



MCH3416 — 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}		60	V
Gate-to-Source Voltage	V _{GSS}		±20	V
Drain Current (DC)	I _D		1.8	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	7.2	A
Allowable Power Dissipation	P _D	Mounted on a ceramic board (900mm ² ×0.8mm)	1	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	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	y _{fs}	V _{DS} =10V, I _D =0.9A	1.1	2.1		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =0.9A, V _{GS} =10V		170	220	mΩ
	R _{DS(on)2}	I _D =0.9A, V _{GS} =4V		210	300	mΩ
Input Capacitance	C _{iss}	V _{DS} =20V, f=1MHz		220		pF
Output Capacitance	C _{oss}	V _{DS} =20V, f=1MHz		28		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} =20V, f=1MHz		20		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit.		8		ns
Rise Time	t _r	See specified Test Circuit.		5		ns
Turn-OFF Delay Time	t _{d(off)}	See specified Test Circuit.		27		ns
Fall Time	t _f	See specified Test Circuit.		20		ns

Marking : KR

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MCH3416

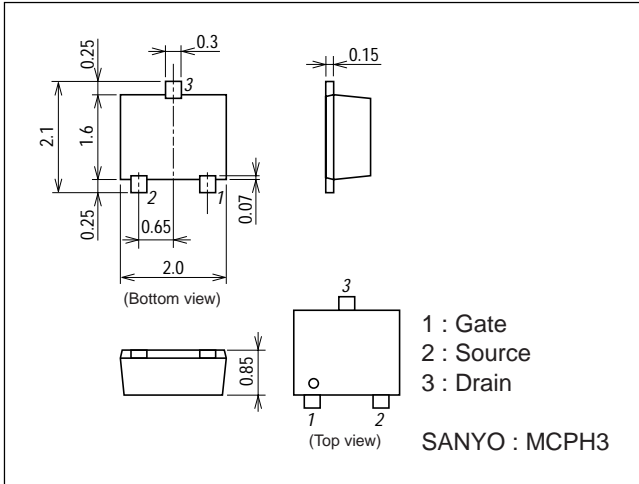
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Qg	V _{DS} =30V, V _{GS} =10V, I _D =1.8A		6.4		nC
Gate-to-Source Charge	Qgs	V _{DS} =30V, V _{GS} =10V, I _D =1.8A		1.1		nC
Gate-to-Drain "Miller" Charge	Qgd	V _{DS} =30V, V _{GS} =10V, I _D =1.8A		1.1		nC
Diode Forward Voltage	V _{SD}	I _S =1.8A, V _{GS} =0		0.85	1.2	V

