Ordering number : ENA0368A

6HP04MH

P-Channel Small Single MOSFET
−60V, −370mA, 4.2Ω Single MCPH3

ON Semiconductor®
http://onsemi.com

Features

- 4V drive
- Halogen free compliance
- Protection diode in

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		−370	mA
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	−1480	mA
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (900mm^2×0.8mm)	0.6	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		−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.

Electrical Characteristics at Ta=25°C

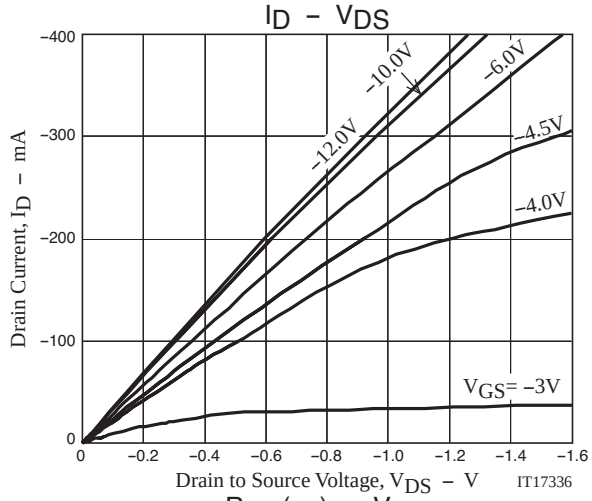
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=−1mA, V_{GS}=0V	−60			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=−60V, V_{GS}=0V			−1	μA
Gate to Source Leakage Current	I_{GSS}	V_{GS}=±16V, V_{DS}=0V			±10	μA
Cutoff Voltage	V_{GS}(off)	V_{DS}=−10V, I_D=−100μA	−1.2		−2.6	V
Forward Transfer Admittance	| yfs |	V_{DS}=−10V, I_D=−190mA		310		mS
Static Drain to Source On-State Resistance	R_{DS}(on)1	I_D=−190mA, V_{GS}=−10V		3.1	4.2	Ω
	R_{DS}(on)2	I_D=−100mA, V_{GS}=−4V		5.1	7.3	Ω
Input Capacitance	Ciss	V_{DS}=−20V, f=1MHz		24.1		pF
Output Capacitance	Coss			8.5		pF
Reverse Transfer Capacitance	Crss			4.1		pF
Turn-ON Delay Time	t_d(on)	See specified Test Circuit.		18.4		ns
Rise Time	t_r			15.2		ns
Turn-OFF Delay Time	t_d(off)			113		ns
Fall Time	t_f			41		ns
Total Gate Charge	Qg	V_{DS}=−30V, V_{GS}=−10V, I_D=−370mA		0.84		nC
Gate to Source Charge	Qgs			0.19		nC
Gate to Drain “Miller” Charge	Qgd			0.21		nC
Diode Forward Voltage	V_{SD}	I_S=−370mA, V_{GS}=0V		−0.92	−1.2	V

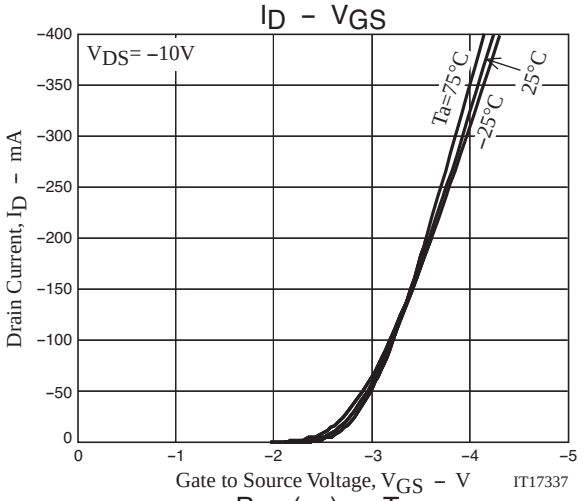
ORDERING INFORMATION

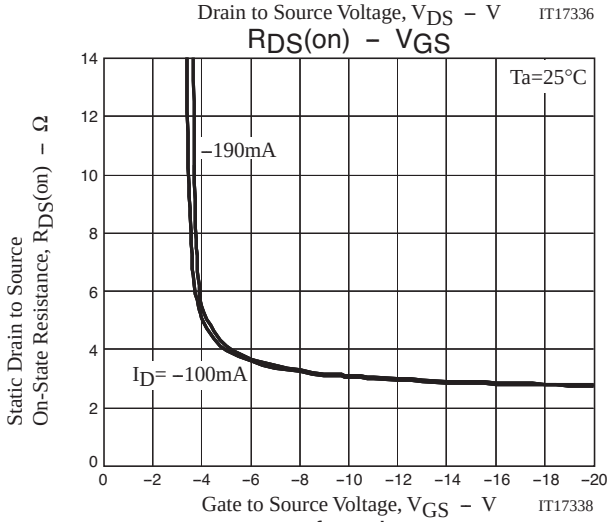
See detailed ordering and shipping information on page 4 of this data sheet.

