

Ordering number : ENA0551

**SANYO****SANYO Semiconductors****DATA SHEET**

# 3LP04MH — P-Channel Silicon MOSFET

## General-Purpose Switching Device Applications

**Features**

- 1.5V drive.

**Specifications****Absolute Maximum Ratings** at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		-30	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±10	V
Drain Current (DC)	I <sub>D</sub>		-200	mA
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-800	mA
Allowable Power Dissipation	P <sub>D</sub>	Mounted on a ceramic board (900mm <sup>2</sup> ×0.8mm)	0.6	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

**Electrical Characteristics** at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	I <sub>D</sub> =-1mA, V <sub>GS</sub> =0V	-30			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-30V, V <sub>GS</sub> =0V			-1	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±8V, V <sub>DS</sub> =0V			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-100μA	-0.4		-1.4	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-100mA	190	320		mS
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =-100mA, V <sub>GS</sub> =-4V		1.8	2.4	Ω
	R <sub>DS(on)2</sub>	I <sub>D</sub> =-50mA, V <sub>GS</sub> =-2.5V		2.4	3.4	Ω
	R <sub>DS(on)3</sub>	I <sub>D</sub> =-10mA, V <sub>GS</sub> =-1.5V		4.5	9.0	Ω
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-10V, f=1MHz		35		pF
Output Capacitance	C <sub>oss</sub>	V <sub>DS</sub> =-10V, f=1MHz		7.2		pF
Reverse Transfer Capacitance	C <sub>rss</sub>	V <sub>DS</sub> =-10V, f=1MHz		2.1		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See specified Test Circuit.		75		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit.		170		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>	See specified Test Circuit.		550		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit.		350		ns

Marking : QD

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3LP04MH

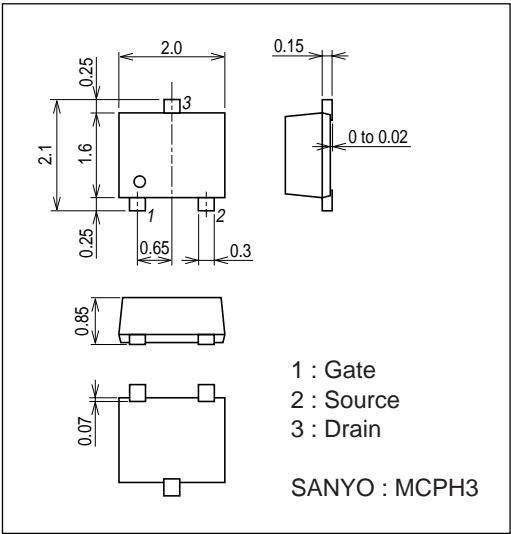
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Qg	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-4V, I <sub>D</sub> =-200mA		0.58		nC
Gate-to-Source Charge	Qgs	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-4V, I <sub>D</sub> =-200mA		0.17		nC
Gate-to-Drain "Miller" Charge	Qgd	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-4V, I <sub>D</sub> =-200mA		0.12		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-200mA, V <sub>GS</sub> =0V		-0.89	-1.2	V

