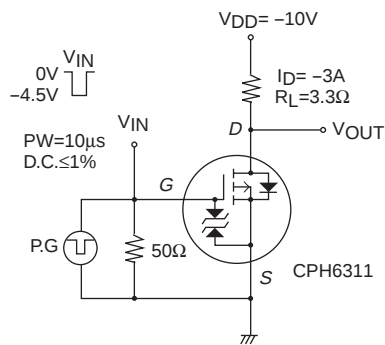
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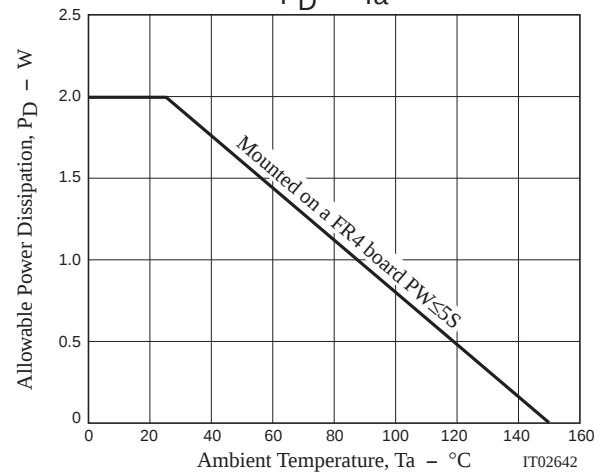
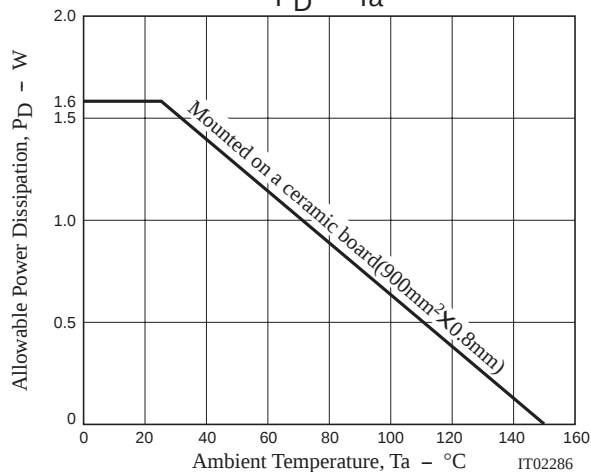
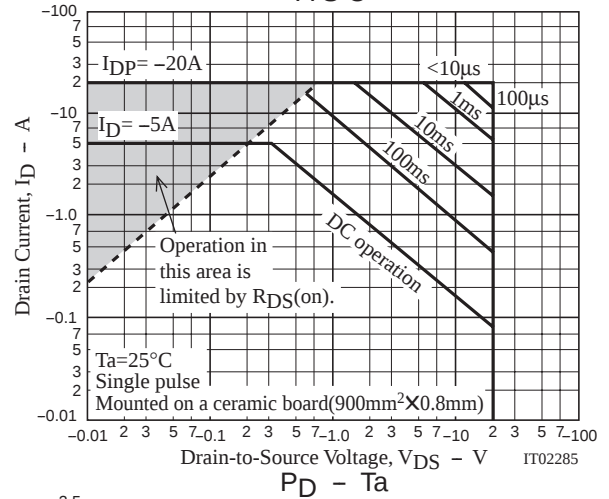
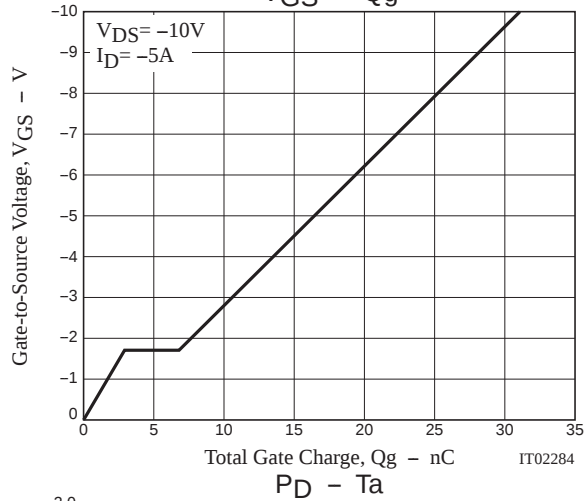
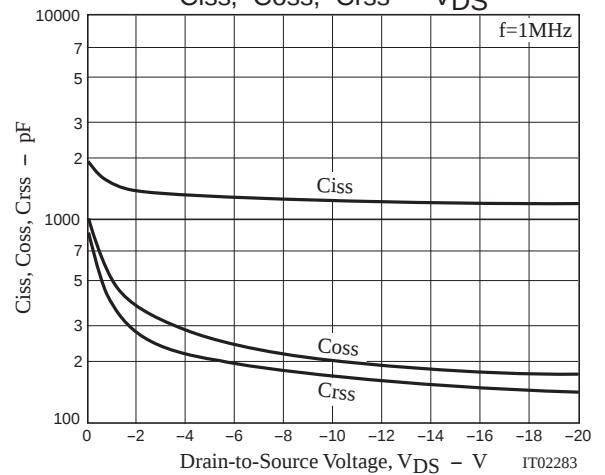
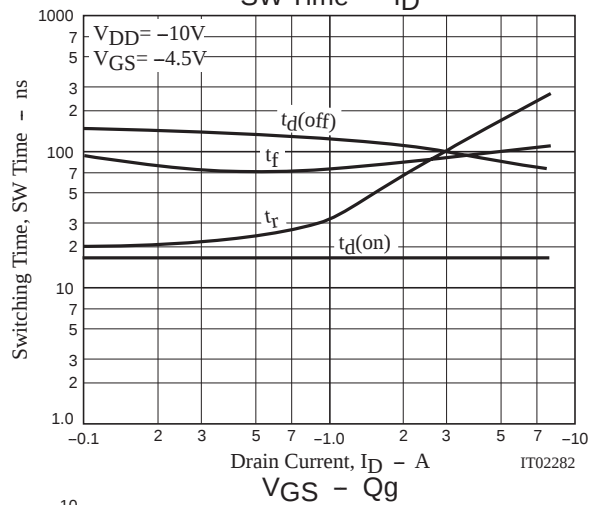
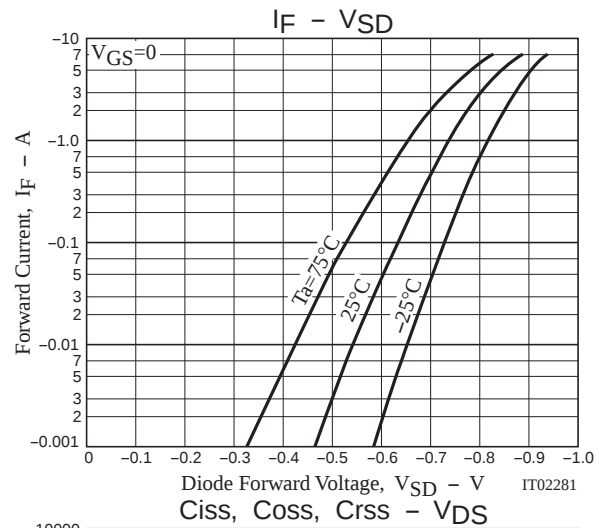
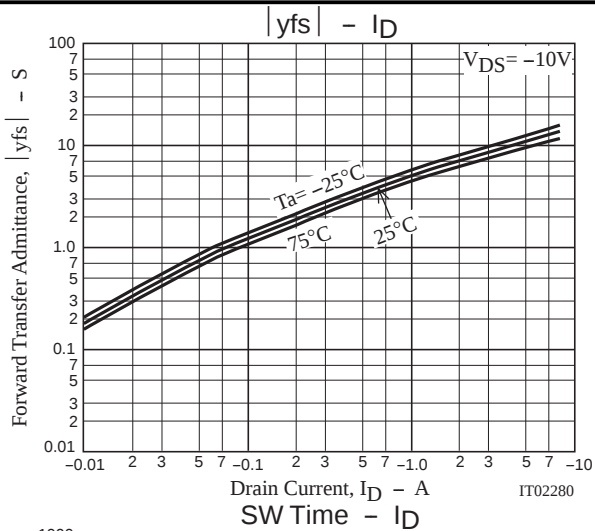
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	C_{iss}	$V_{DS} = -10V, f = 1MHz$		1230		pF
Output Capacitance	C_{oss}	$V_{DS} = -10V, f = 1MHz$		200		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS} = -10V, f = 1MHz$		170		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit		17		ns
Rise Time	t_r	See specified Test Circuit		100		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit		100		ns
Fall Time	t_f	See specified Test Circuit		95		ns
Total Gate Charge	Q_g	$V_{DS} = -10V, V_{GS} = -10V, I_D = -5A$		31		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS} = -10V, V_{GS} = -10V, I_D = -5A$		2.8		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS} = -10V, V_{GS} = -10V, I_D = -5A$		4.2		nC
Diode Forward Voltage	V_{SD}	$I_S = -5A, V_{GS} = 0$		-0.83	-1.5	V

Marking : JM

Switching Time Test Circuit



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