



MCH3421 — 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}		100	V
Gate-to-Source Voltage	V _{GSS}		±20	V
Drain Current (DC)	I _D		0.8	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	3.2	A
Allowable Power Dissipation	P _D	Mounted on a ceramic board (900mm ² ×0.8mm)	0.9	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} =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	y _{fs}	V _{DS} =10V, I _D =400mA	0.5	1.0		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =400mA, V _{GS} =10V		0.68	0.89	Ω
	R _{DS(on)2}	I _D =400mA, V _{GS} =4V		0.85	1.2	Ω
Input Capacitance	C _{iss}	V _{DS} =20V, f=1MHz		165		pF
Output Capacitance	C _{oss}	V _{DS} =20V, f=1MHz		13		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} =20V, f=1MHz		8.0		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit.		7		ns
Rise Time	t _r	See specified Test Circuit.		3		ns
Turn-OFF Delay Time	t _{d(off)}	See specified Test Circuit.		22		ns
Fall Time	t _f	See specified Test Circuit.		10		ns

Marking : KW

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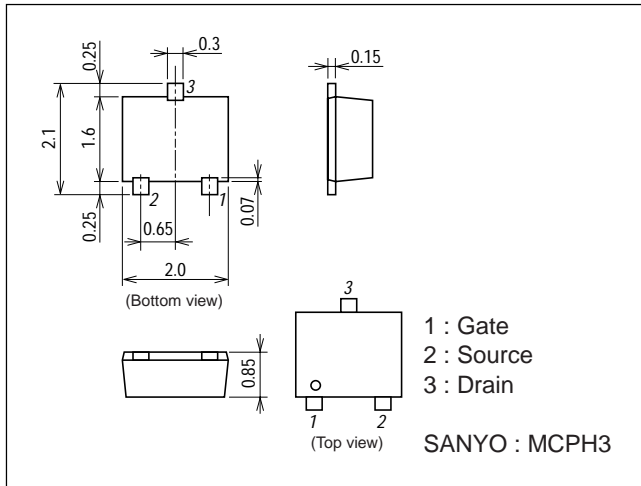
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Qg	V _{DS} =50V, V _{GS} =10V, I _D =0.8A		4.8		nC
Gate-to-Source Charge	Qgs	V _{DS} =50V, V _{GS} =10V, I _D =0.8A		0.9		nC
Gate-to-Drain "Miller" Charge	Qgd	V _{DS} =50V, V _{GS} =10V, I _D =0.8A		0.9		nC
Diode Forward Voltage	V _{SD}	I _S =0.8A, V _{GS} =0		0.86	1.2	V

