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MCH3477

N-Channel Power MOSFET 20V, 4.5A, 38mΩ, Single MCPH3

Features

- Ultrahigh speed switching
- Halogen free compliance
- 1.8V drive
- Protection diode in

Specifications

Absolute Maximum Ratings at Ta=25°C

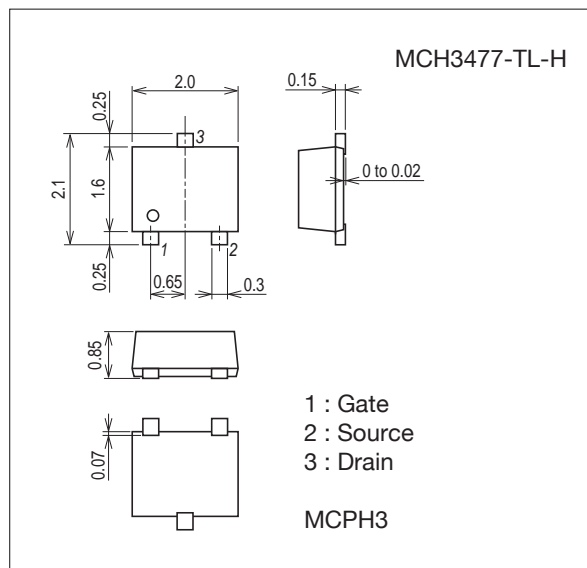
Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		20	V
Gate-to-Source Voltage	V _{GSS}		±12	V
Drain Current (DC)	I _D		4.5	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	18	A
Allowable Power Dissipation	P _D	When mounted on ceramic substrate (900mm ² ×0.8mm)	1.0	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Package Dimensions

unit : mm (typ)

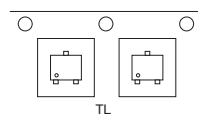
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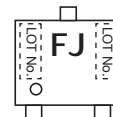
Product & Package Information

- Package : MCPH3
- JEITA, JEDEC : SC-70, SOT-323
- Minimum Packing Quantity : 3,000 pcs./reel

