5Ordering number : ENN7529

N-Channel Silicon MOSFET

CPH3425

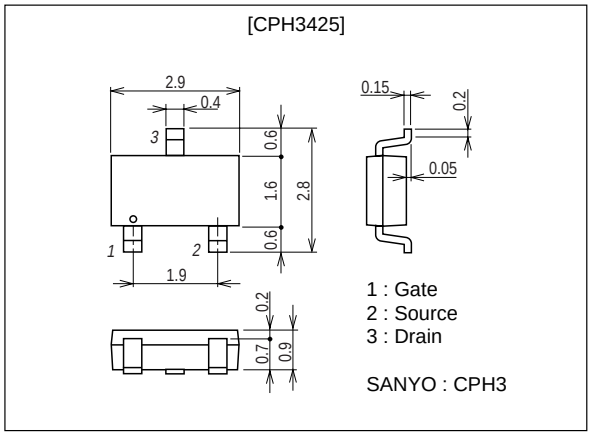
Ultrahigh-Speed Switching Applications

Features

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

Package Dimensions

unit : mm
2152A



Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		100	V
Gate-to-Source Voltage	V_{GSS}		±20	V
Drain Current (DC)	I_D		0.5	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	2	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (900mm²×0.8mm)	0.9	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		−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	100			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=100V, V_{GS}=0			1	μA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±16V, V_{DS}=0			±10	μA
Cutoff Voltage	$V_{GS}(off)$	V_{DS}=10V, I_D=1mA	1.2		2.6	V
Forward Transfer Admittance	$\|yfs\|$	V_{DS}=10V, I_D=250mA	0.4	0.8		S
Static Drain-to-Source On-State Resistance	$R_{DS}(on)1$	I_D=250mA, V_{GS}=10V		1.4	1.85	Ω
	$R_{DS}(on)2$	I_D=250mA, V_{GS}=4V		1.8	2.5	Ω

Marking : ZA

Continued on next page.

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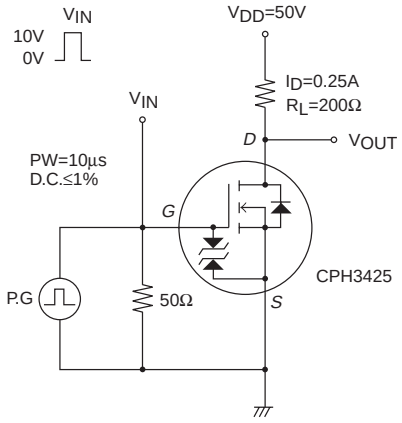
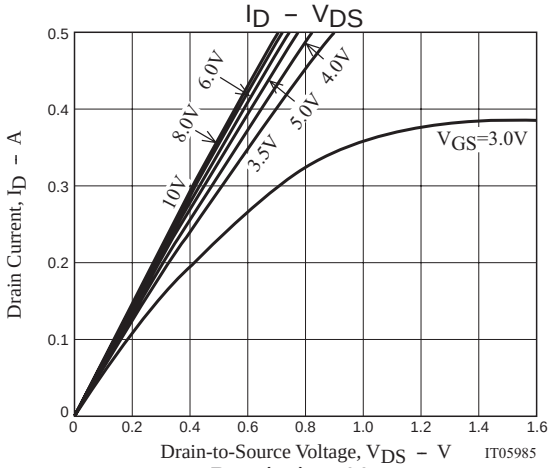
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

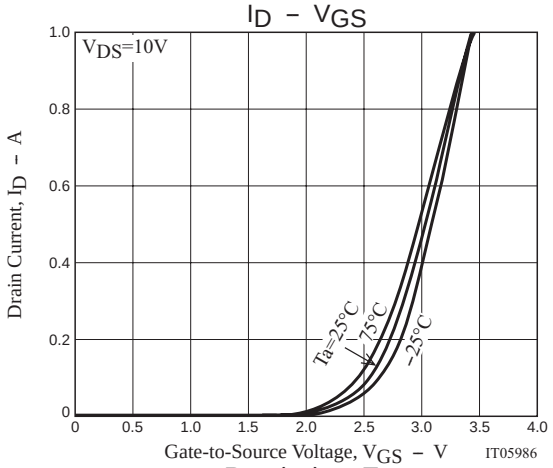
Continued from preceding page.

