Ordering number : ENA1234

SANYO Semiconductors
DATA SHEET

P-Channel Silicon MOSFET

6LP04CH — 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		−100	mA
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	−400	mA
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (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		−1.4	V
Forward Transfer Admittance	$\|yfs\|$	V_{DS}=−10V, I_D=−50mA	130	220		mS
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	I_D=−50mA, V_{GS}=−4V		6.5	8.5	Ω
	$R_{DS(on)2}$	I_D=−30mA, V_{GS}=−2.5V		7.4	11	Ω
	$R_{DS(on)3}$	I_D=−10mA, V_{GS}=−1.5V		10	20	Ω
Input Capacitance	Ciss	V_{DS}=−20V, f=1MHz		15		pF
Output Capacitance	Coss	V_{DS}=−20V, f=1MHz		3.5		pF
Reverse Transfer Capacitance	Crss	V_{DS}=−20V, f=1MHz		1.0		pF

Marking : YW

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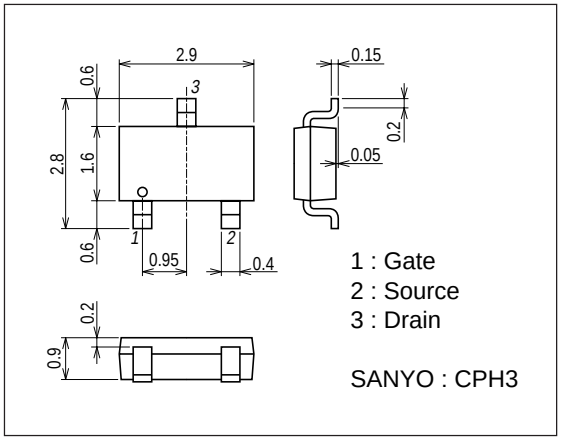
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		75		ns
Rise Time	t_r	See specified Test Circuit.		116		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		665		ns
Fall Time	t_f	See specified Test Circuit.		270		ns
Total Gate Charge	Qg	V_{DS}=–30V, V_{GS}=–4V, I_D=–100mA		0.58		nC
Gate-to-Source Charge	Qgs	V_{DS}=–30V, V_{GS}=–4V, I_D=–100mA		0.14		nC
Gate-to-Drain “Miller” Charge	Qgd	V_{DS}=–30V, V_{GS}=–4V, I_D=–100mA		0.03		nC
Diode Forward Voltage	V_{SD}	I_S=–100mA, V_{GS}=0V		–0.91	–1.5	V

