

## SANYO Semiconductors DATA SHEET

N-Channel Silicon MOSFET

# **6LN04SS** — General-Purpose Switching Device **Applications**

#### **Features**

- · 1.5V drive.
- · Halogen Free compliance.

#### **Specifications**

#### Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	VDSS		60	V
Gate-to-Source Voltage	VGSS		±10	V
Drain Current (DC)	ID		200	mA
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	800	mA
Allowable Power Dissipation	PD	When mounted on glass epoxy substrate (145mm×80mm×1.6mm)	0.15	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C

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

Parameter	Symbol	Conditions	Ratings			11.2
			min	typ	max	Unit
Drain-to-Source Breakdown Voltage	V(BR)DSS	I <sub>D</sub> =1mA, V <sub>GS</sub> =0V	60			V
Zero-Gate Voltage Drain Current	IDSS	V <sub>DS</sub> =60V, V <sub>GS</sub> =0V			1	μА
Gate-to-Source Leakage Current	IGSS	VGS=±8V, VDS=0V			±10	μΑ
Cutoff Voltage	VGS(off)	V <sub>DS</sub> =10V, I <sub>D</sub> =100μA	0.4		1.3	V
Forward Transfer Admittance	yfs	V <sub>DS</sub> =10V, I <sub>D</sub> =100mA	280	480		mS
Static Drain-to-Source On-State Resistance	RDS(on)1	ID=100mA, VGS=4V		2.2	2.9	Ω
	R <sub>DS</sub> (on)2	ID=50mA, VGS=2.5V		2.4	3.4	Ω
	R <sub>DS</sub> (on)3	ID=10mA, VGS=1.5V		3.5	7.0	Ω
Input Capacitance	Ciss	V <sub>DS</sub> =20V, f=1MHz		26		pF
Output Capacitance	Coss	V <sub>DS</sub> =20V, f=1MHz		5.9		pF
Reverse Transfer Capacitance	Crss	V <sub>DS</sub> =20V, f=1MHz		3.2		pF

Marking: YS Continued on next page.

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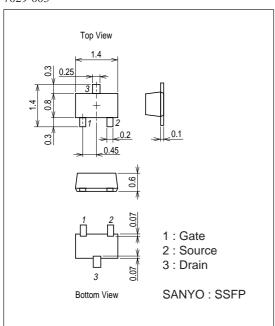
#### **6LN04SS**

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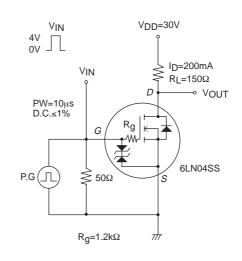
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	Offic
Turn-ON Delay Time	t <sub>d</sub> (on)	See specified Test Circuit.		18.5		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit.		26		ns
Turn-OFF Delay Time	t <sub>d</sub> (off)	See specified Test Circuit.		146		ns
Fall Time	tf	See specified Test Circuit.		69		ns
Total Gate Charge	Qg	V <sub>DS</sub> =30V, V <sub>GS</sub> =4V, I <sub>D</sub> =200mA		1.0		nC
Gate-to-Source Charge	Qgs	V <sub>DS</sub> =30V, V <sub>GS</sub> =4V, I <sub>D</sub> =200mA		0.2		nC
Gate-to-Drain "Miller" Charge	Qgd	V <sub>DS</sub> =30V, V <sub>GS</sub> =4V, I <sub>D</sub> =200mA		0.2		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =200mA, V <sub>GS</sub> =0V		0.83	1.2	V

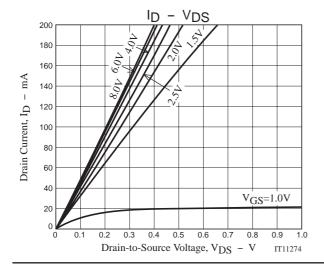
#### **Package Dimensions**

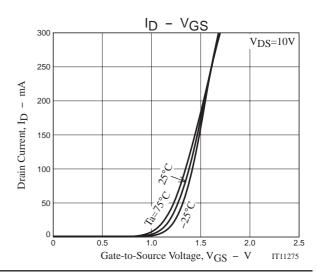
unit : mm (typ) 7029-003

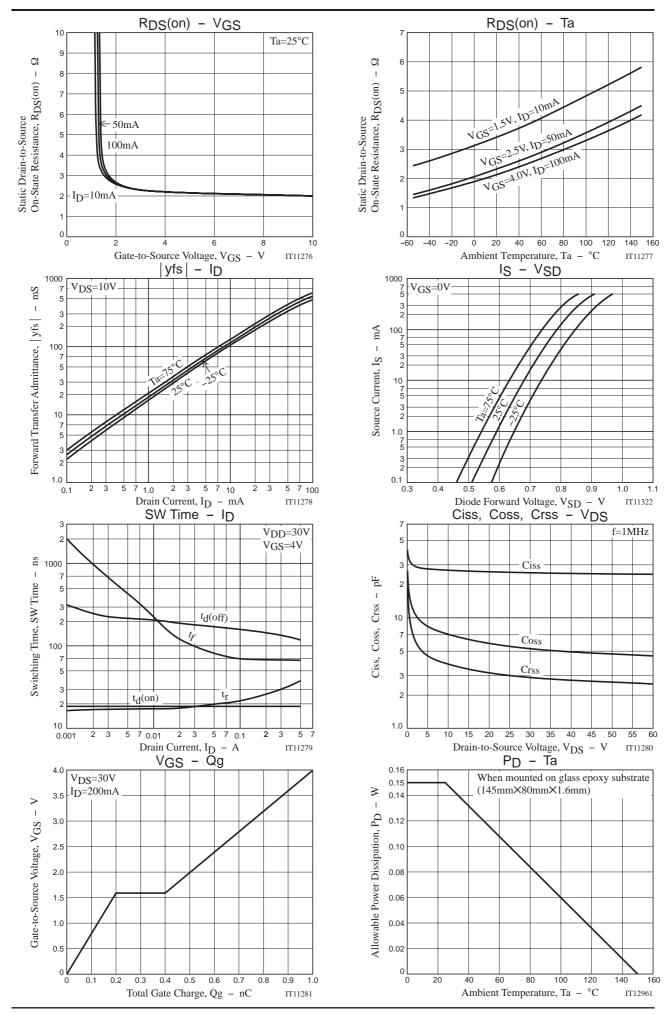


### **Switching Time Test Circuit**









Note on usage : Since the 6LN04SS is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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