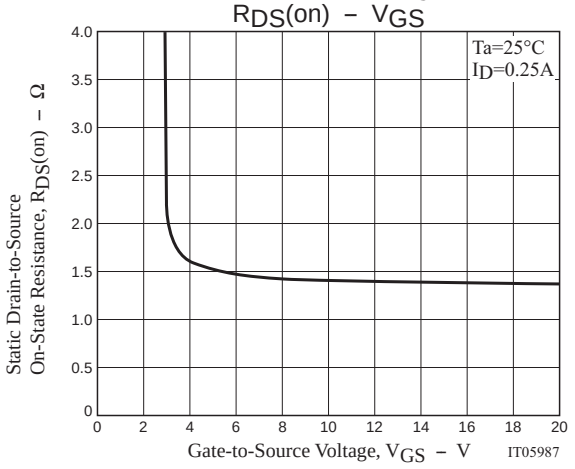
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V_{DS}=20V, f=1MHz		80		pF
Output Capacitance	Coss	V_{DS}=20V, f=1MHz		6.5		pF
Reverse Transfer Capacitance	Crss	V_{DS}=20V, f=1MHz		4		pF
Turn-ON Delay Time	t_d(on)	See specified Test Circuit.		6		ns
Rise Time	t_r	See specified Test Circuit.		3		ns
Turn-OFF Delay Time	t_d(off)	See specified Test Circuit.		14		ns
Fall Time	t_f	See specified Test Circuit.		8		ns
Total Gate Charge	Qg	V_{DS}=50V, V_{GS}=10V, I_D=0.5A		3.2		nC
Gate-to-Source Charge	Qgs	V_{DS}=50V, V_{GS}=10V, I_D=0.5A		0.6		nC
Gate-to-Drain “Miller” Charge	Qgd	V_{DS}=50V, V_{GS}=10V, I_D=0.5A		0.6		nC
Diode Forward Voltage	V_{SD}	I_S=0.5A, V_{GS}=0		0.87	1.2	V