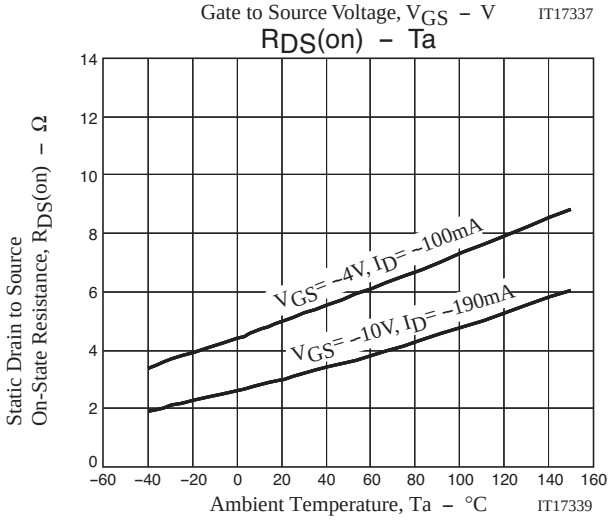
Semiconductor Components Industries, LLC, 2013
December, 2013

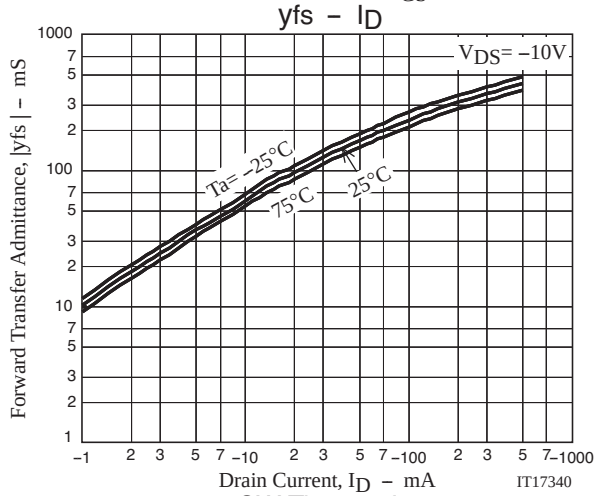
Downloaded from Arrow.com.

