



MCH3477 — N-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

- Ultrahigh-speed switching.
- 1.8V drive.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		20	V
Gate-to-Source Voltage	V _{GSS}		±12	V
Drain Current (DC)	I _D		4.5	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	18	A
Allowable Power Dissipation	P _D	When mounted on ceramic substrate (900mm ² ×0.8mm)	1.0	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} =0V	20			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =20V, V _{GS} =0V			1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±8V, V _{DS} =0V			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =10V, I _D =1mA	0.4		1.3	V
Forward Transfer Admittance	y _{fs}	V _{DS} =10V, I _D =2A	2.0	3.4		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =2A, V _{GS} =4.5V		29	38	mΩ
	R _{DS(on)2}	I _D =1A, V _{GS} =2.5V		43	61	mΩ
	R _{DS(on)3}	I _D =0.5A, V _{GS} =1.8V		69	99	mΩ
Input Capacitance	C _{iss}	V _{DS} =10V, f=1MHz		410		pF
Output Capacitance	C _{oss}	V _{DS} =10V, f=1MHz		84		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} =10V, f=1MHz		59		pF

Marking : FJ

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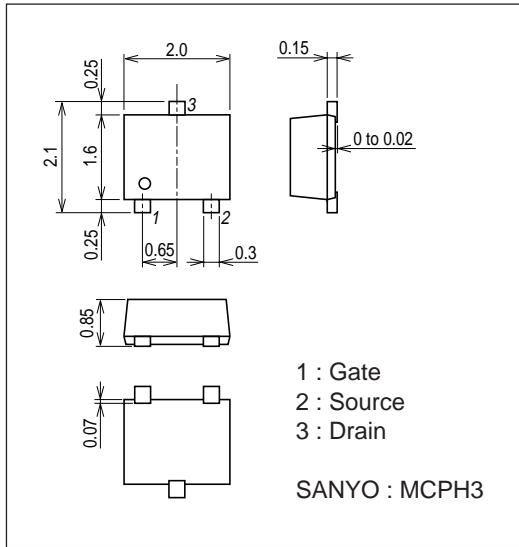
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		7.5		ns
Rise Time	t_r	See specified Test Circuit.		26		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		38		ns
Fall Time	t_f	See specified Test Circuit.		32		ns
Total Gate Charge	Q_g	$V_{DS}=10V, V_{GS}=4.5V, I_D=4.5A$		5.1		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=10V, V_{GS}=4.5V, I_D=4.5A$		0.7		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=10V, V_{GS}=4.5V, I_D=4.5A$		1.7		nC
Diode Forward Voltage	V_{SD}	$I_S=4.5A, V_{GS}=0V$		0.78	1.2	V

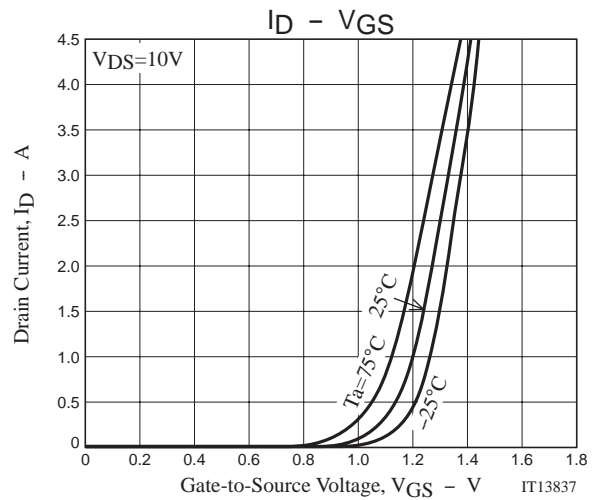
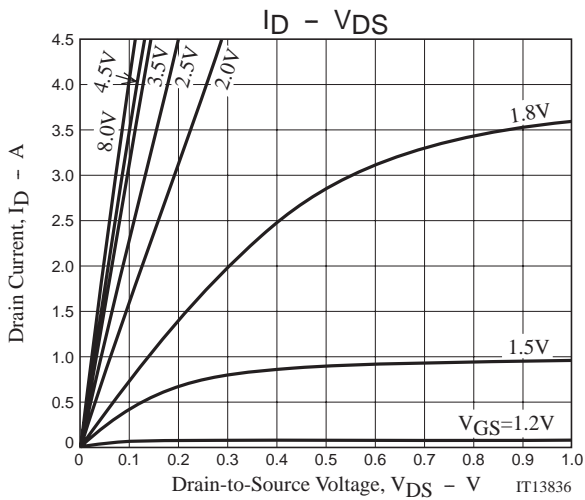
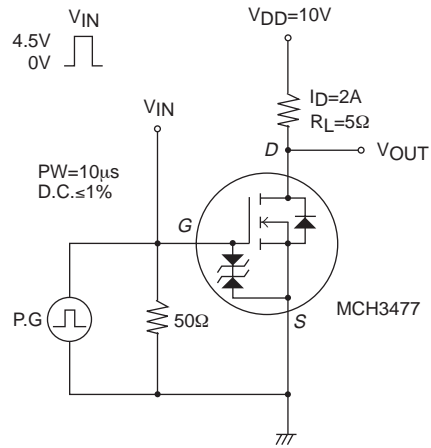
Package Dimensions

unit : mm (typ)

