Ordering number : ENA0458

SANYO Semiconductors
DATA SHEET

N-Channel Silicon MOSFET

6LN04MH — 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_{DSS}		60	V
Gate-to-Source Voltage	V_{GSS}		±10	V
Drain Current (DC)	I_D		200	mA
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	800	mA
Allowable Power Dissipation	P_D	Mounted on a ceramic board (900mm²×0.8mm)	0.6	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-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	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}=±8V, V_{DS}=0V			±10	μA
Cutoff Voltage	V_{GS}(off)	V_{DS}=10V, I_D=100μA	0.4		1.3	V
Forward Transfer Admittance	|yfs|	V_{DS}=10V, I_D=100mA	280	480		mS
Static Drain-to-Source On-State Resistance	R_{DS}(on)1	I_D=100mA, V_{GS}=4V		2.2	2.9	Ω
	R_{DS}(on)2	I_D=50mA, V_{GS}=2.5V		2.4	3.4	Ω
	R_{DS}(on)3	I_D=10mA, V_{GS}=1.5V		3.5	7.0	Ω
Input Capacitance	Ciss	V_{DS}=20V, f=1MHz		26		pF
Output Capacitance	Coss	V_{DS}=20V, f=1MHz		5.9		pF
Reverse Transfer Capacitance	Crss	V_{DS}=20V, f=1MHz		3.2		pF
Turn-ON Delay Time	t_{d}(on)	See specified Test Circuit.		18.5		ns
Rise Time	t_r	See specified Test Circuit.		26		ns
Turn-OFF Delay Time	t_{d}(off)	See specified Test Circuit.		146		ns
Fall Time	t_f	See specified Test Circuit.		69		ns

Marking : FA

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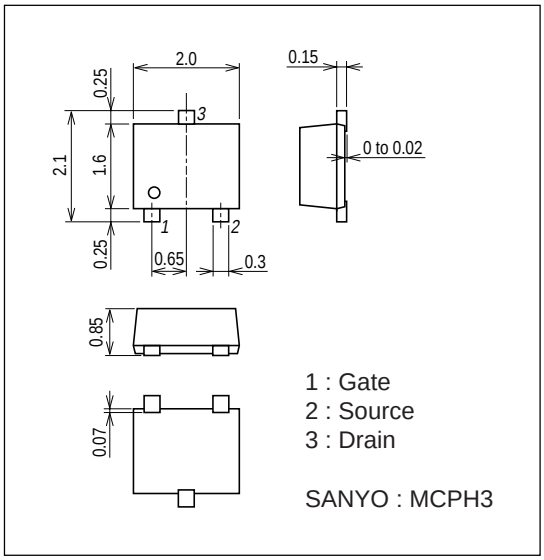
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Qg	V_{DS}=30V, V_{GS}=4V, I_D=200mA		1.0		nC
Gate-to-Source Charge	Qgs	V_{DS}=30V, V_{GS}=4V, I_D=200mA		0.2		nC
Gate-to-Drain “Miller” Charge	Qgd	V_{DS}=30V, V_{GS}=4V, I_D=200mA		0.2		nC
Diode Forward Voltage	V_{SD}	I_S=200mA, V_{GS}=0V		0.83	1.2	V

