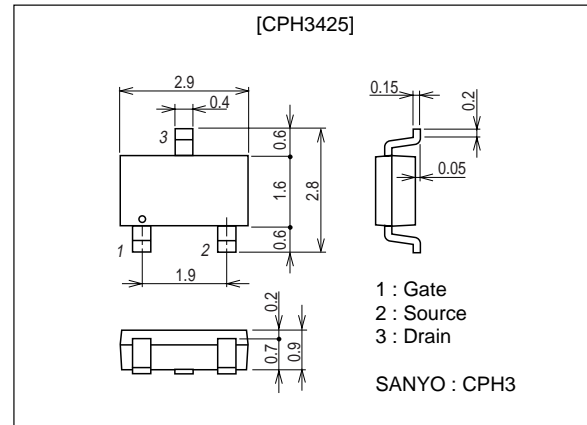


**CPH3425****Ultrahigh-Speed Switching Applications****Features**

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

**Package Dimensions**unit : mm  
2152A**Specifications****Absolute Maximum Ratings** at  $T_a=25^\circ\text{C}$ 

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		100	V
Gate-to-Source Voltage	$V_{GSS}$		$\pm 20$	V
Drain Current (DC)	$I_D$		0.5	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu\text{s}$ , duty cycle $\leq 1\%$	2	A
Allowable Power Dissipation	$P_D$	Mounted on a ceramic board (900mm $\times$ 0.8mm)	0.9	W
Channel Temperature	$T_{ch}$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

**Electrical Characteristics** at  $T_a=25^\circ\text{C}$ 

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1\text{mA}$ , $V_{GS}=0$	100			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=100\text{V}$ , $V_{GS}=0$			1	$\mu\text{A}$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 16\text{V}$ , $V_{DS}=0$			$\pm 10$	$\mu\text{A}$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10\text{V}$ , $I_D=1\text{mA}$	1.2		2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10\text{V}$ , $I_D=250\text{mA}$	0.4	0.8		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=250\text{mA}$ , $V_{GS}=10\text{V}$		1.4	1.85	$\Omega$
	$R_{DS(on)2}$	$I_D=250\text{mA}$ , $V_{GS}=4\text{V}$		1.8	2.5	$\Omega$

Marking : ZA

Continued on next page.