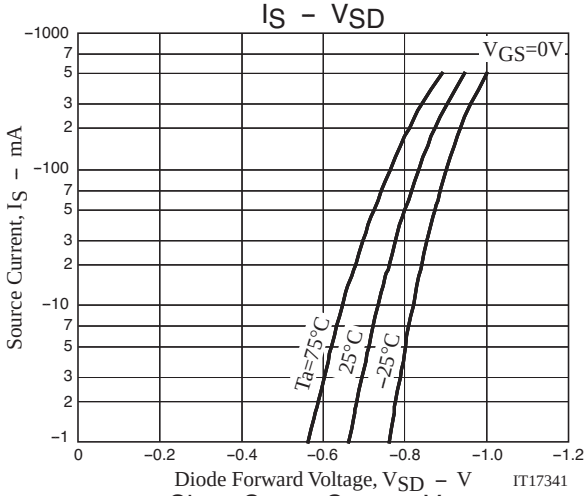


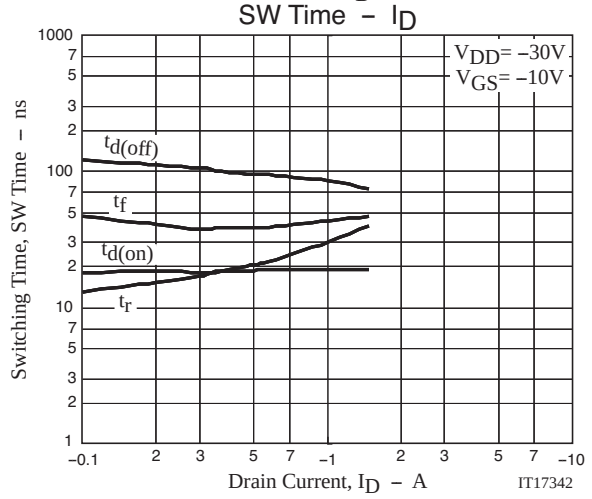


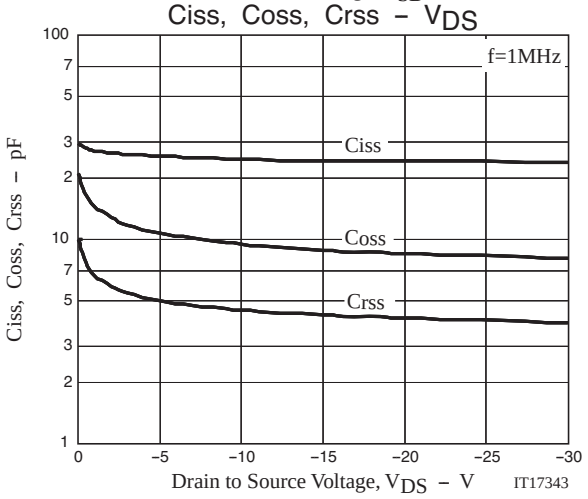




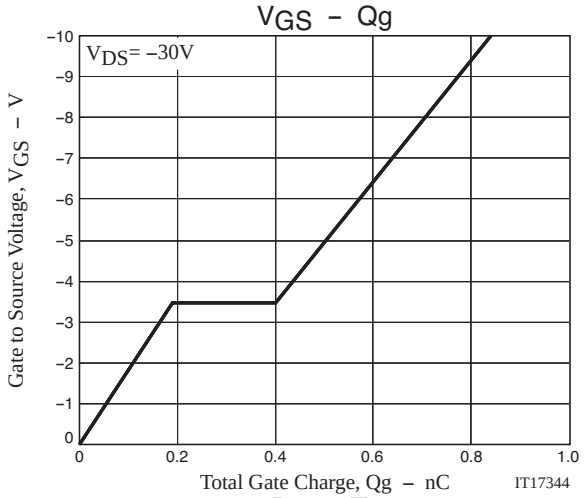


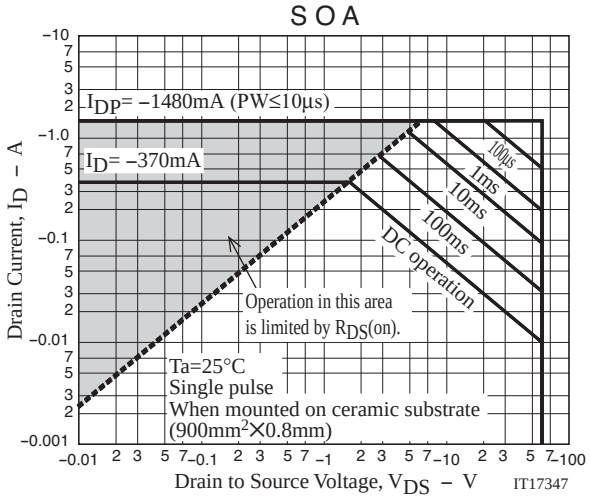


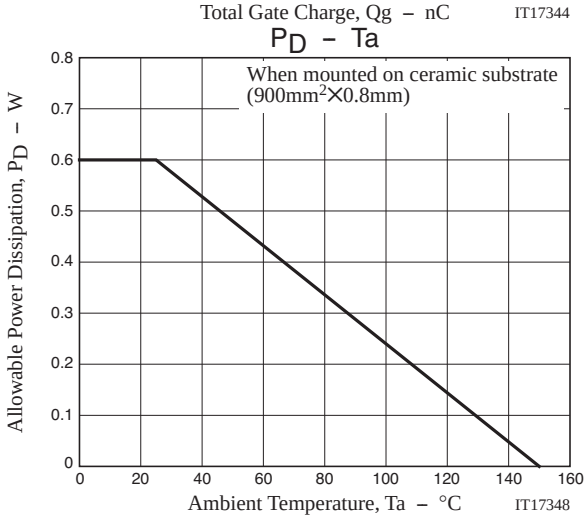




Downloaded from Arrow.com.