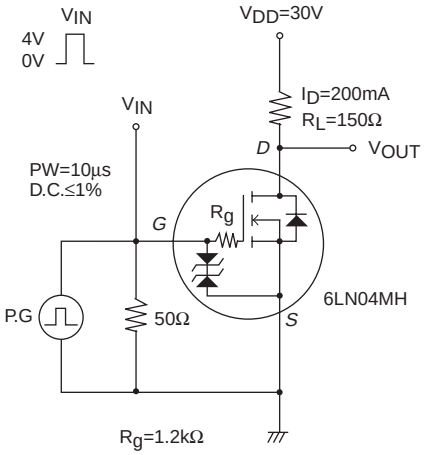
Package Dimensions

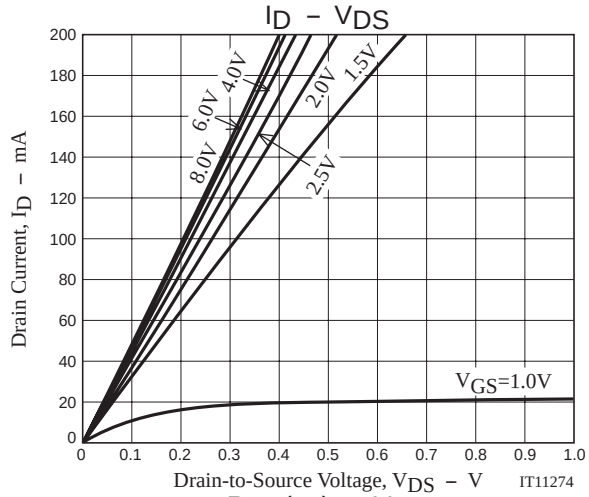
unit : mm (typ)

