Ordering number : ENN7536

N-Channel Silicon MOSFET

CPH3422

Ultrahigh-Speed Switching Applications

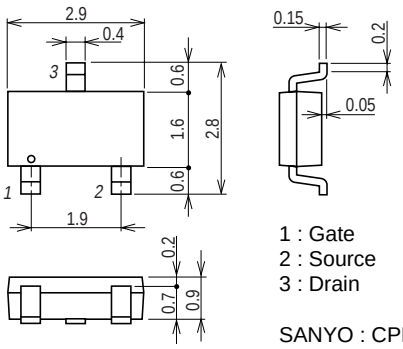
Features

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

Package Dimensions

unit : mm
2152A

[CPH3422]



1 : Gate
2 : Source
3 : Drain

SANYO : CPH3

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		60	V
Gate-to-Source Voltage	V_{GSS}		±20	V
Drain Current (DC)	I_D		1	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	4	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	60			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V, 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=0.5A	0.45	0.9		S
Static Drain-to-Source On-State Resistance	$R_{DS}(on)1$	I_D=0.5A, V_{GS}=10V		480	630	mΩ
	$R_{DS}(on)2$	I_D=0.5A, V_{GS}=4V		640	900	mΩ

Marking : KX

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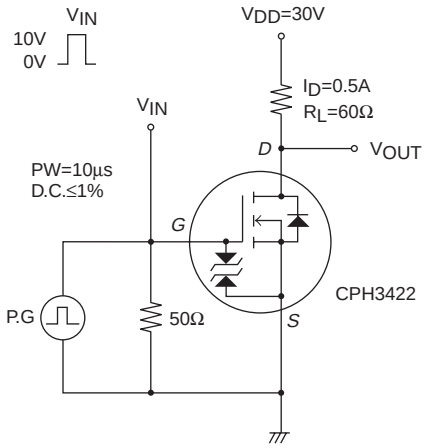
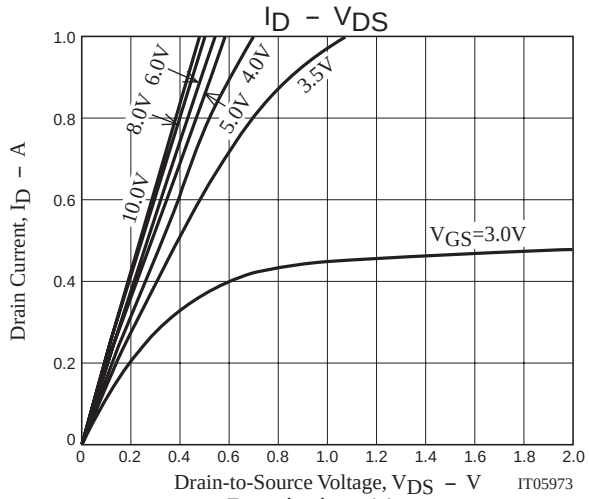
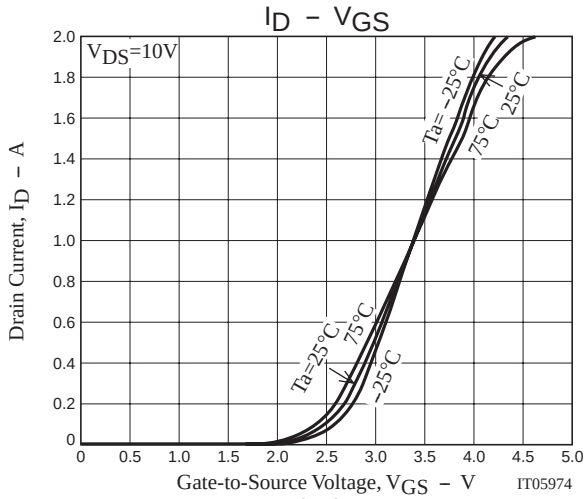
Continued from preceding page.