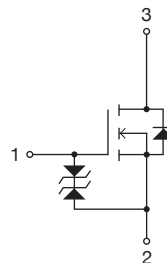
Packing Type : TL



Marking



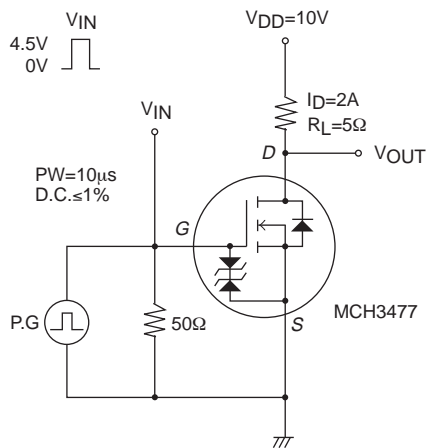
Electrical Connection



Electrical Characteristics at Ta=25°C

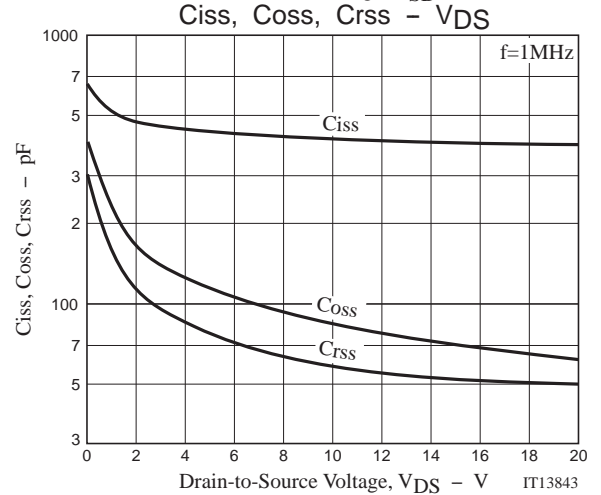
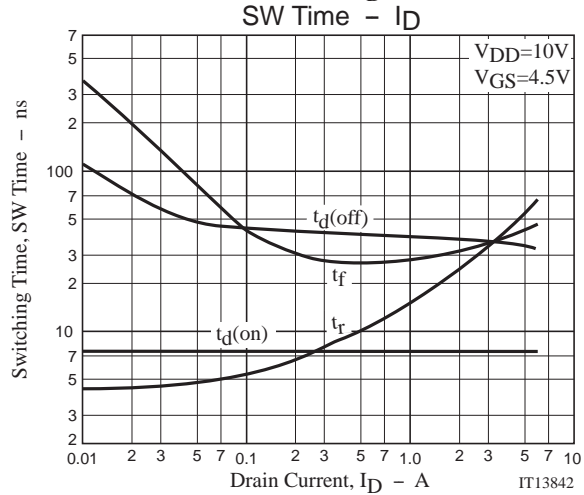
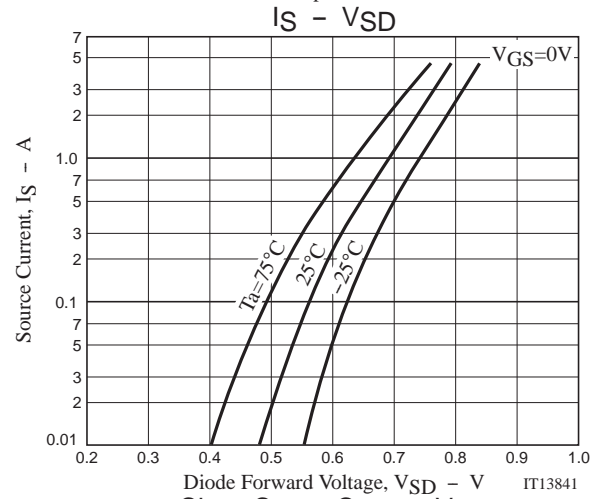
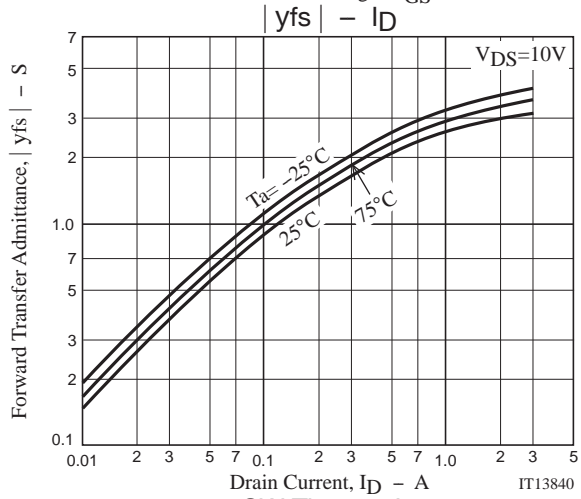
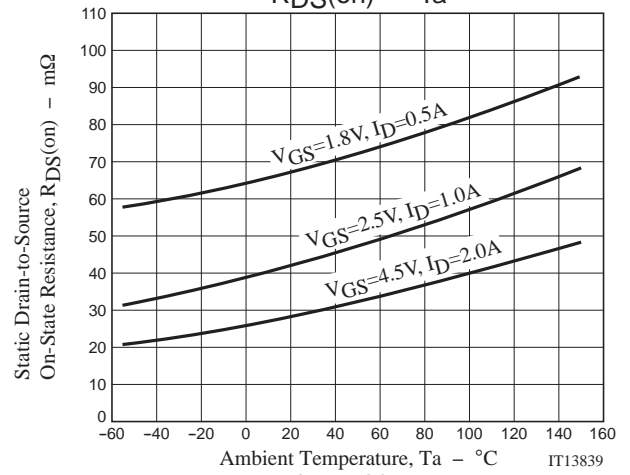
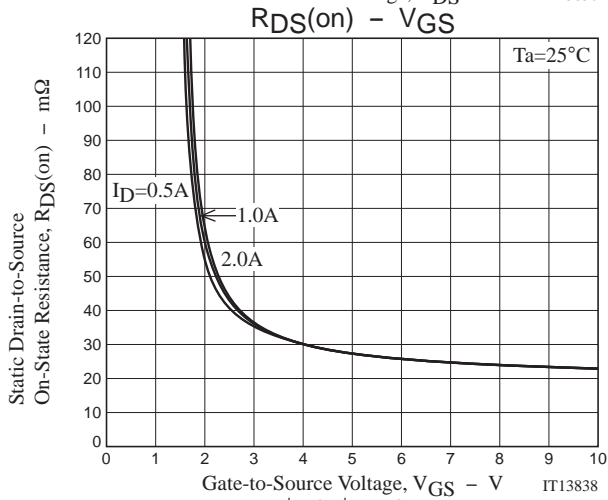
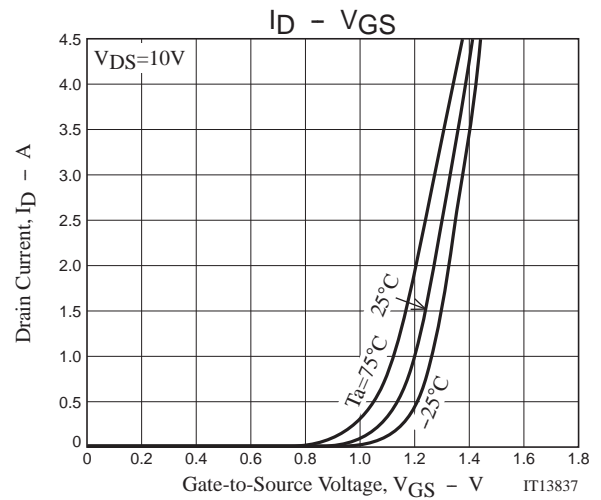
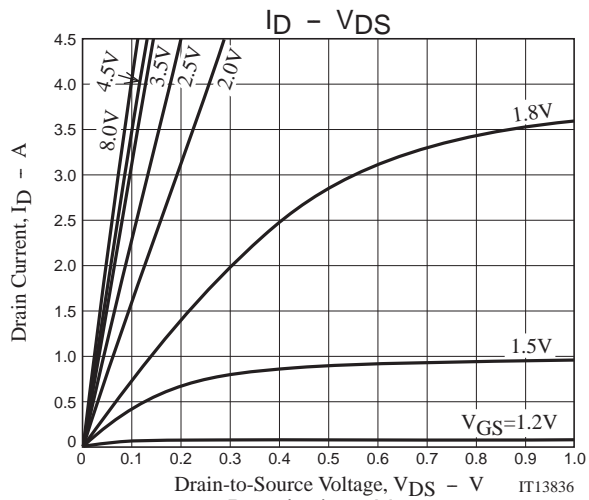
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0V$	20			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=20V, V_{GS}=0V$			1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 8V, V_{DS}=0V$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	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	m Ω
	$R_{DS(on)2}$	$I_D=1A, V_{GS}=2.5V$		43	61	m Ω
	$R_{DS(on)3}$	$I_D=0.5A, V_{GS}=1.8V$		69	99	m Ω
Input Capacitance	C_{iss}	$V_{DS}=10V, f=1MHz$		410		pF
Output Capacitance	C_{oss}			84		pF
Reverse Transfer Capacitance	C_{rss}			59		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		7.5		ns
Rise Time	t_r			26		ns
Turn-OFF Delay Time	$t_{d(off)}$			38		ns
Fall Time	t_f			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}			0.7		nC
Gate-to-Drain "Miller" Charge	Q_{gd}			1.7		nC
Diode Forward Voltage	V_{SD}	$I_S=4.5A, V_{GS}=0V$		0.78	1.2	V