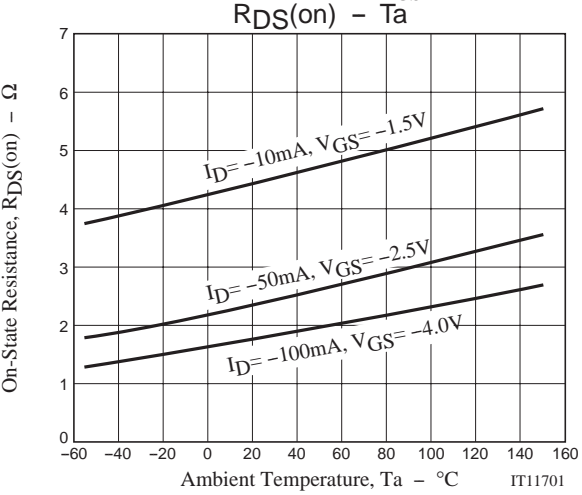
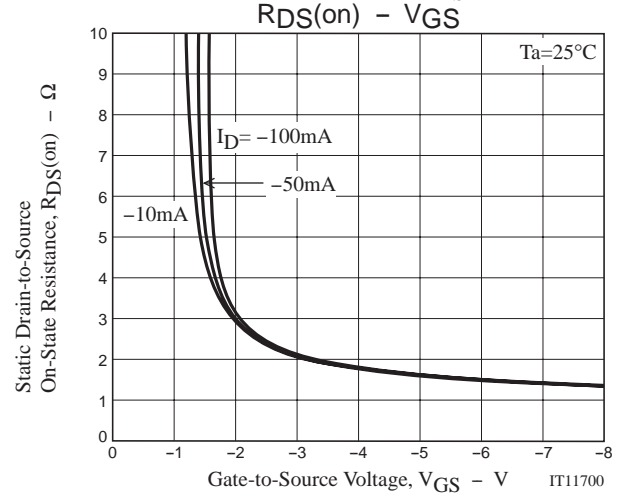
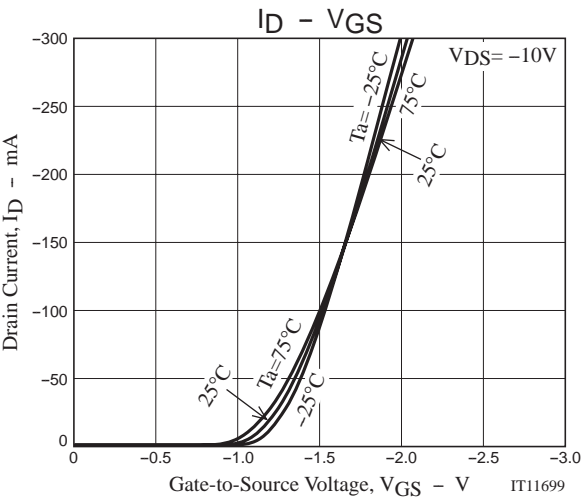
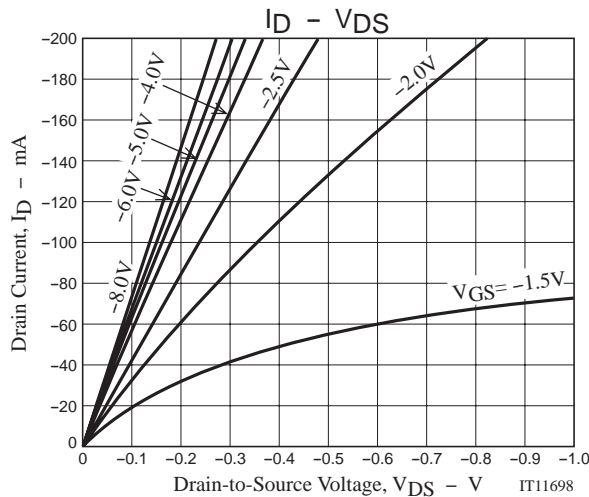
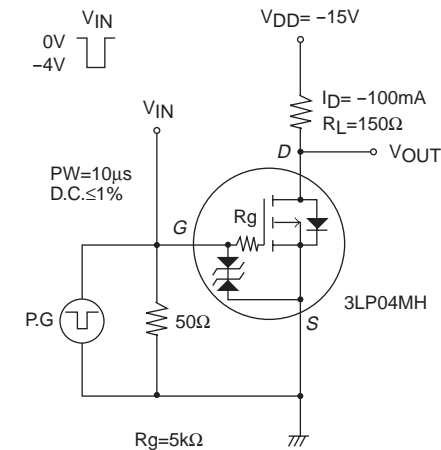
Package Dimensions

unit : mm (typ)