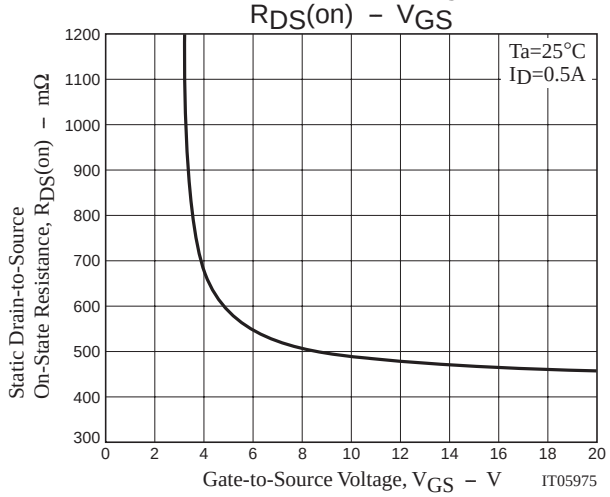
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V_{DS}=20V, f=1MHz		70		pF
Output Capacitance	Coss	V_{DS}=20V, f=1MHz		9.0		pF
Reverse Transfer Capacitance	Crss	V_{DS}=20V, f=1MHz		6.5		pF
Turn-ON Delay Time	t_{d}(on)	See specified Test Circuit.		5		ns
Rise Time	t_{r}	See specified Test Circuit.		4		ns
Turn-OFF Delay Time	t_{d}(off)	See specified Test Circuit.		12		ns
Fall Time	t_{f}	See specified Test Circuit.		12		ns
Total Gate Charge	Qg	V_{DS}=30V, V_{GS}=10V, I_{D}=1A		3.0		nC
Gate-to-Source Charge	Qgs	V_{DS}=30V, V_{GS}=10V, I_{D}=1A		0.6		nC
Gate-to-Drain “Miller” Charge	Qgd	V_{DS}=30V, V_{GS}=10V, I_{D}=1A		0.6		nC
Diode Forward Voltage	V_{SD}	I_{S}=1A, V_{GS}=0		0.9	1.2	V