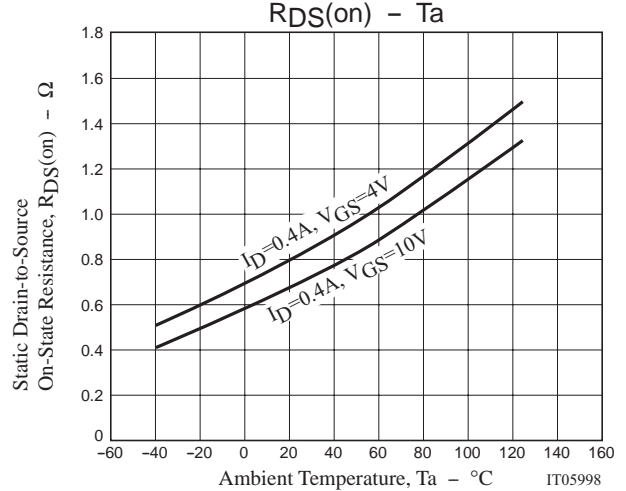
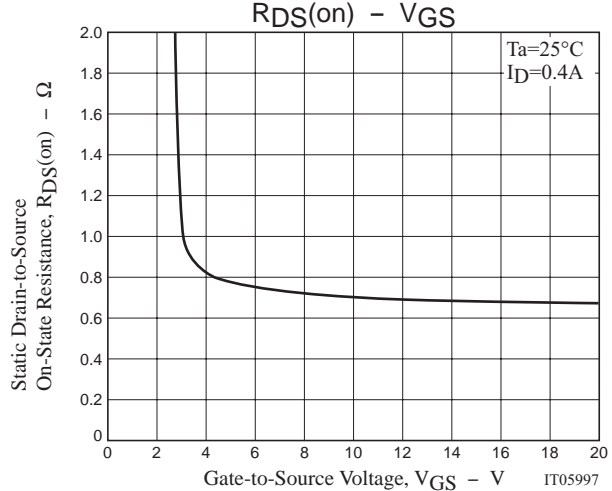
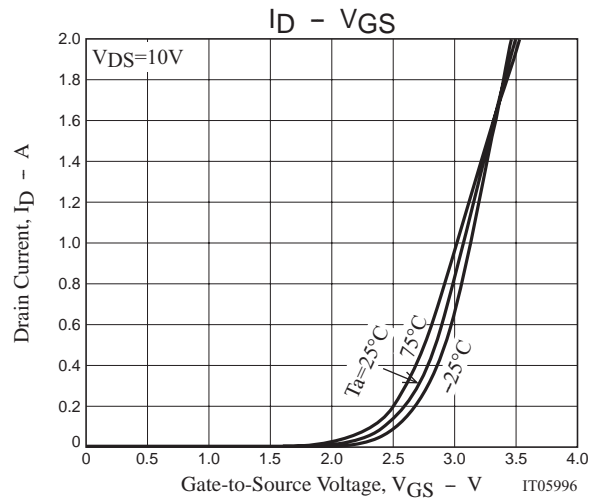
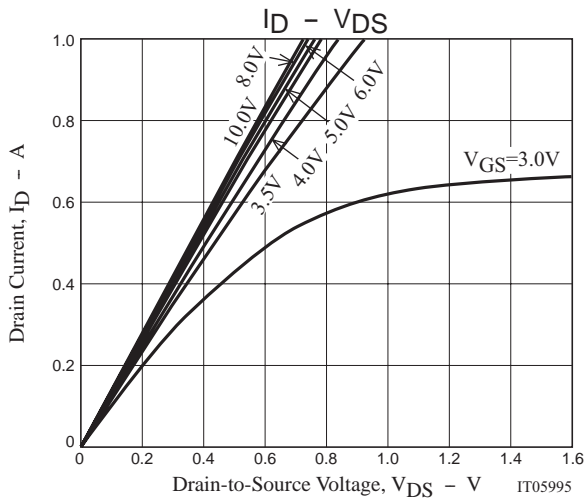
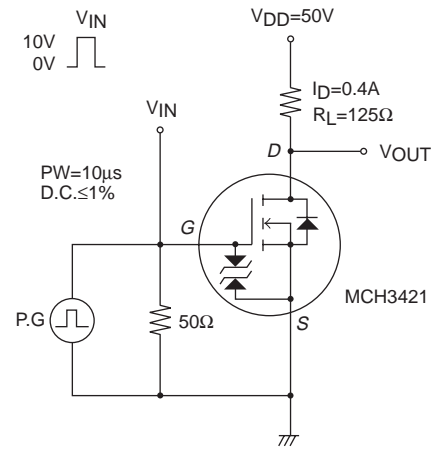
Package Dimensions