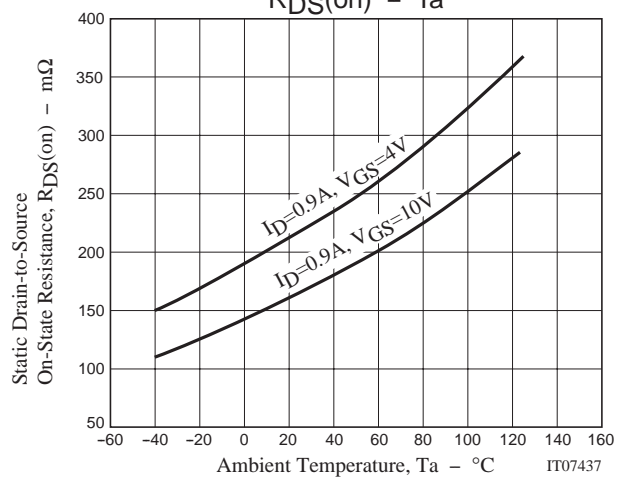
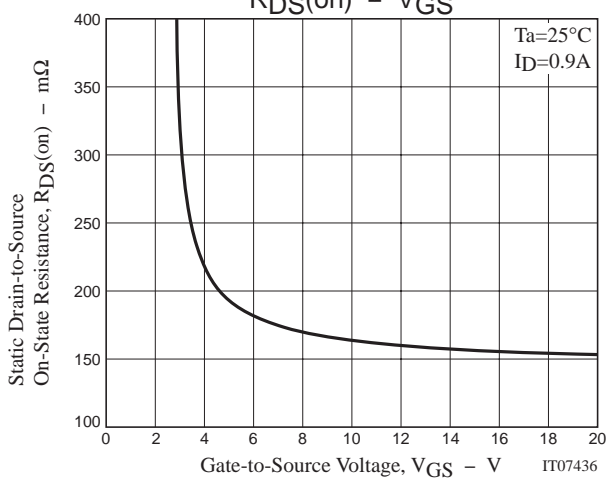
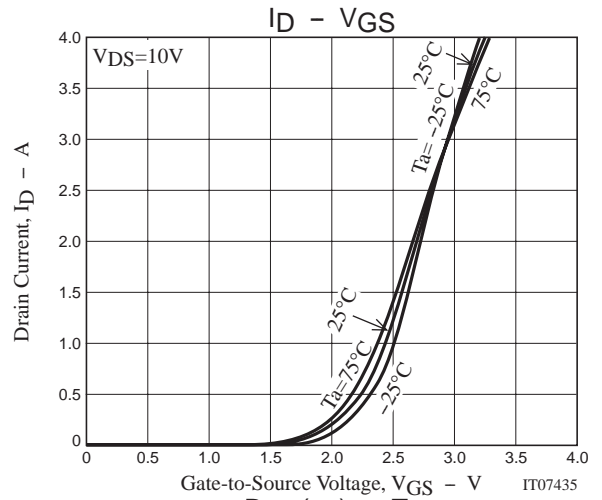
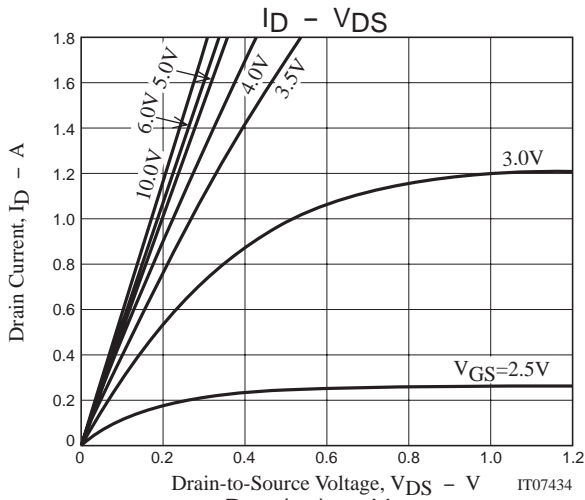
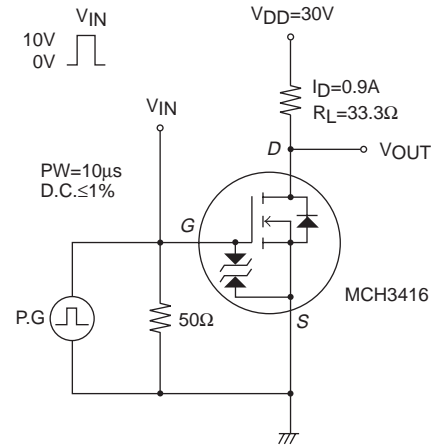
Package Dimensions