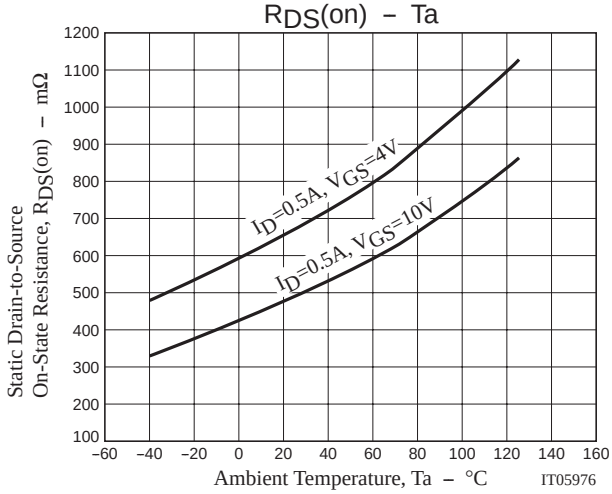
Switching Time Test Circuit

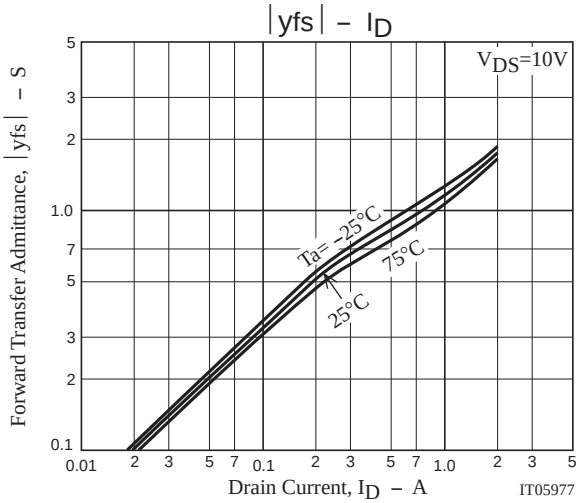


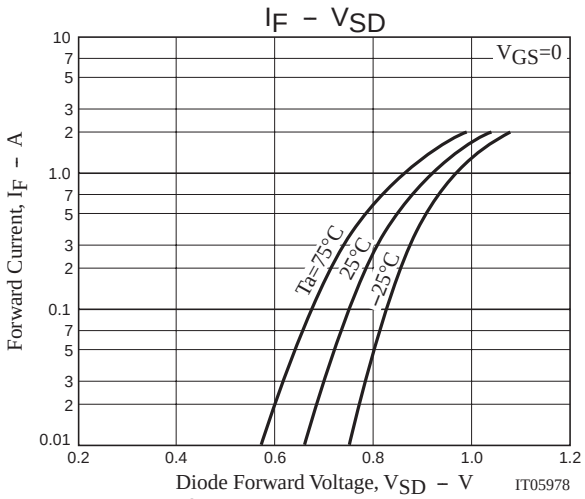


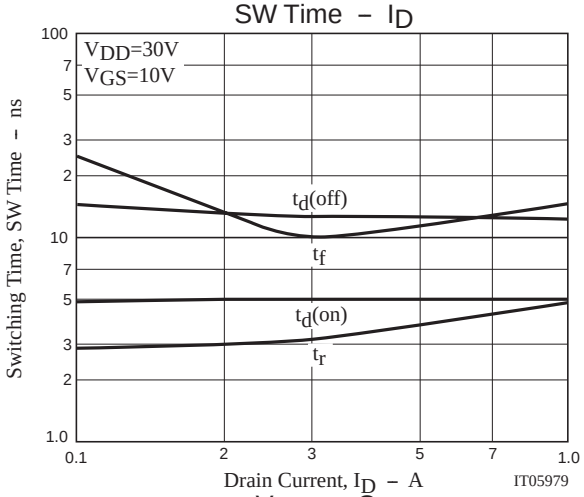


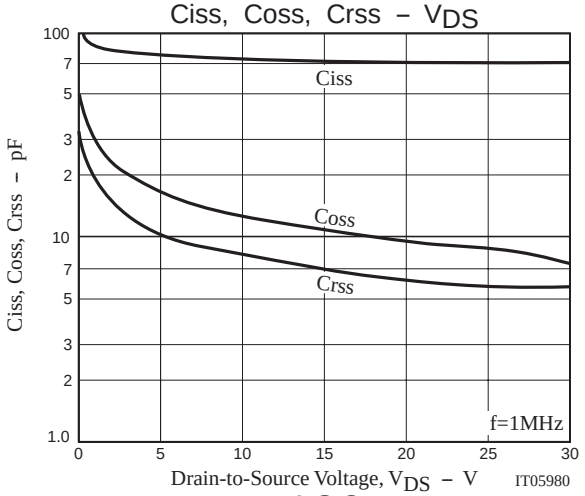


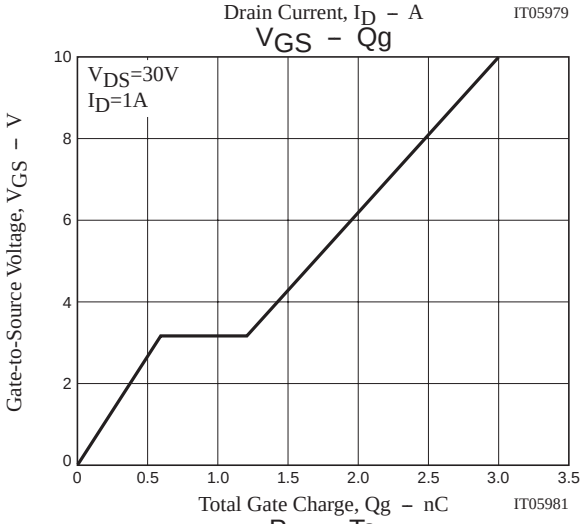


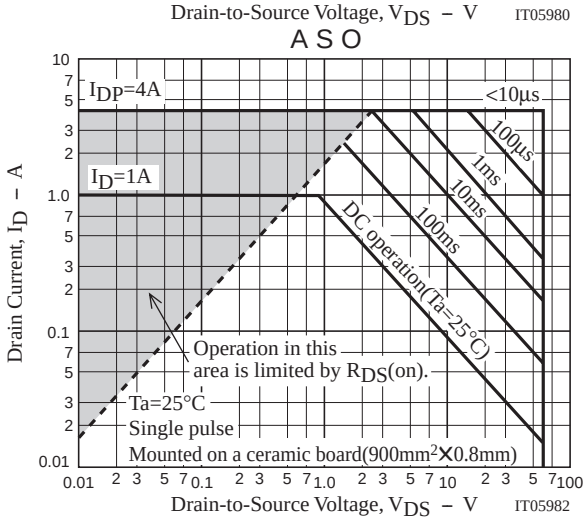


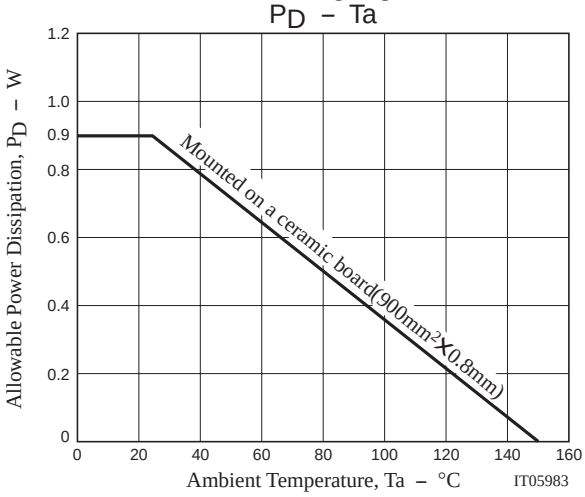












Note on usage : Since the CPH3422 is designed for high-speed switching applications, please avoid using this device in the vicinity of highly charged objects.