



CPH3431 — N-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

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

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		200	V
Gate-to-Source Voltage	V _{GSS}		±20	V
Drain Current (DC)	I _D		0.6	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	2.4	A
Allowable Power Dissipation	P _D	Mounted on a ceramic board (900mm ² X0.8mm)	1.0	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} =0V	200			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =200V, V _{GS} =0V			10	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 =300mA	0.6	1		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =300mA, V _{GS} =10V		1.8	2.4	Ω
	R _{DS(on)2}	I _D =300mA, V _{GS} =4V		2.0	2.8	Ω
Input Capacitance	C _{iss}	V _{DS} =20V, f=1MHz		340		pF
Output Capacitance	C _{oss}	V _{DS} =20V, f=1MHz		16		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} =20V, f=1MHz		10		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit.		10		ns
Rise Time	t _r	See specified Test Circuit.		4		ns
Turn-OFF Delay Time	t _{d(off)}	See specified Test Circuit.		35		ns
Fall Time	t _f	See specified Test Circuit.		27		ns

Marking : ZG

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CPH3431

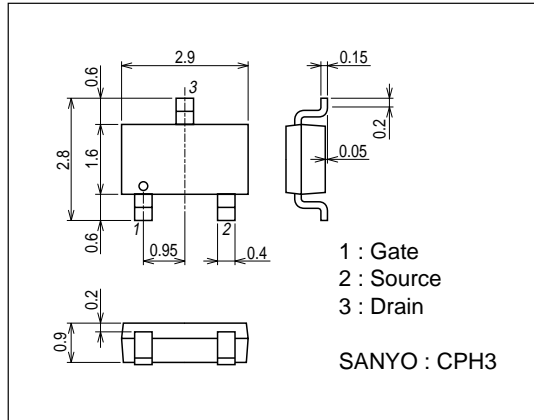
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Qg	$V_{DS}=100V, V_{GS}=10V, I_D=600mA$		7		nC
Gate-to-Source Charge	Qgs	$V_{DS}=100V, V_{GS}=10V, I_D=600mA$		1		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=100V, V_{GS}=10V, I_D=600mA$		0.8		nC
Diode Forward Voltage	VSD	$I_S=600mA, V_{GS}=0V$		0.79	1.2	V