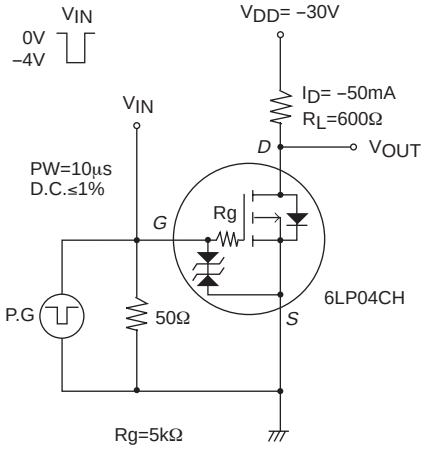
Package Dimensions

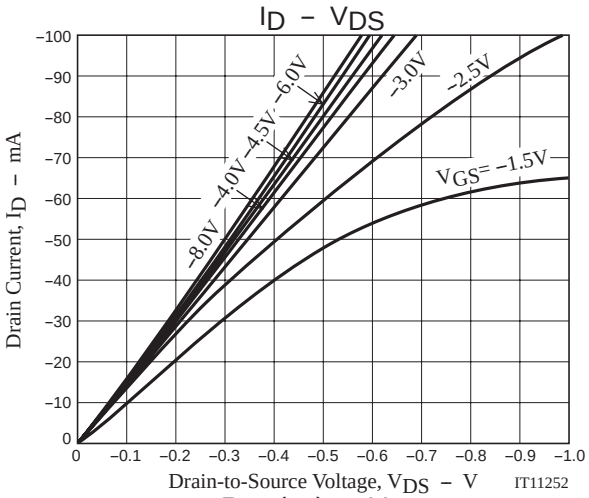
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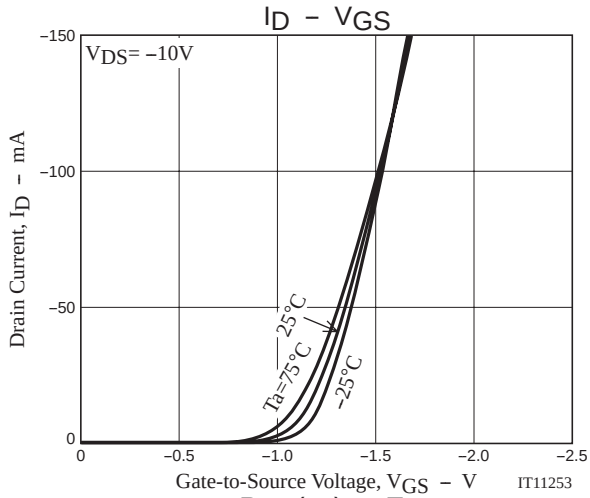
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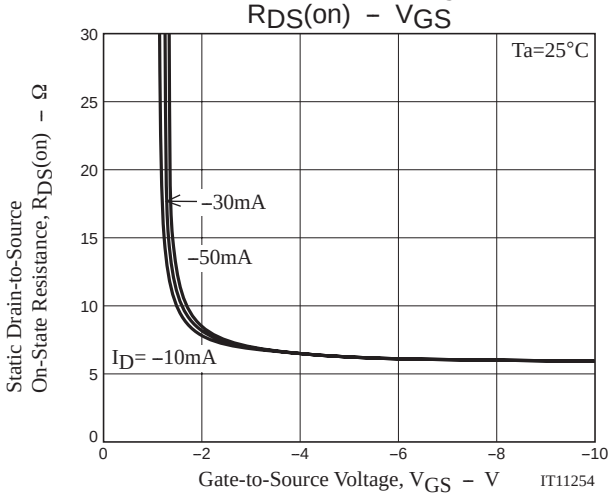