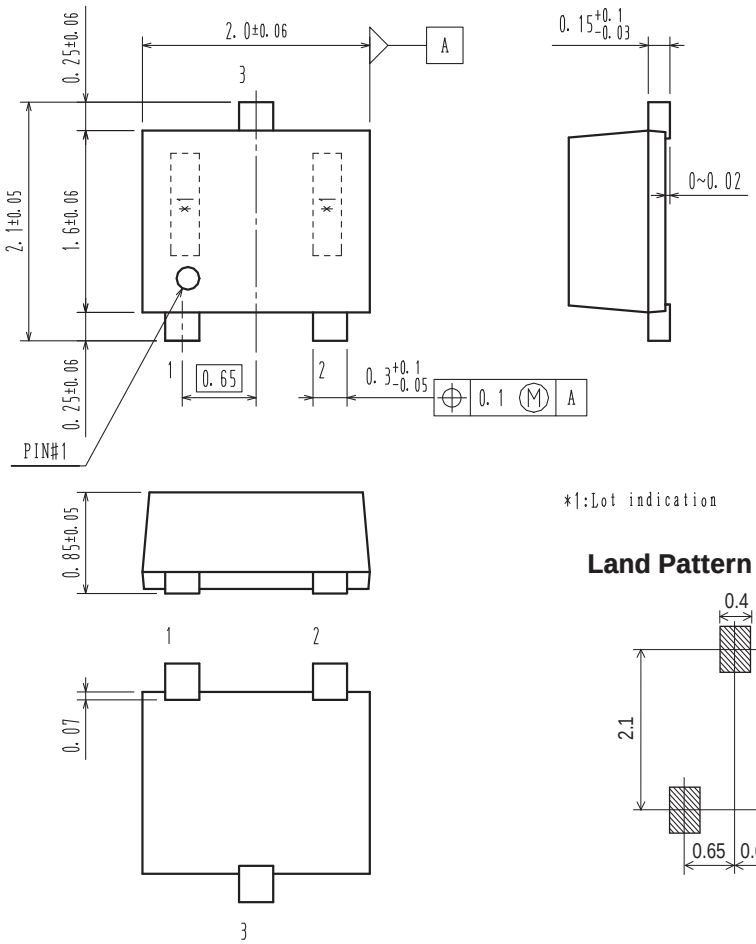
Downloaded from Arrow.com.

Package Dimensions

6HP04MH-TL-W

SC-70FL/MCPH3
CASE 419AQ
ISSUE O
Unit : mm

1: Gate
2: Source
3: Drain

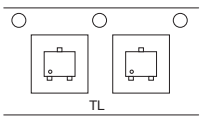


Land Pattern Example

Ordering & Package Information

Device	Package	Shipping	memo
6HP04MH-TL-W	MCPH3 SC-70, SOT-323	3,000 pcs. / reel	Pb-Free and Halogen Free

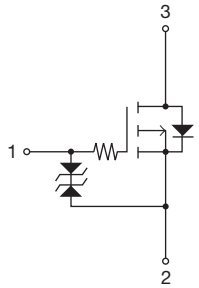
Packing Type:TL



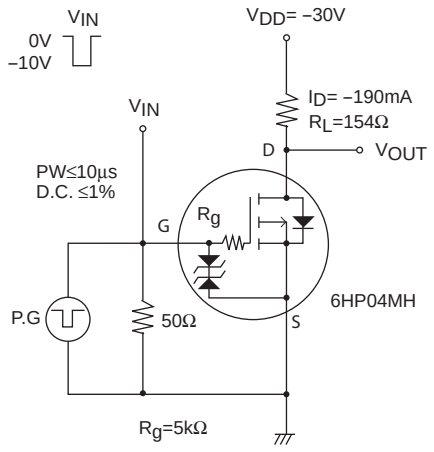
Marking



Electrical Connection



Switching Time Test Circuit



Downloaded from Arrow.com.

Note on usage : Since the 6HP04MH is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

ON Semiconductor and the ON logo are registered trademarks of Semiconductor Components Industries, LLC (SCILLC). SCILLC owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of SCILLC's product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. SCILLC reserves the right to make changes without further notice to any products herein. SCILLC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does SCILLC assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in SCILLC data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. SCILLC does not convey any license under its patent rights nor the rights of others. SCILLC products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the SCILLC product could create a situation where personal injury or death may occur. Should Buyer purchase or use SCILLC products for any such unintended or unauthorized application, Buyer shall indemnify and hold SCILLC and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that SCILLC was negligent regarding the design or manufacture of the part. SCILLC is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

Downloaded from Arrow.com.