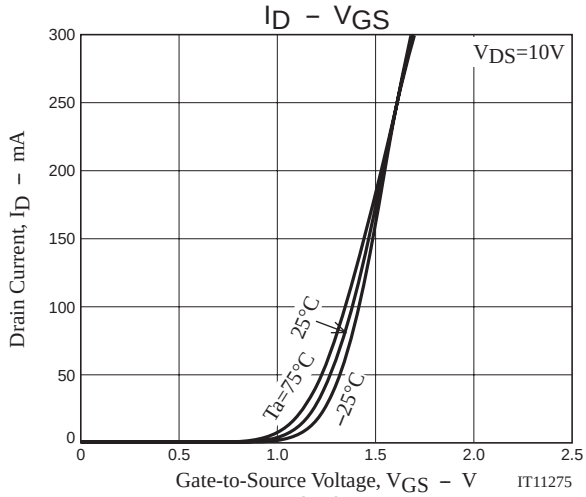
7019A-003

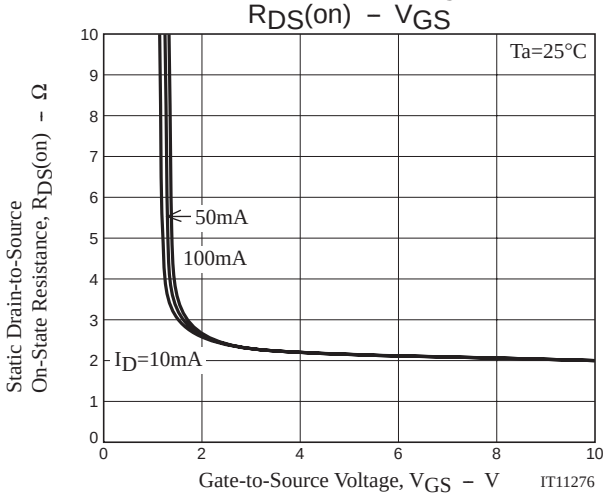


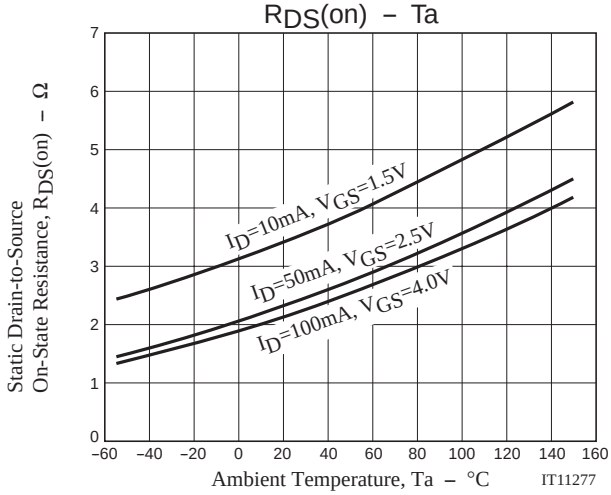
Switching Time Test Circuit

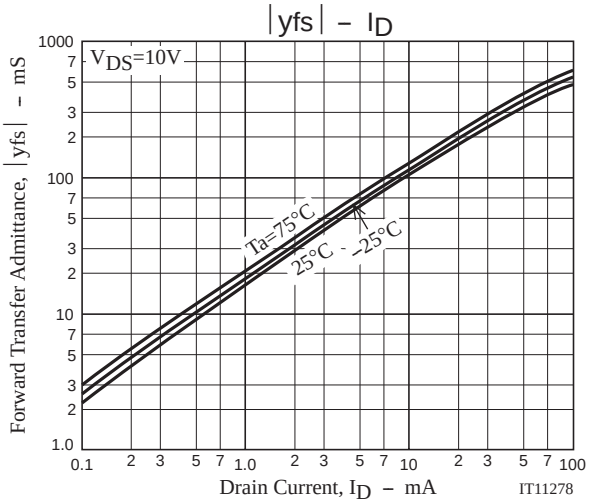


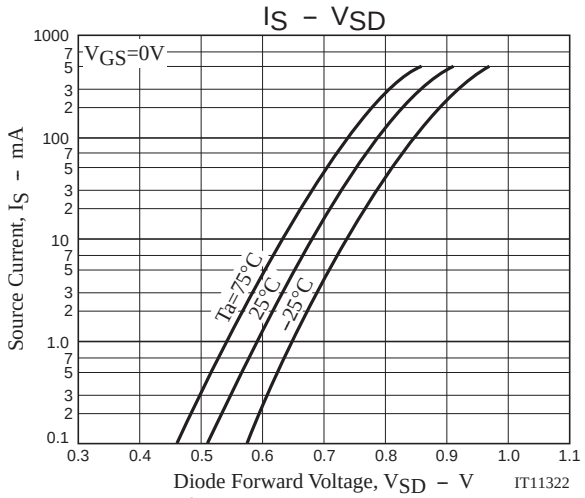


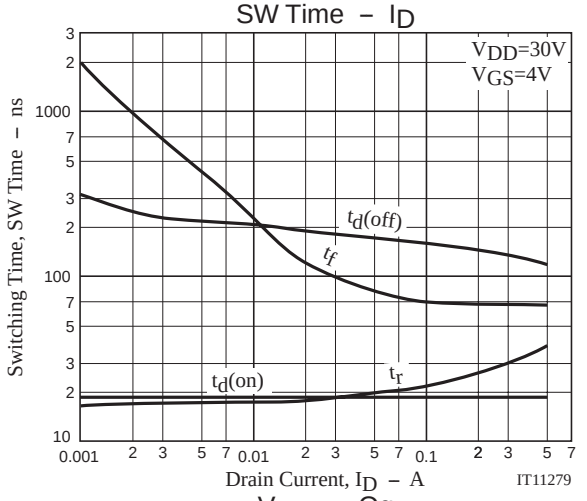


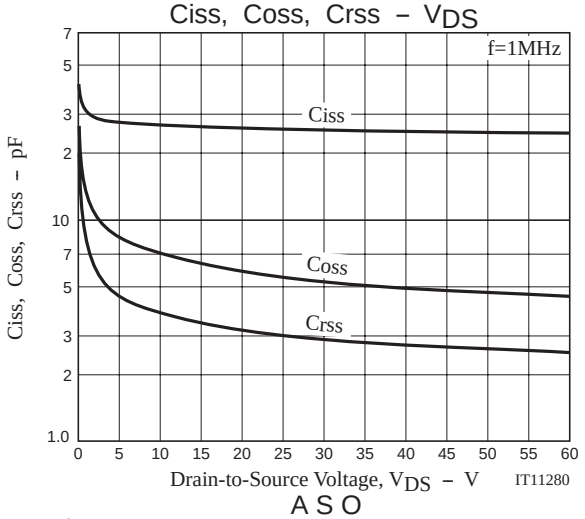


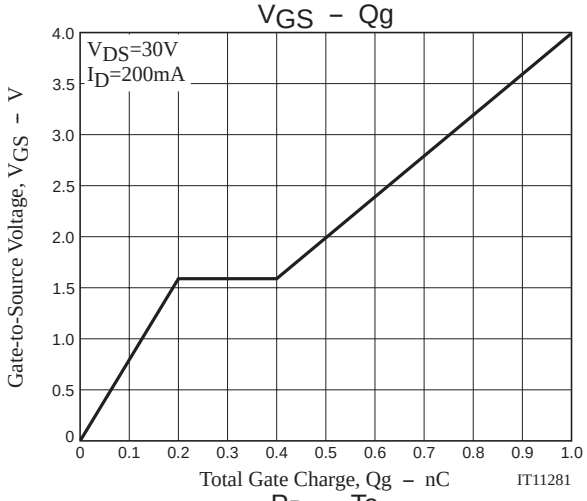


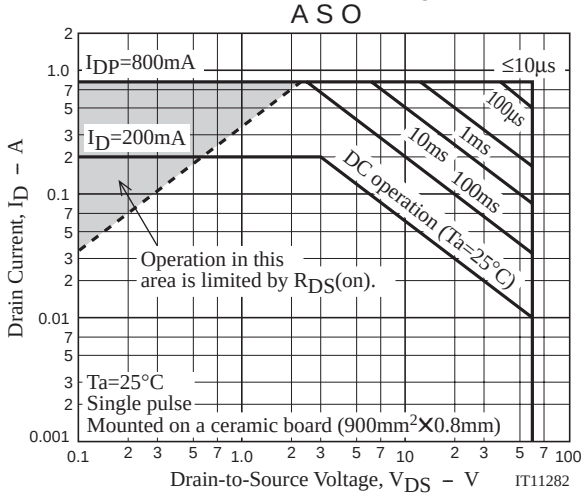

|yfs| – ID
VDS=10V
Ta=75°C
25°C
–25°C
Forward Transfer Admittance, |yfs| – mS
Drain Current, ID – mA
IT11278

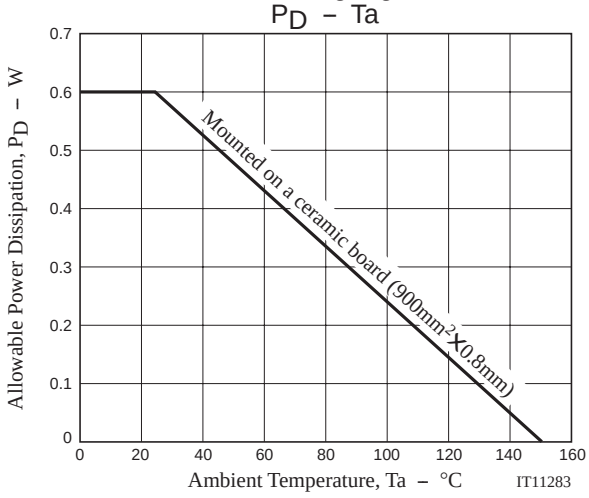

IS – VSD
VGS=0V
Ta=75°C
25°C
–25°C
Source Current, IS – mA
Diode Forward Voltage, VSD – V
IT11322


SW Time – ID
VDD=30V
VGS=4V
td(off)
tf
td(on)
tr
Switching Time, SW Time – ns
Drain Current, ID – A
IT11279


Ciss, Coss, Crss – VDS
f=1MHz
Ciss
Coss
Crss
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT11280


VGS – Qg
VDS=30V
ID=200mA
Gate-to-Source Voltage, VGS – V
Total Gate Charge, Qg – nC
IT11281


A S O
IDP=800mA
≤10μs
ID=200mA
100μs
1ms
10ms
100ms
DC operation (Ta=25°C)
Operation in this
area is limited by RDS(on).
Ta=25°C
Single pulse
Mounted on a ceramic board (900mm2×0.8mm)
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
IT11282


PD – Ta
Mounted on a ceramic board (900mm2×0.8mm)
Allowable Power Dissipation, PD – W
Ambient Temperature, Ta – °C
IT11283

Note on usage : Since the 6LN04MH is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

This catalog provides information as of July, 2006. Specifications and information herein are subject to change without notice.