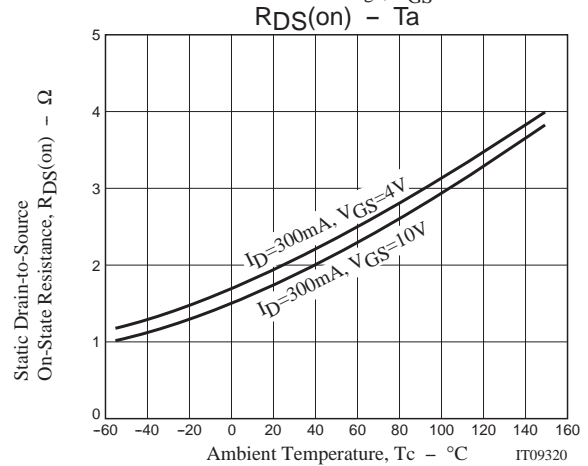
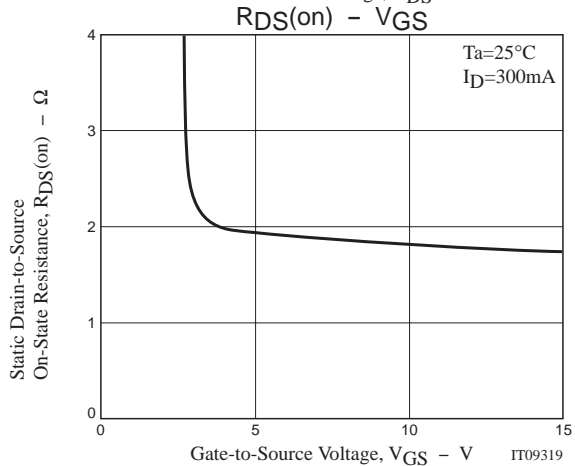
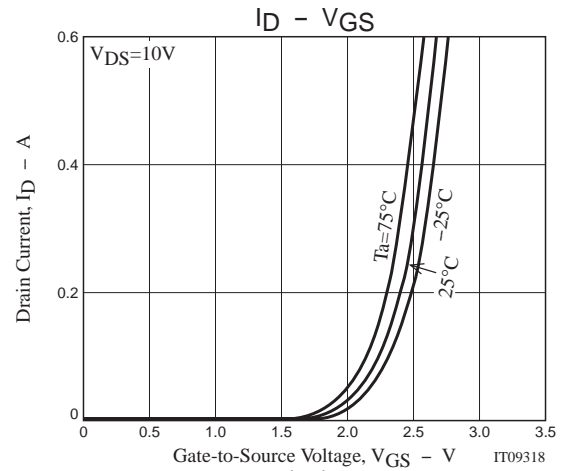
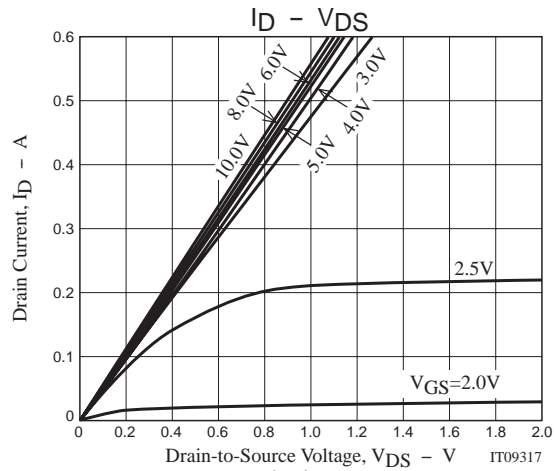
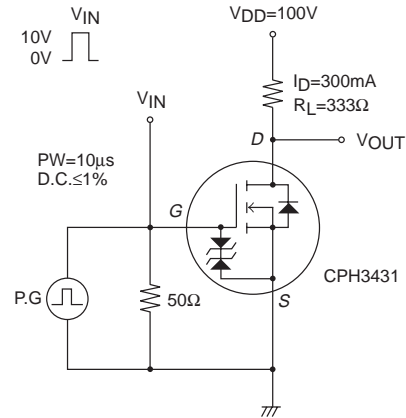
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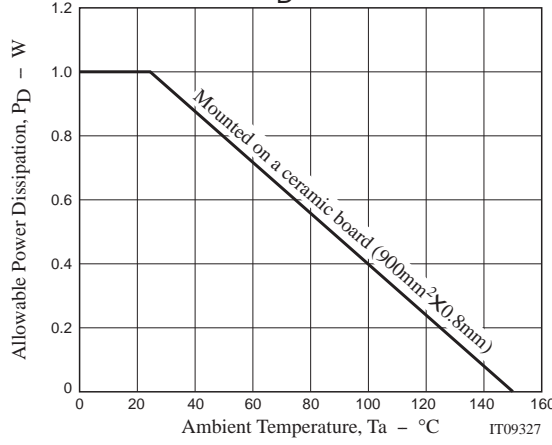
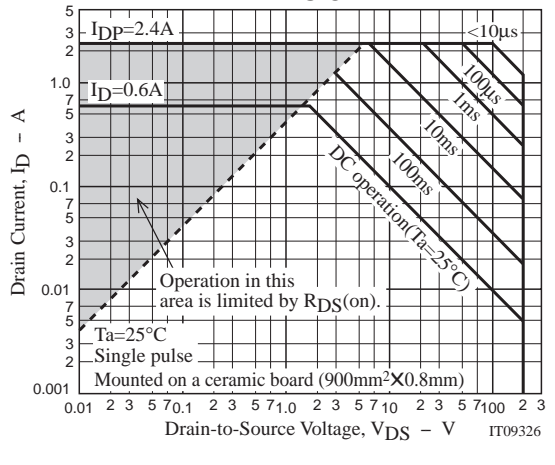
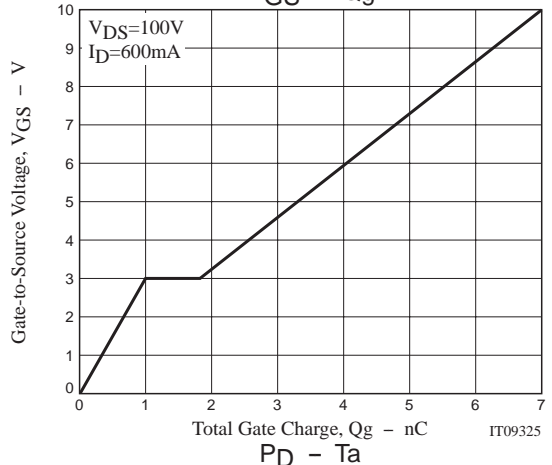