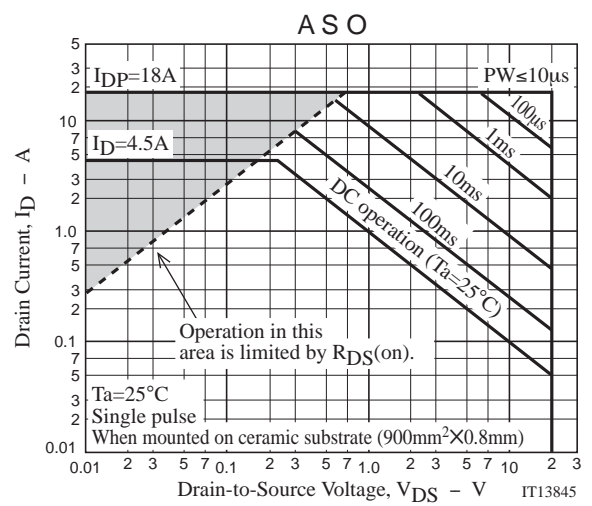
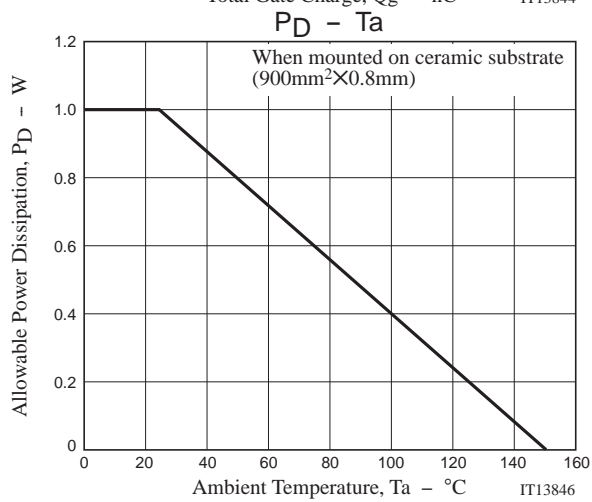
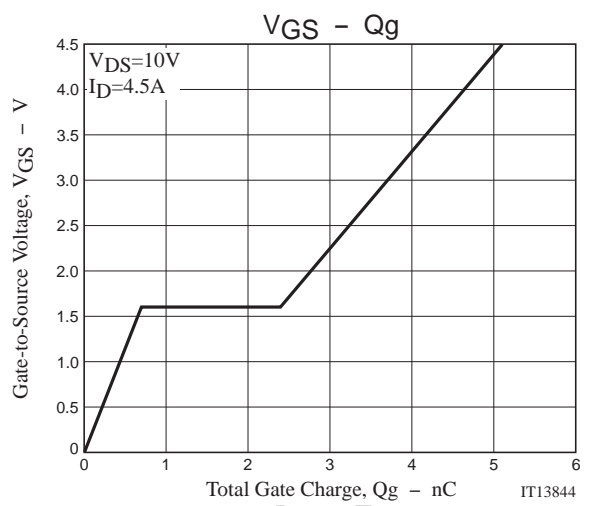
Switching Time Test Circuit



