Power MOSFET 60V, 137mΩ, 2A, Single N-Channel

ON Semiconductor®

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VDSS		R _{DS} (on) Max	I _D Max	
		137 mΩ@10V		
60	V	192 mΩ@4.5V	2A	
		217 mΩ@4V		

Features

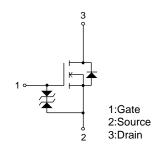
- Low R_{DS}(on)
- 4V Drive
- ESD Diode-Protected Gate
- Pb-Free, Halogen Free and RoHS Compliance
- Small Surface Mount Package (MCPH3)

Specifications

Absolute Maximum Ratings at Ta = 25°C

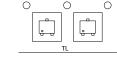
Parameter	Symbol	Value	Unit
Drain to Source Voltage	VDSS	60	V
Gate to Source Voltage	VGSS	±20	V
Drain Current (DC)	ID	2	Α
Drain Current (Pulse) PW≤10μs, duty cycle≤1%	IDP	8	А
Power Dissipation When mounted on ceramic substrate (900mm²×0.8mm)	PD	1	W
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-55 to +150	°C

Electrical Connection N-Channel



Packing Type:TL

Marking





Thermal Resistance Ratings

Parameter	Symbol	Value	Unit	
Junction to Ambient				
When mounted on ceramic substrate	$R_{\theta JA}$	125	°C/W	
(900mm ² ×0.8mm)				

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

ORDERING INFORMATION

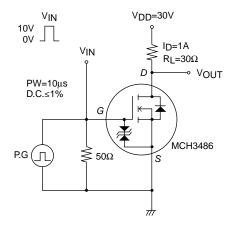
See detailed ordering and shipping information on page 5 of this data sheet.