unit : mm

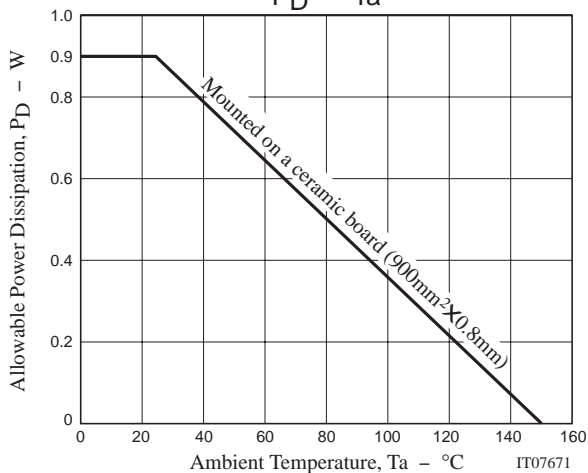
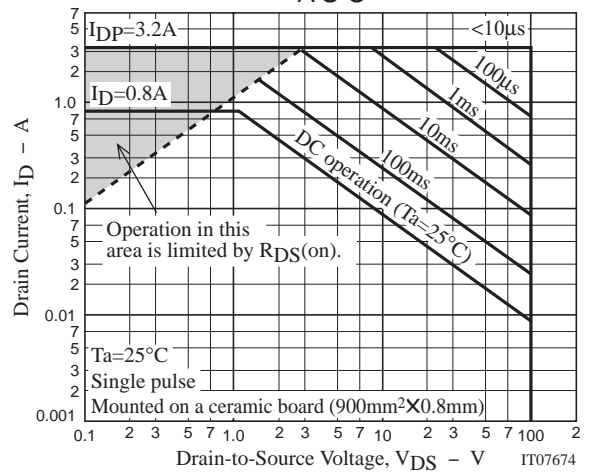
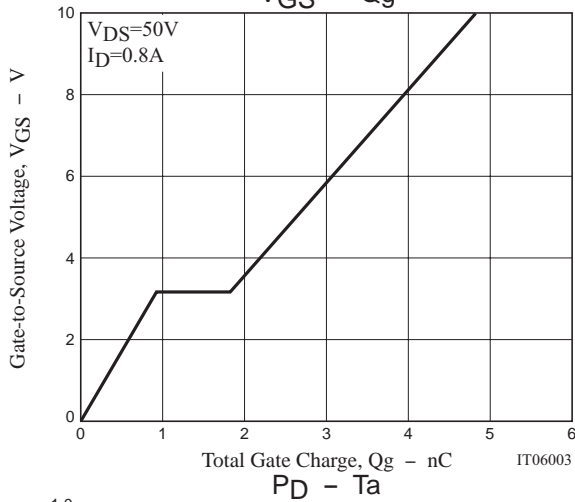
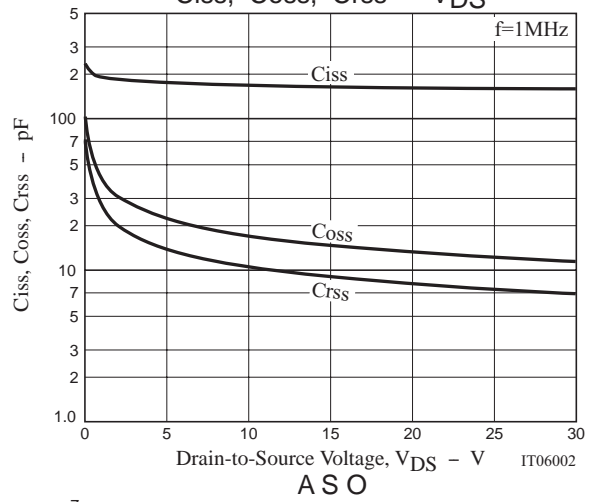
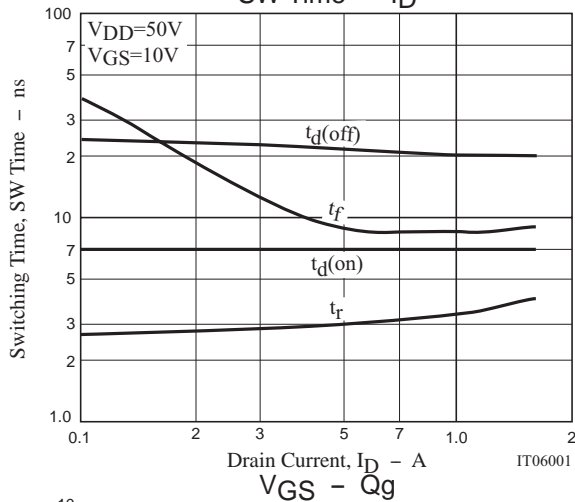
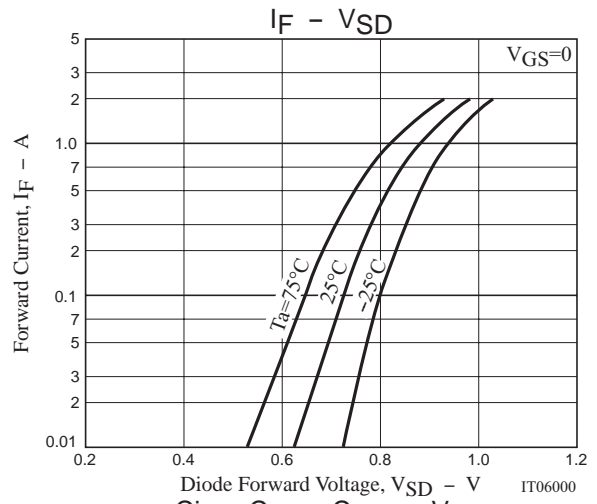
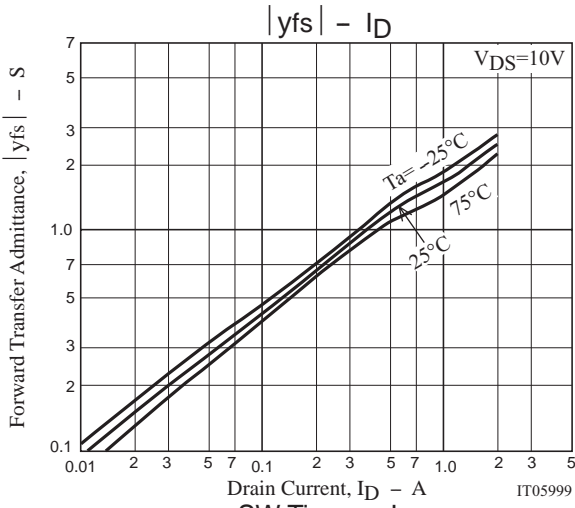
2167A



Switching Time Test Circuit



MCH3421



Note on usage : Since the MCH3421 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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