



# 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 <sub>DSS</sub>		200	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±20	V
Drain Current (DC)	I <sub>D</sub>		0.6	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	2.4	A
Allowable Power Dissipation	P <sub>D</sub>	Mounted on a ceramic board (900mm <sup>2</sup> X0.8mm)	1.0	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-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 <sub>D</sub> =1mA, V <sub>GS</sub> =0V	200			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =200V, V <sub>GS</sub> =0V			10	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±16V, V <sub>DS</sub> =0V			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =1mA	1.2		2.6	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =300mA	0.6	1		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =300mA, V <sub>GS</sub> =10V		1.8	2.4	Ω
	R <sub>DS(on)2</sub>	I <sub>D</sub> =300mA, V <sub>GS</sub> =4V		2.0	2.8	Ω
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =20V, f=1MHz		340		pF
Output Capacitance	C <sub>oss</sub>	V <sub>DS</sub> =20V, f=1MHz		16		pF
Reverse Transfer Capacitance	C <sub>rss</sub>	V <sub>DS</sub> =20V, f=1MHz		10		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See specified Test Circuit.		10		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit.		4		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>	See specified Test Circuit.		35		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit.		27		ns

Marking : ZG

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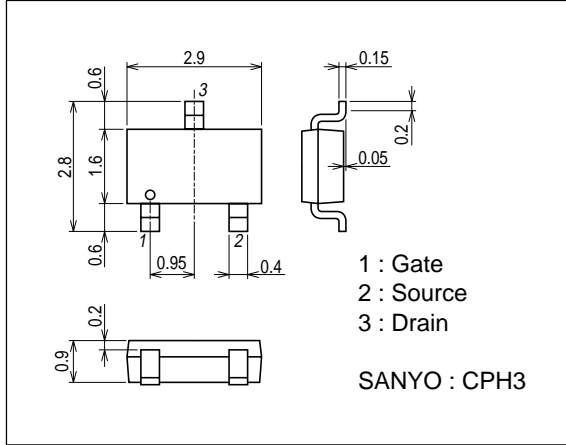
# CPH3431

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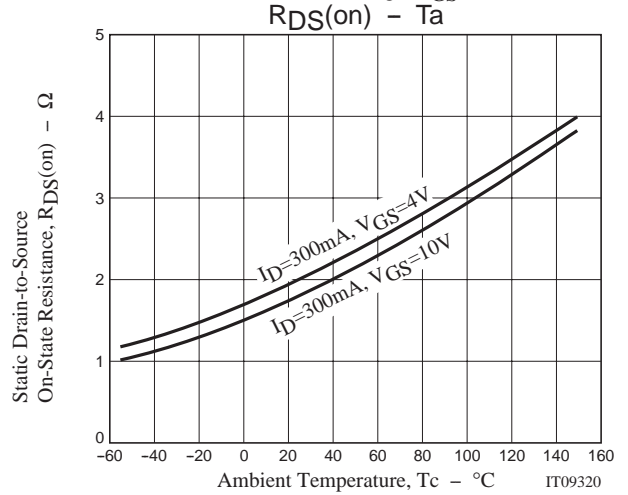
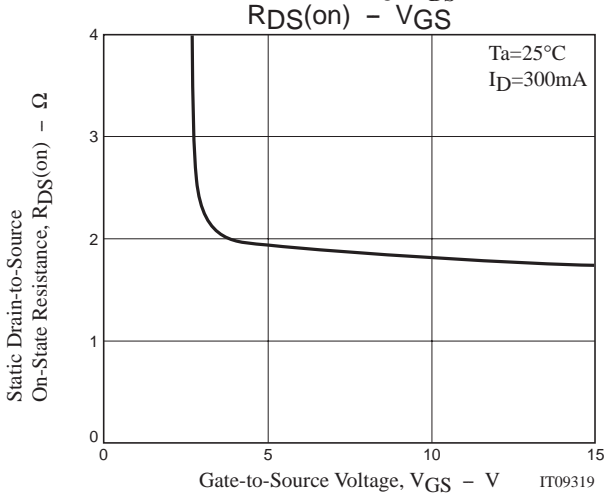
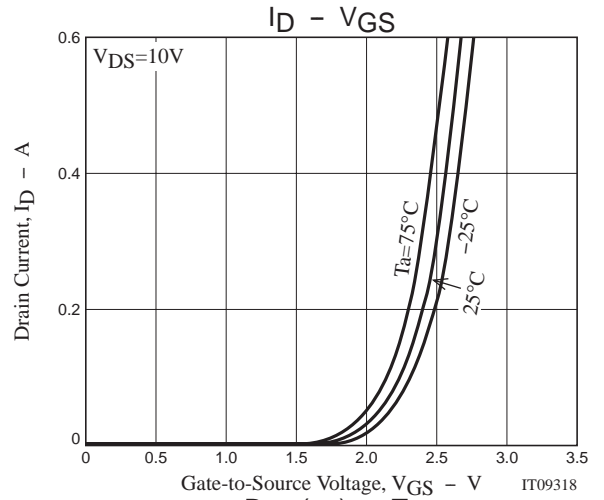
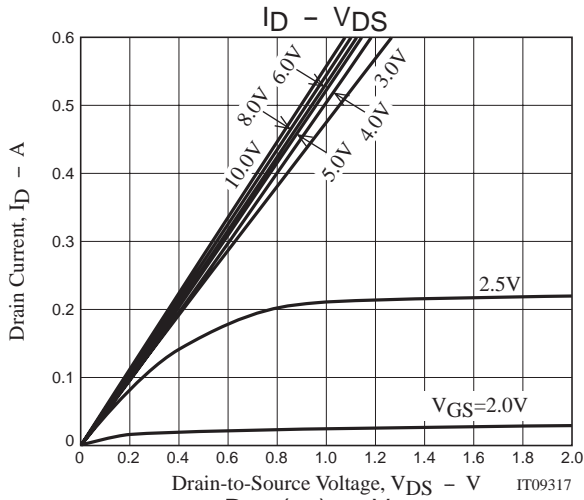
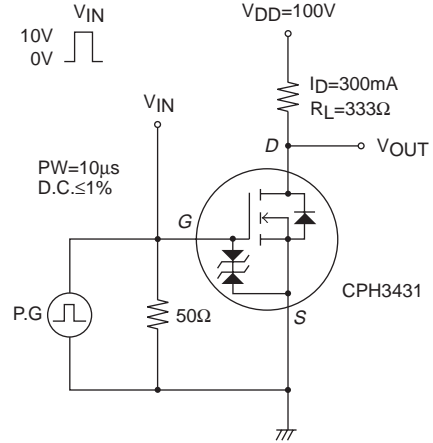
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Qg	V <sub>DS</sub> =100V, V <sub>GS</sub> =10V, I <sub>D</sub> =600mA		7		nC
Gate-to-Source Charge	Qgs	V <sub>DS</sub> =100V, V <sub>GS</sub> =10V, I <sub>D</sub> =600mA		1		nC
Gate-to-Drain "Miller" Charge	Qgd	V <sub>DS</sub> =100V, V <sub>GS</sub> =10V, I <sub>D</sub> =600mA		0.8		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =600mA, V <sub>GS</sub> =0V		0.79	1.2	V