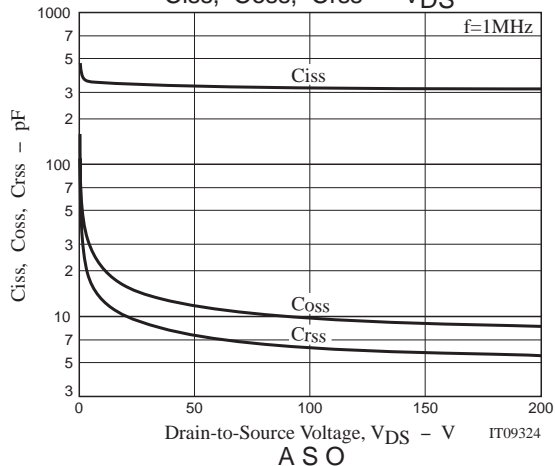
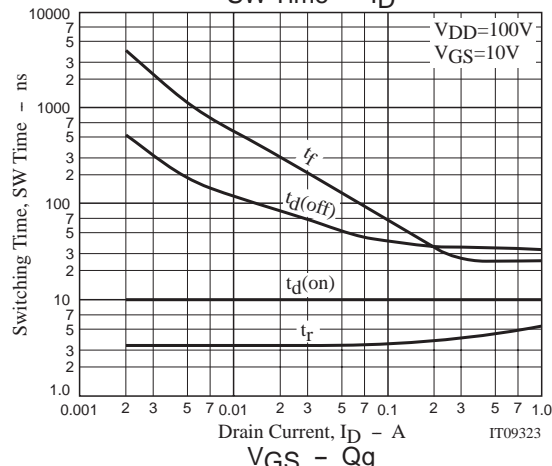
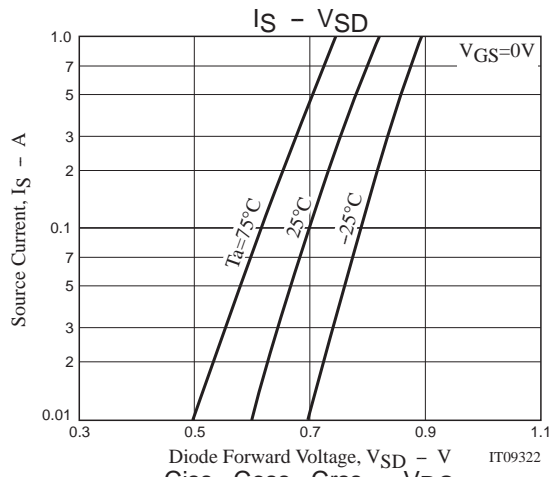
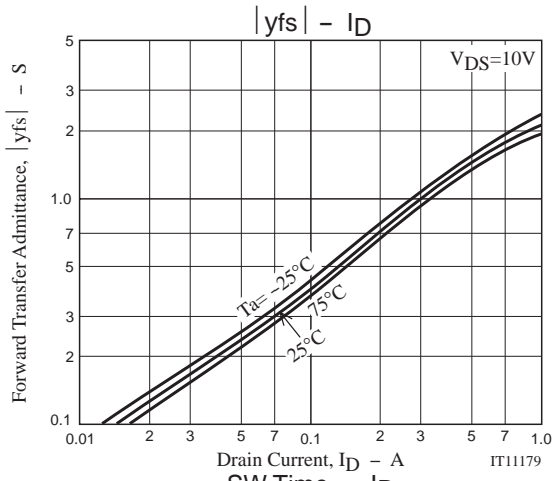
unit : mm

7015A-004



Switching Time Test Circuit





Note on usage : Since the CPH3431 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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