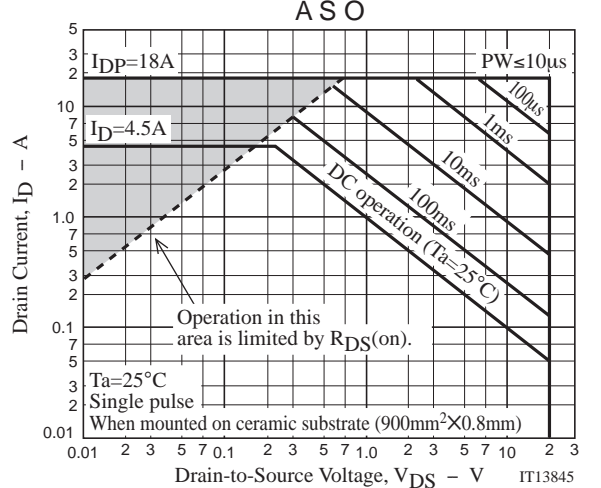
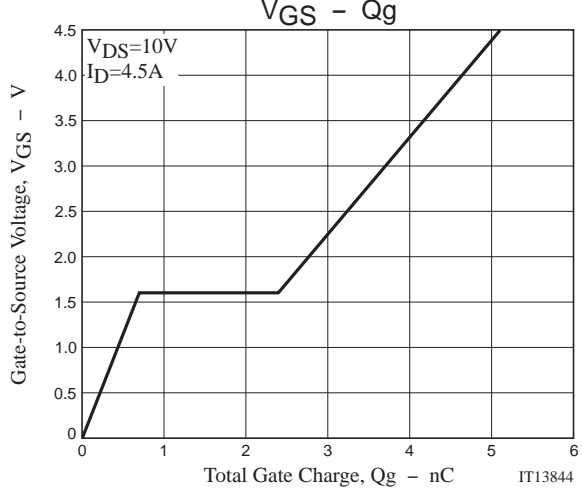
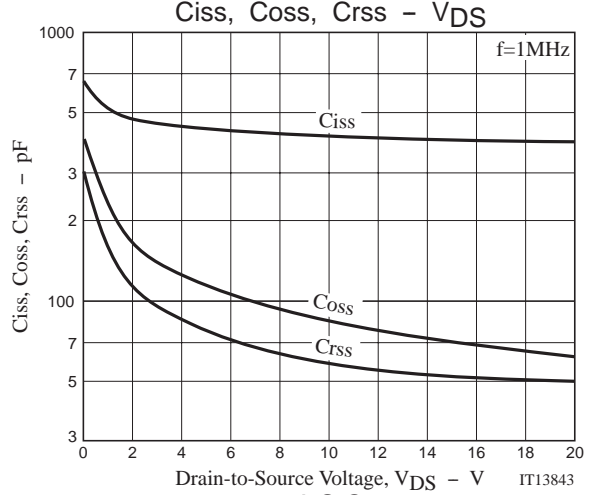
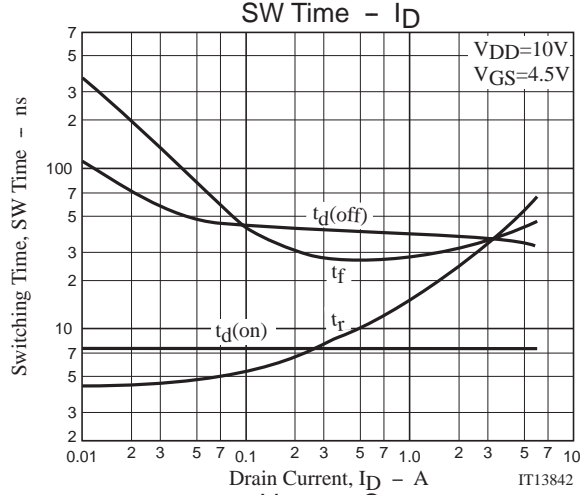
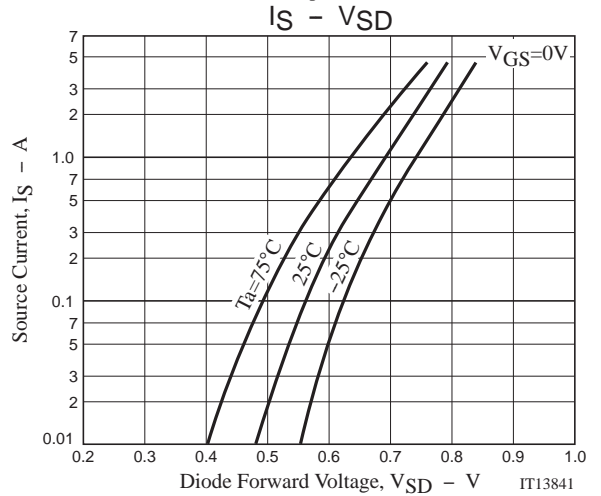
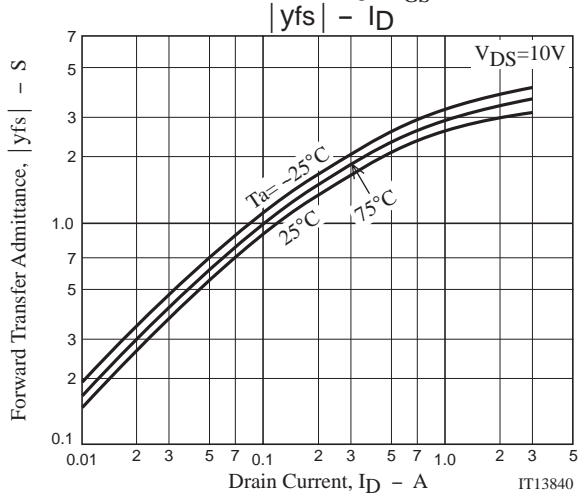
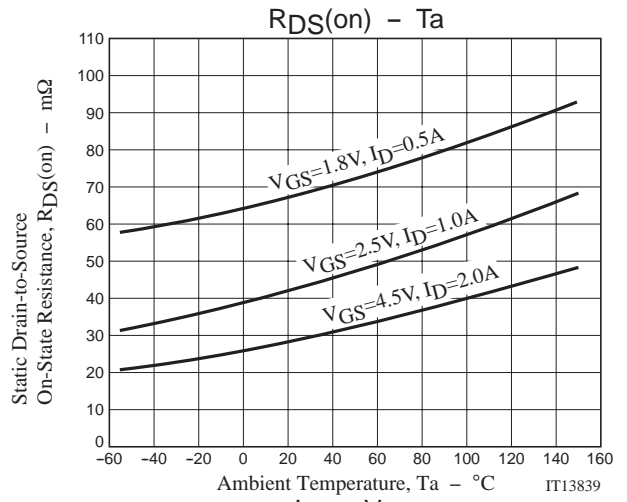