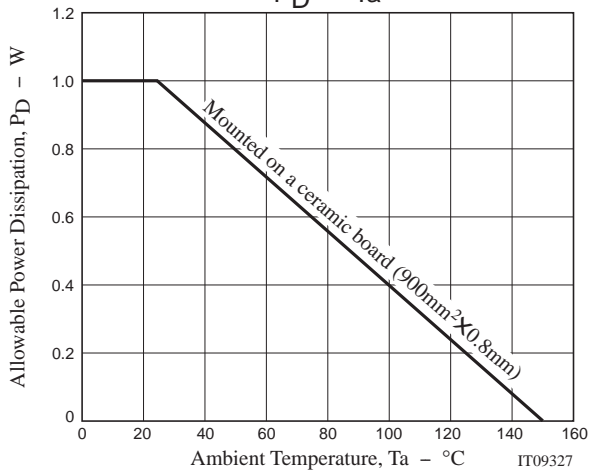
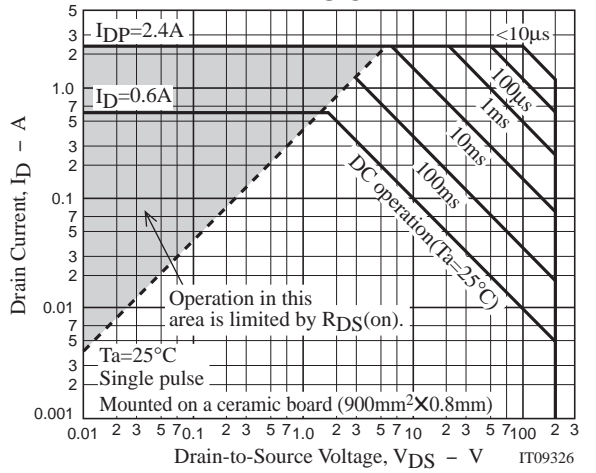
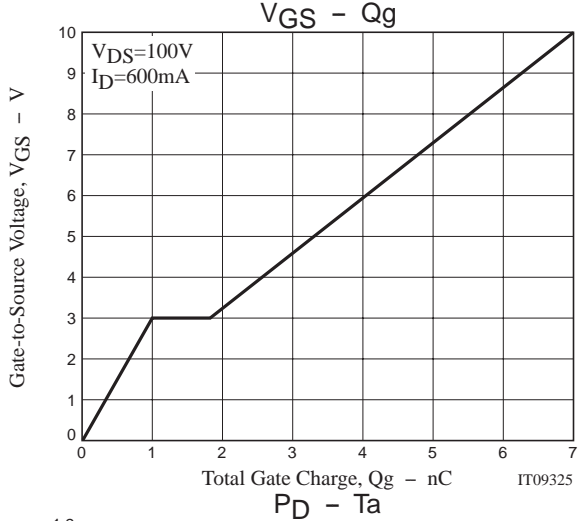
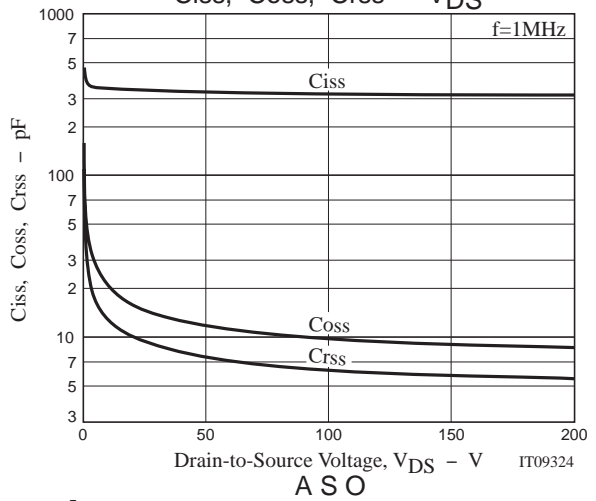
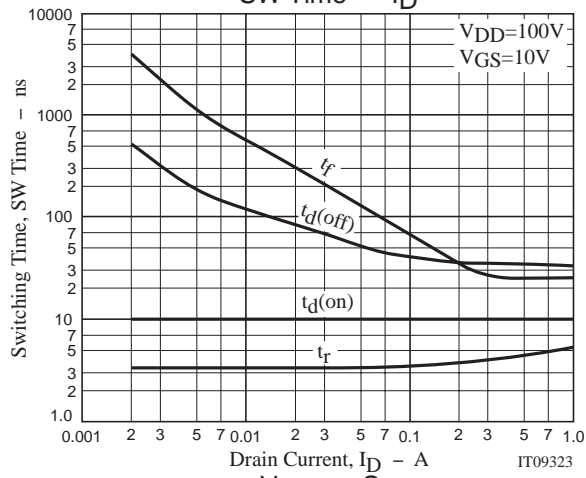
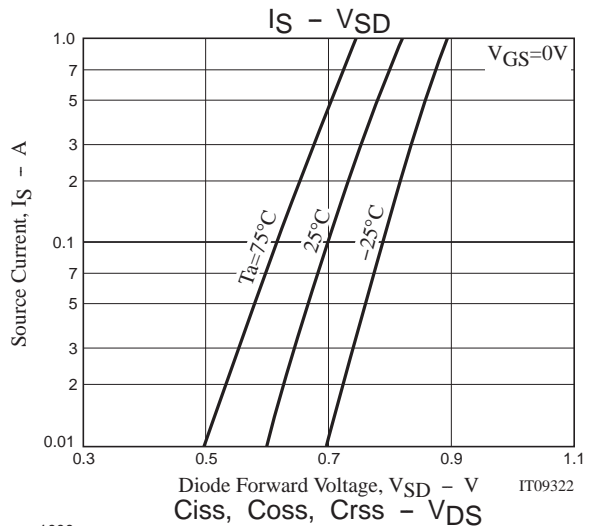
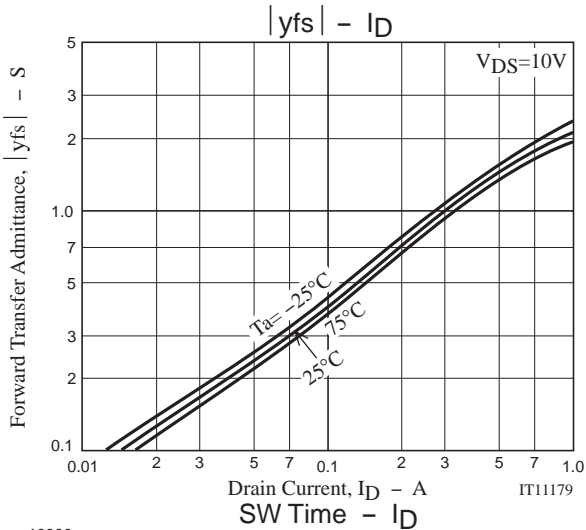
## Package Dimensions

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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