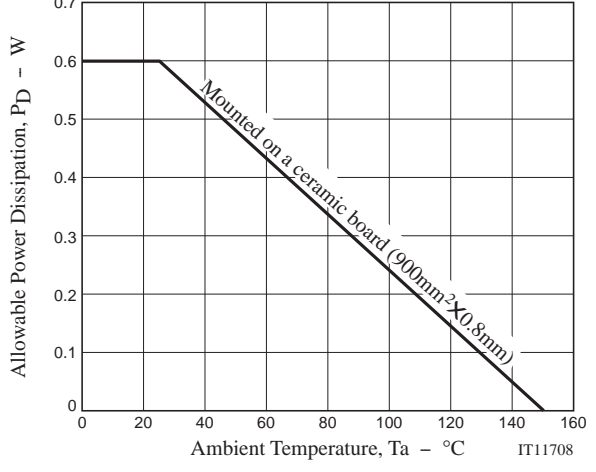
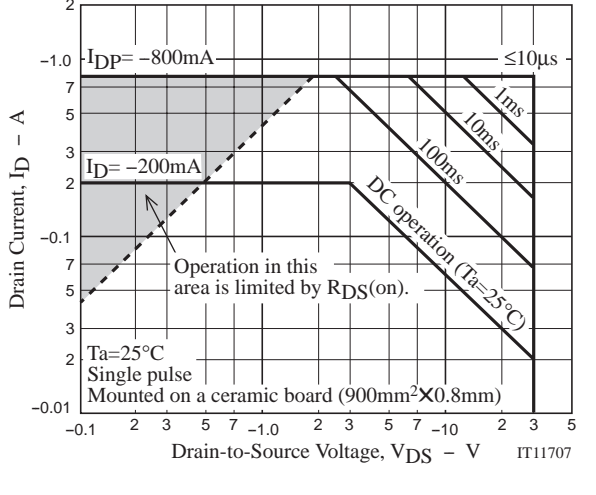
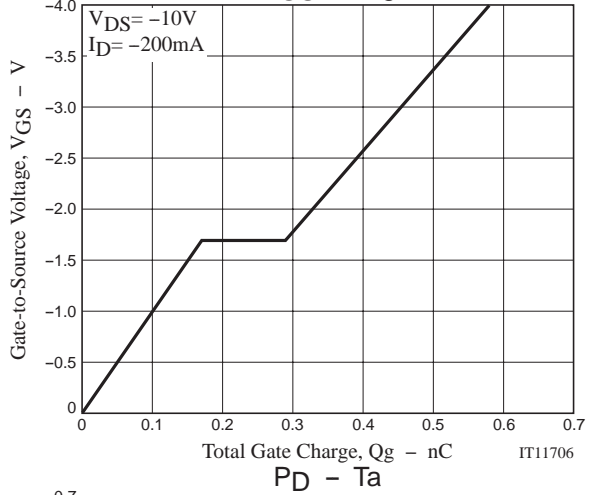
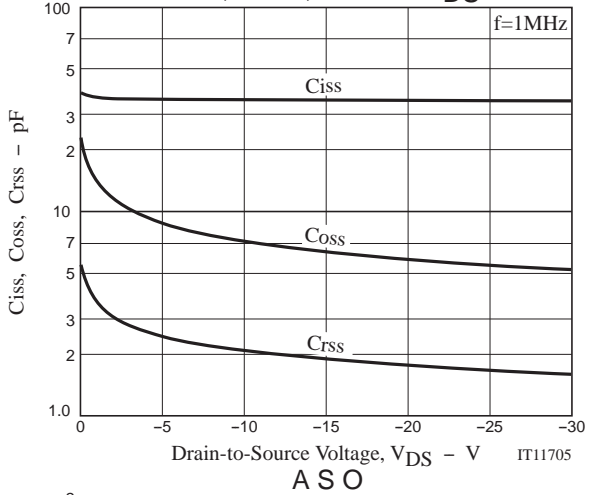
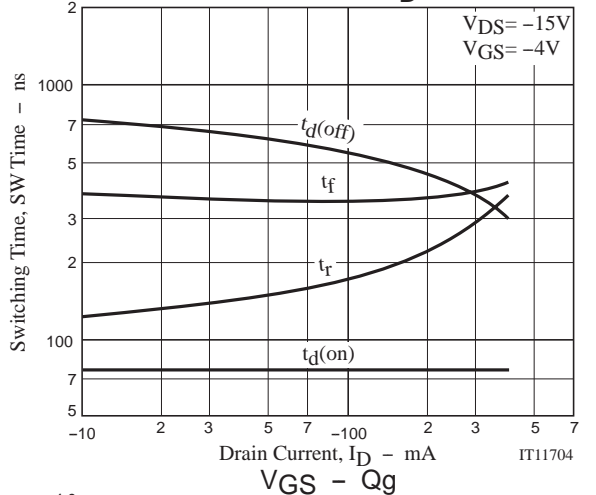
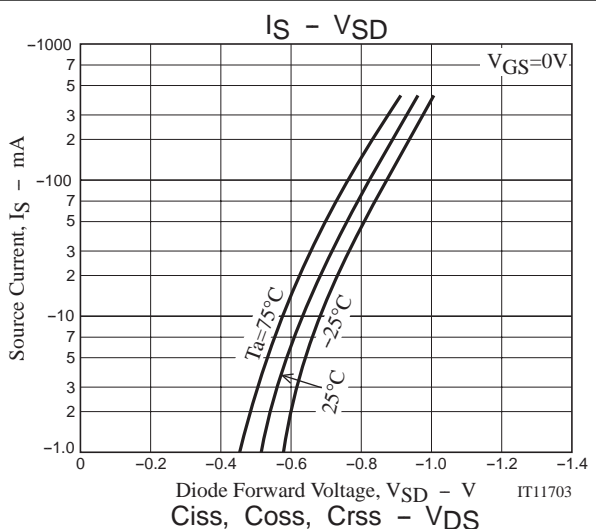
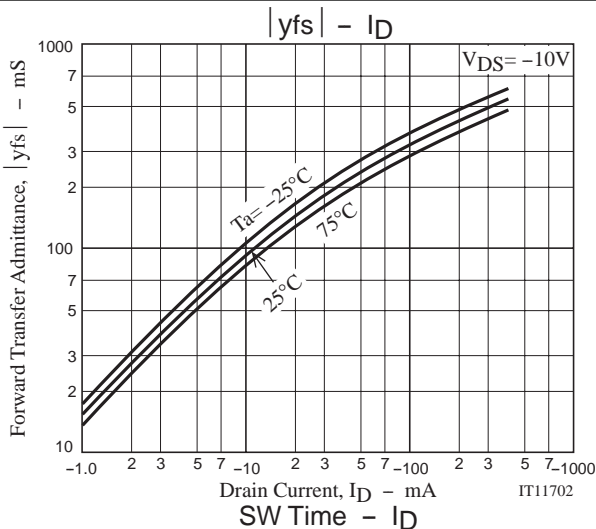
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Switching Time Test Circuit



3LP04MH



## 3LP04MH

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Note on usage : Since the 3LP04MH is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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