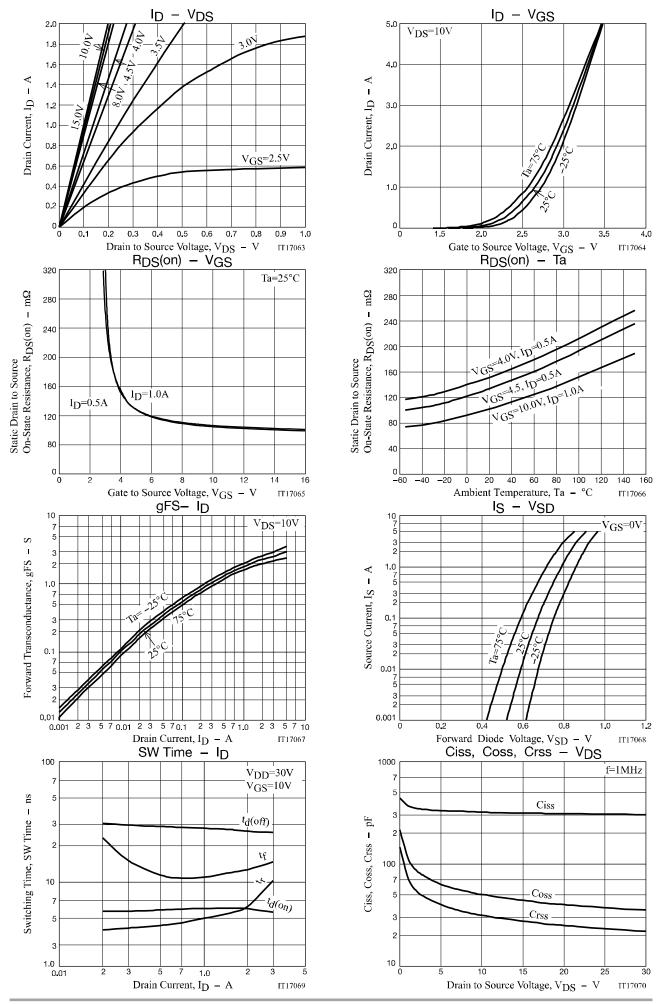
Electrical Characteristics at Ta = 25°C

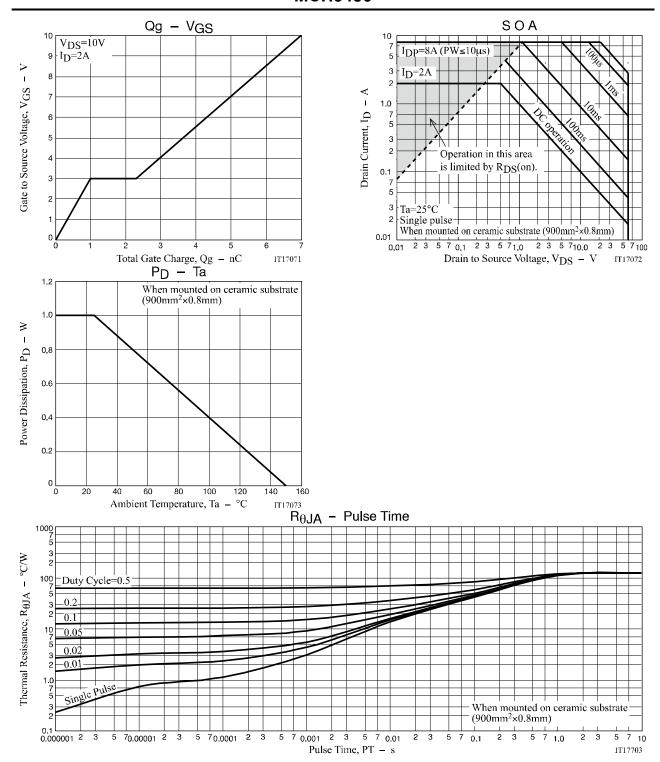
Danamatan	Coursels and	0 - 10		Value		
Parameter	Symbol	Conditions	min	typ	max	Unit
Drain to Source Breakdown Voltage	V(BR)DSS	I _D =1mA, V _{GS} =0V	60			V
Zero-Gate Voltage Drain Current	IDSS	V _{DS} =60V, V _{GS} =0V			1	μΑ
Gate to Source Leakage Current	IGSS	V _{GS} =±16V, V _{DS} =0V			±10	μΑ
Gate Threshold Voltage	VGS(th)	V _{DS} =10V, I _D =1mA	1.2		2.6	V
Forward Transconductance	9FS	V _{DS} =10V, I _D =1A		1.8		S
	R _{DS} (on)1	I _D =1A, V _{GS} =10V		105	137	mΩ
Static Drain to Source On-State Resistance	R _{DS} (on)2	I _D =0.5A, V _{GS} =4.5V		137	192	mΩ
	R _{DS} (on)3	I _D =0.5A, V _{GS} =4V		155	217	mΩ
Input Capacitance	Ciss			310		pF
Output Capacitance	Coss	V _{DS} =20V, f=1MHz		40		pF
Reverse Transfer Capacitance	Crss			25		pF
Turn-ON Delay Time	t _d (on)			6		ns
Rise Time	t _r	See specified Test Circuit		5		ns
Turn-OFF Delay Time	t _d (off)			28		ns
Fall Time	tf			11		ns
Total Gate Charge	Qg			7		nC
Gate to Source Charge	Qgs	V _{DS} =30V, V _{GS} =10V, I _D =2A		1		nC
Gate to Drain "Miller" Charge	Qgd			1.3		nC
Forward Diode Voltage	V _{SD}	I _S =2A, V _{GS} =0V		0.83	1.2	V

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

Switching Time Test Circuit







Package Dimensions

MCH3486-TL-H/ MCH3486-TL-W

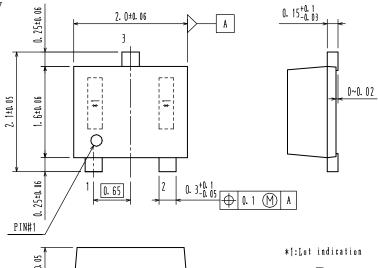
MCPH3

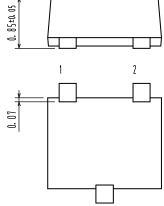
CASE 419AQ ISSUE O

Unit: mm

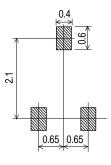
1 : Gate 2 : Source

3: Drain





Recommended Soldering Footprint



Ordering & Package Information

Device	Package	Shipping	Note	
MCH3486-TL-H	MCPH3	3,000 pcs. / reel	Pb-Free and Halogen Free	
MCH3486-TL-W	SC-70,SOT-323	3,000 pcs. / feel		

Note on usage: Since the MCH3486 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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