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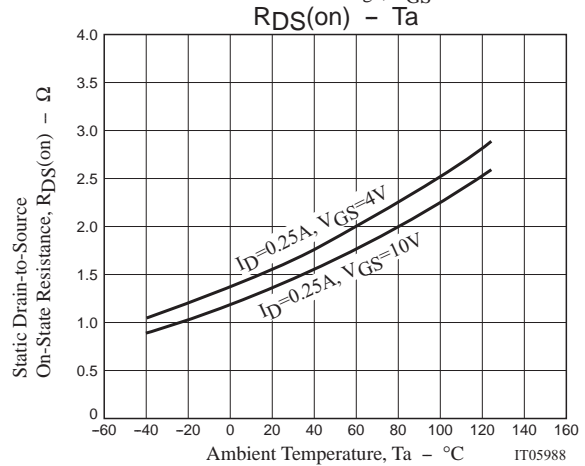
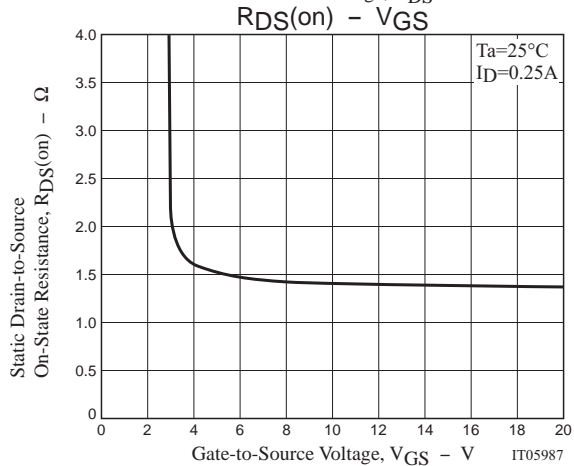
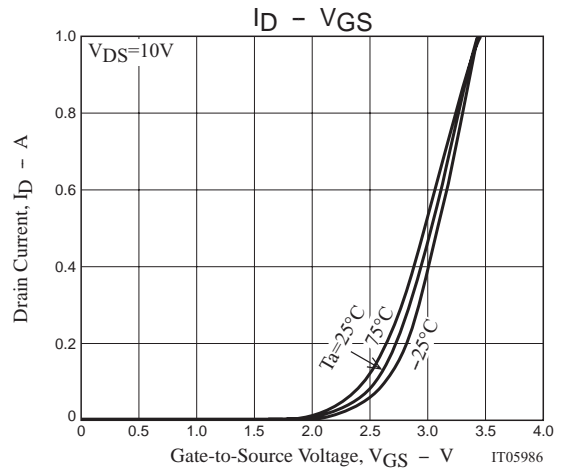
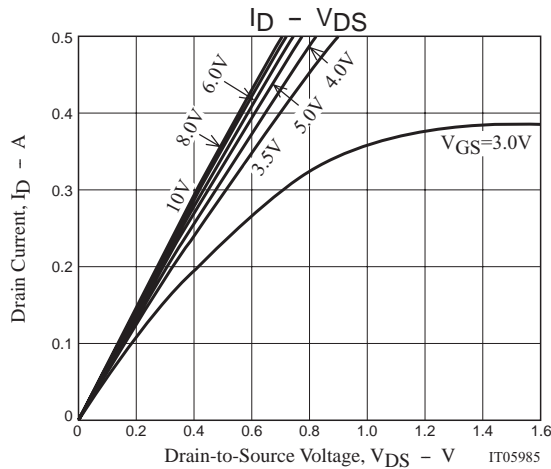
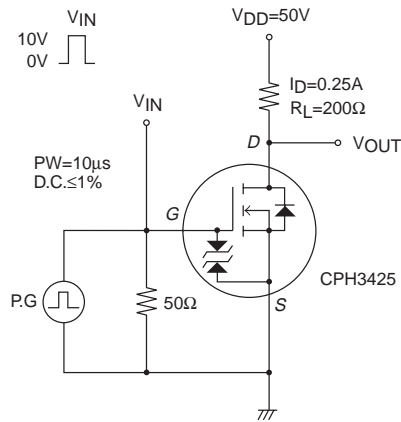
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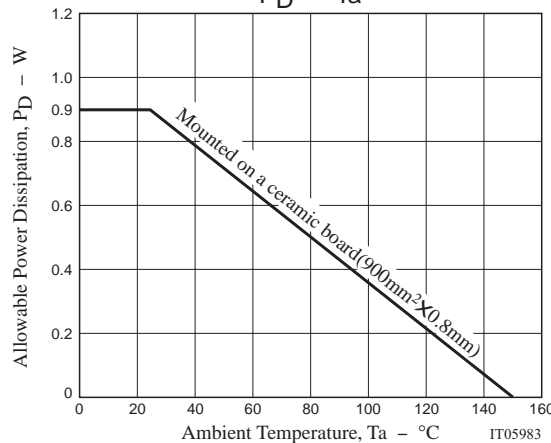
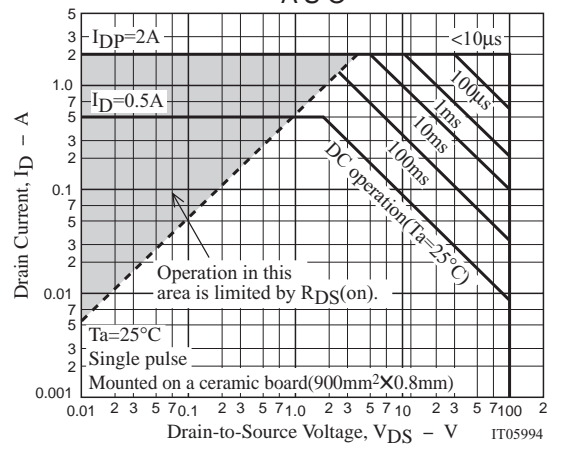
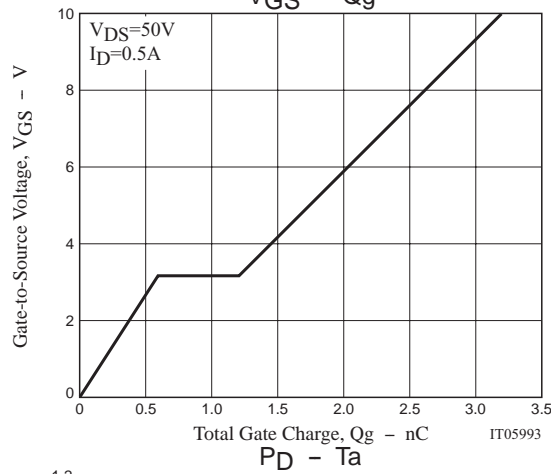
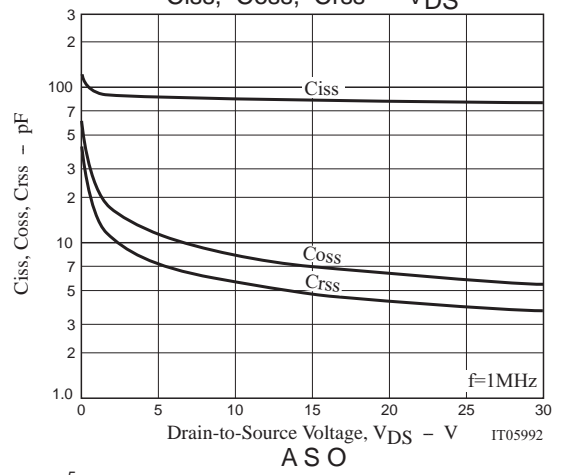
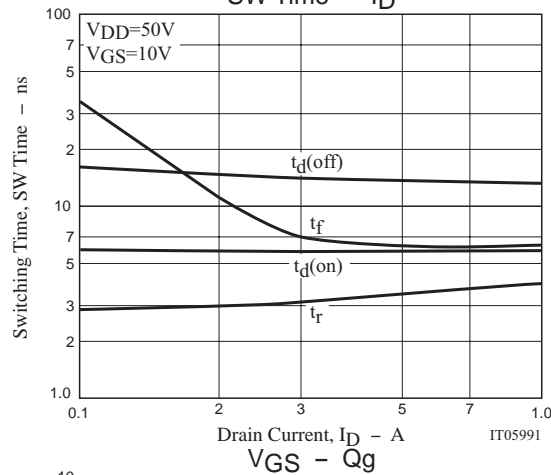
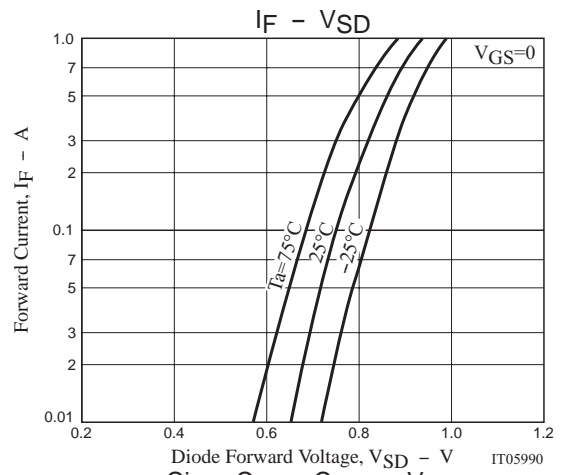
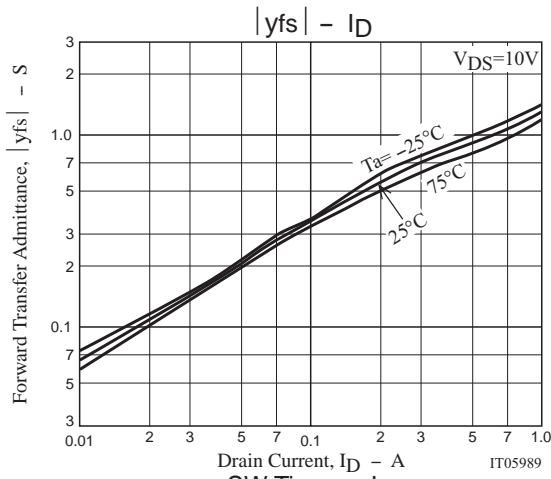
# CPH3425

Continued from preceding page.

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V <sub>DS</sub> =20V, f=1MHz		80		pF
Output Capacitance	Coss	V <sub>DS</sub> =20V, f=1MHz		6.5		pF
Reverse Transfer Capacitance	Crss	V <sub>DS</sub> =20V, f=1MHz		4		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See specified Test Circuit.		6		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit.		3		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>	See specified Test Circuit.		14		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit.		8		ns
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =50V, V <sub>GS</sub> =10V, I <sub>D</sub> =0.5A		3.2		nC
Gate-to-Source Charge	Q <sub>gs</sub>	V <sub>DS</sub> =50V, V <sub>GS</sub> =10V, I <sub>D</sub> =0.5A		0.6		nC
Gate-to-Drain "Miller" Charge	Q <sub>gd</sub>	V <sub>DS</sub> =50V, V <sub>GS</sub> =10V, I <sub>D</sub> =0.5A		0.6		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =0.5A, V <sub>GS</sub> =0		0.87	1.2	V

## Switching Time Test Circuit





Note on usage : Since the CPH3425 is designed for high-speed switching applications, please avoid using this device in the vicinity of highly charged objects.

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