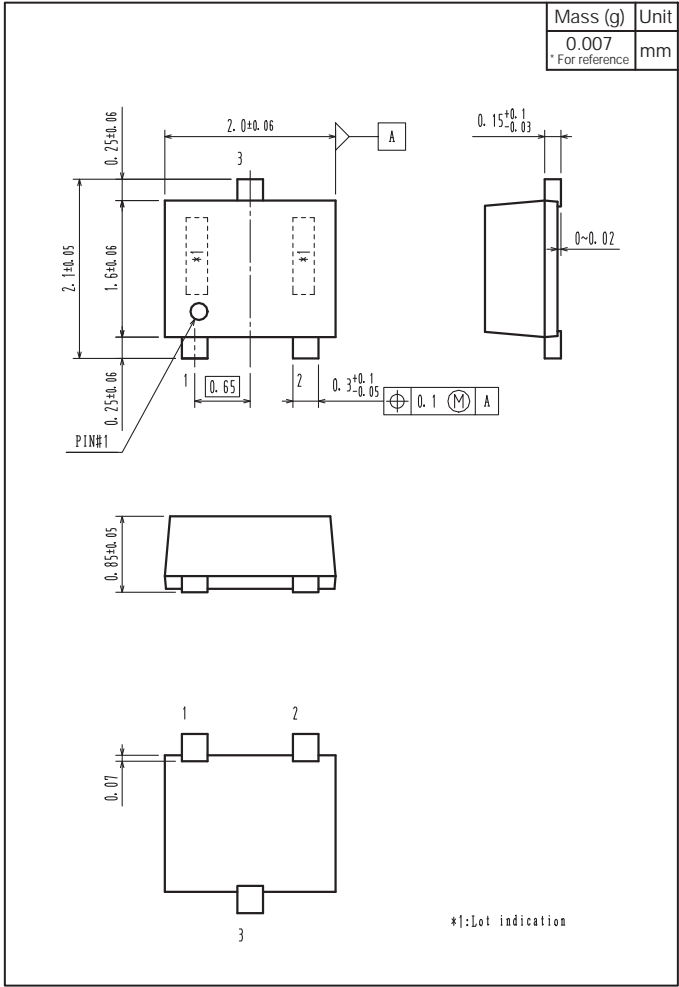
Ordering Information

Device	Package	Shipping	memo
MCH3477-TL-H	MCPH3	3,000pcs./reel	Pb Free and Halogen Free

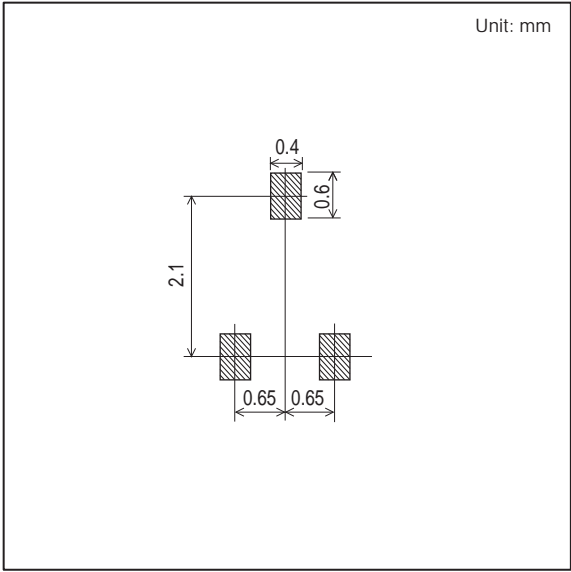




Outline Drawing
MCH3477-TL-H



Land Pattern Example



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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