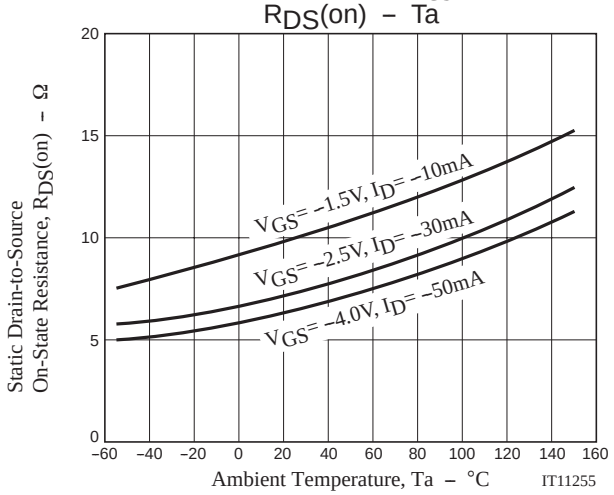
Switching Time Test Circuit

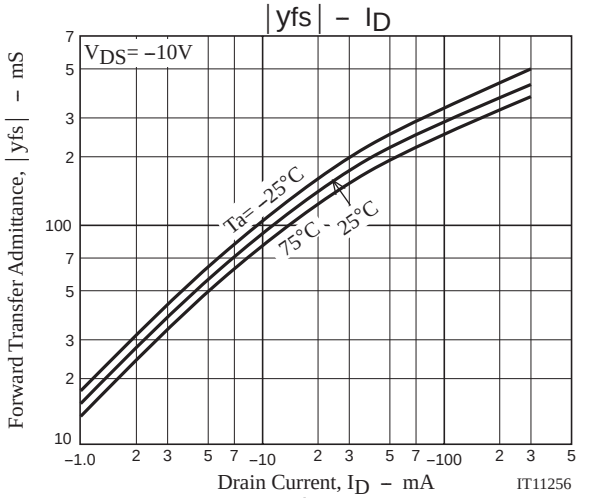


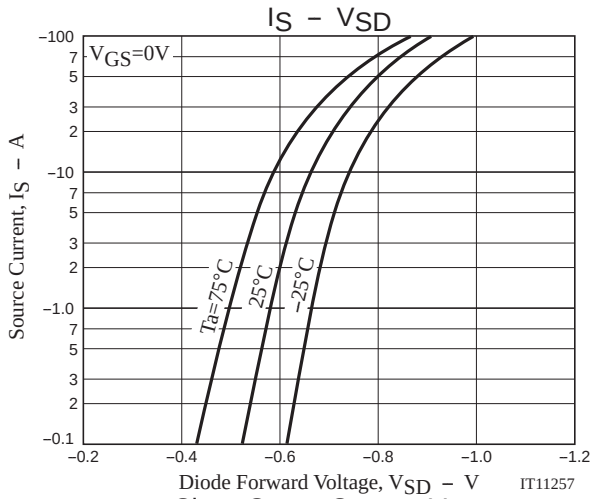


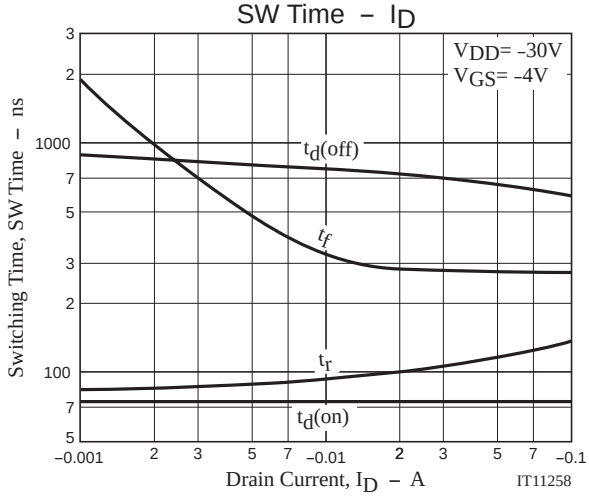


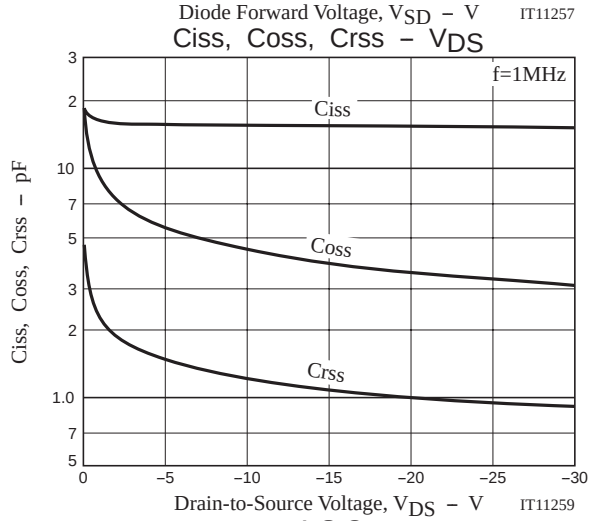


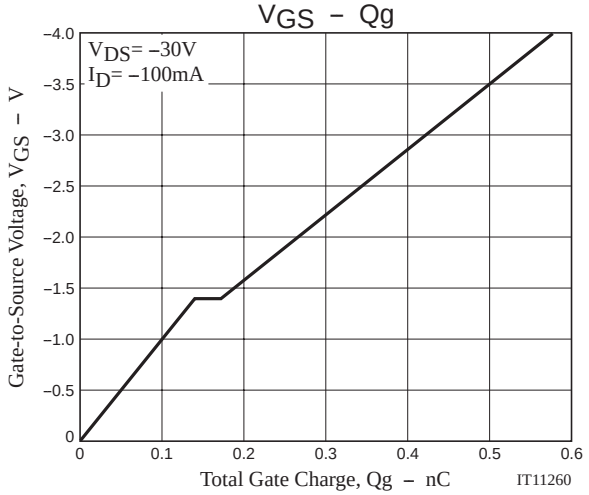


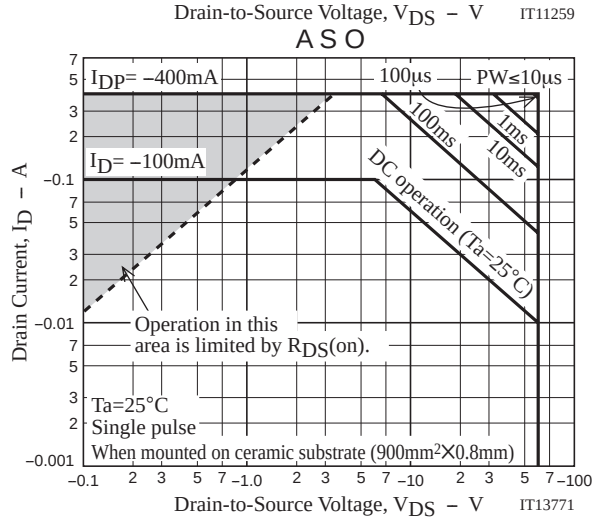

|yfs| – ID
VDS= –10V
Ta= –25°C
75°C
25°C
Forward Transfer Admittance, |yfs| – mS
Drain Current, ID – mA
IT11256

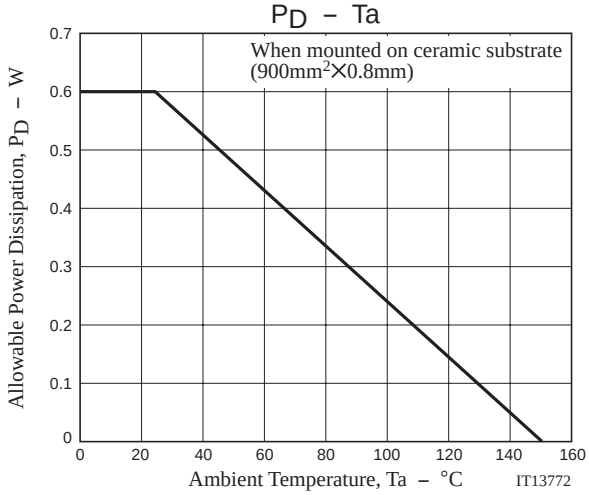

IS – VSD
VGS=0V
Ta=75°C
25°C
–25°C
Source Current, IS – A
Diode Forward Voltage, VSD – V
IT11257


SW Time – ID
VDD= –30V
VGS= –4V
td(off)
tf
tr
td(on)
Switching Time, SW Time – ns
Drain Current, ID – A
IT11258


Ciss, Coss, Crss – VDS
f=1MHz
Ciss
Coss
Crss
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT11259


VGS – Qg
VDS= –30V
ID= –100mA
Gate-to-Source Voltage, VGS – V
Total Gate Charge, Qg – nC
IT11260


ASO
IDP= –400mA
100µs
PW≤10µs
1ms
10ms
100ms
ID= –100mA
DC operation (Ta=25°C)
Operation in this
area is limited by RDS(on).
Ta=25°C
Single pulse
When mounted on ceramic substrate (900mm2×0.8mm)
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
IT13771


PD – Ta
When mounted on ceramic substrate
(900mm2×0.8mm)
Allowable Power Dissipation, PD – W
Ambient Temperature, Ta – °C
IT13772

Note on usage : Since the 6LP04CH is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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