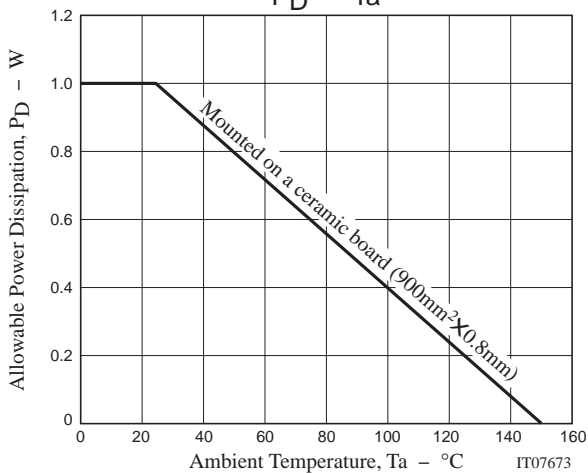
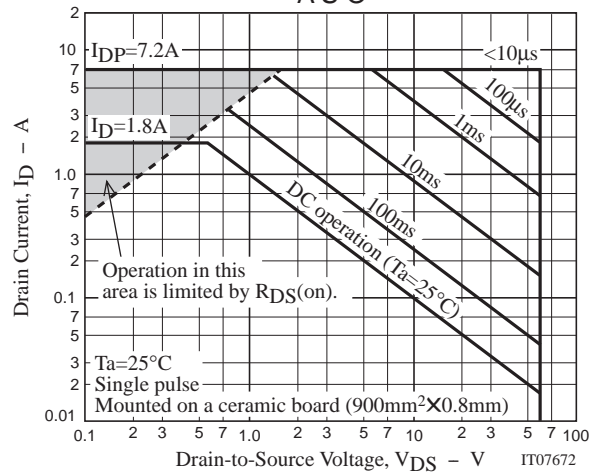
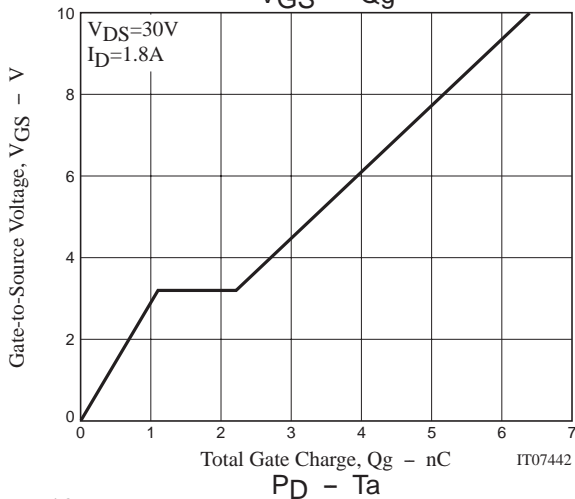
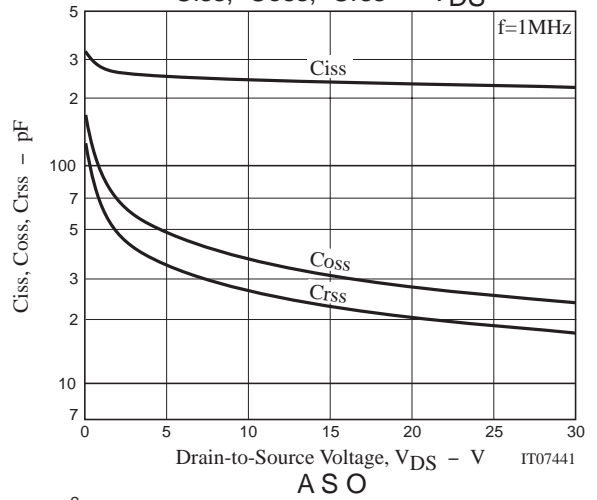
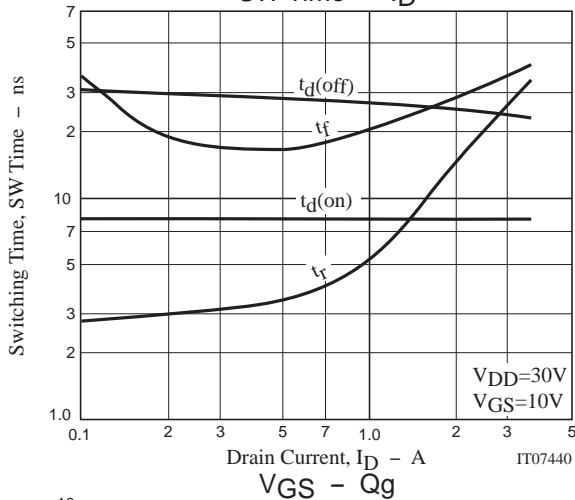
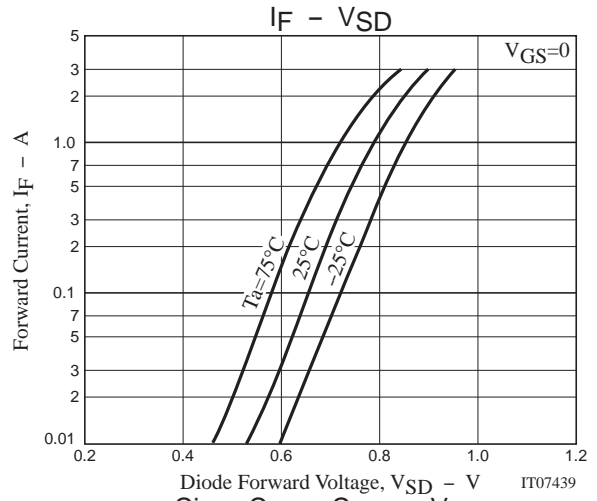
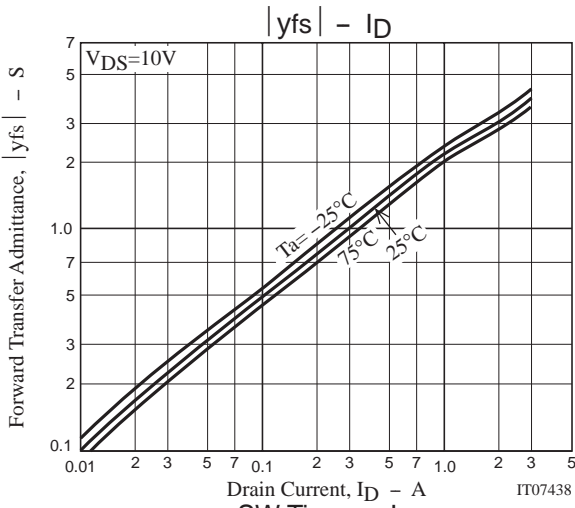
unit : mm

2167A



Switching Time Test Circuit





Note on usage : Since the MCH3416 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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