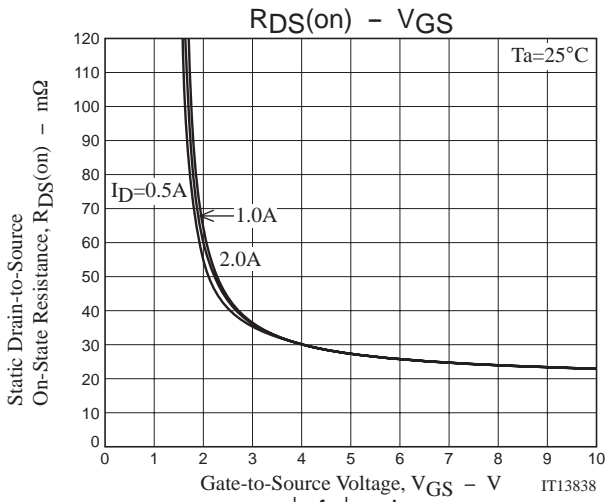
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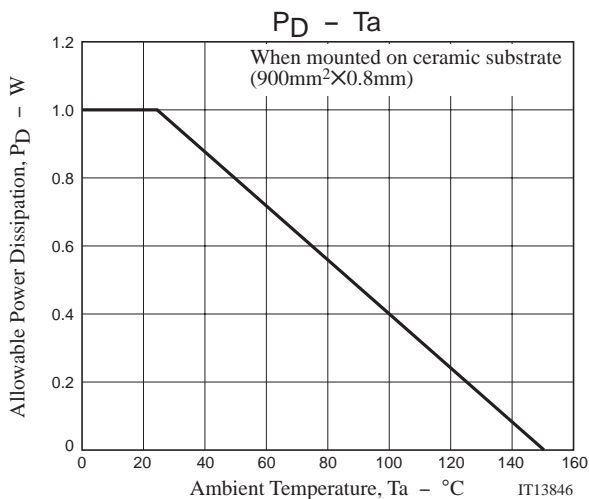


Switching Time Test Circuit



MCH3477





Note on usage : Since the MCH3477 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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