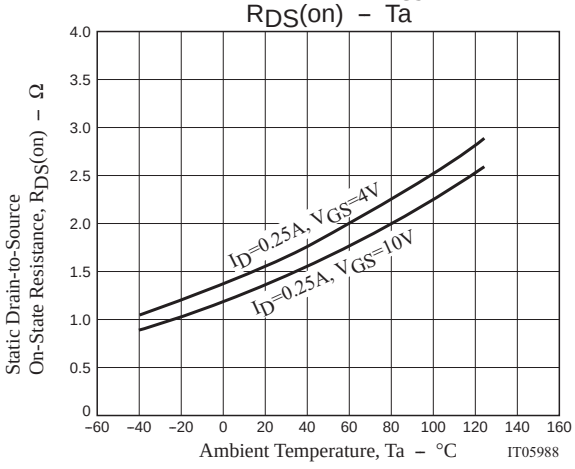
Switching Time Test Circuit

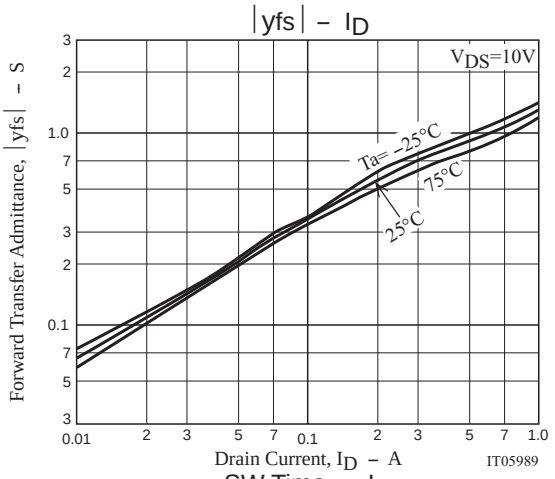


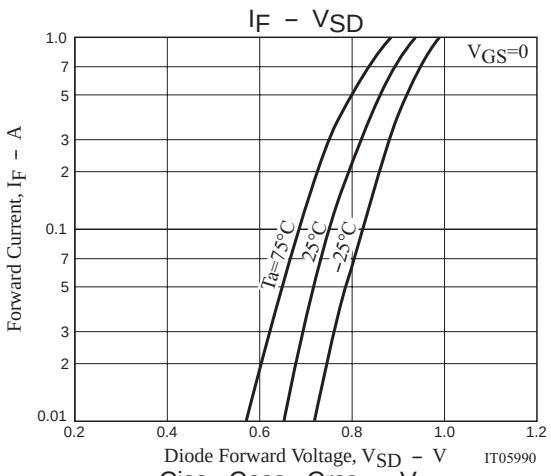


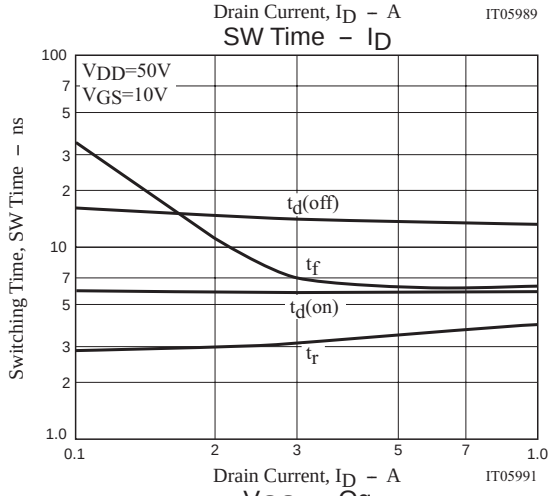


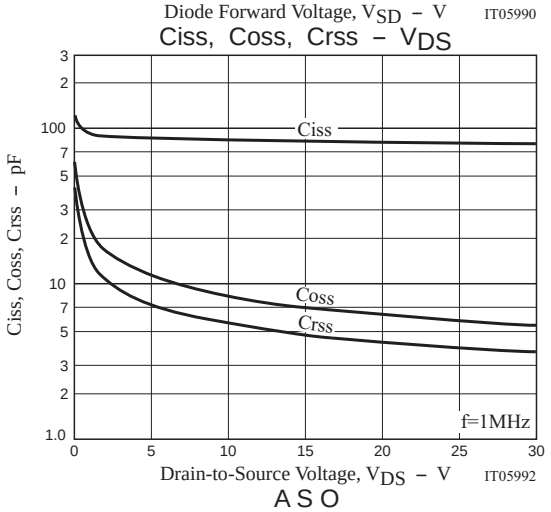


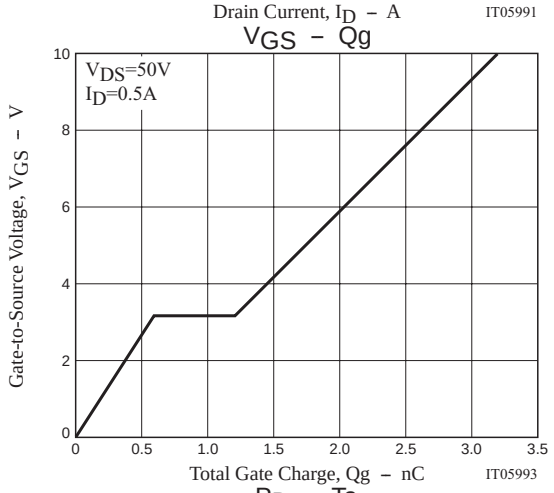


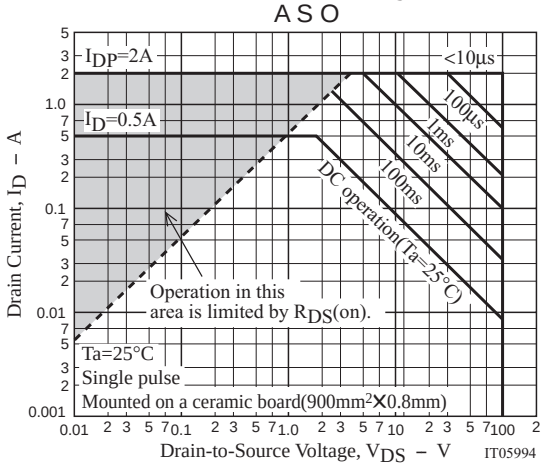


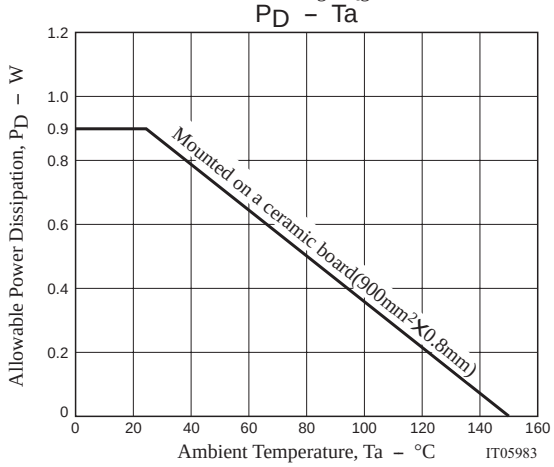












Note on usage : Since the CPH3425 is designed for high-speed switching applications, please avoid using this device in the vicinity of highly charged objects.

This catalog provides information as of February, 2004. Specifications and information herein are subject to change without notice.