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Ordering number : ENA1196

SANYO Semiconductors
DATA SHEET

N-Channel Silicon MOSFET

3LN04SS — 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	V_{DSS}		30	V
Gate-to-Source Voltage	V_{GSS}		±10	V
Drain Current (DC)	I_D		0.35	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	1.4	A
Allowable Power Dissipation	P_D	When mounted on glass epoxy substrate (145mmX80mmX1.6mm)	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			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=1mA, V_{GS}=0V	30			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V, 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=200mA	360	600		mS
Static Drain-to-Source On-State Resistance	$R_{DS}(on)1$	I_D=200mA, V_{GS}=4V		0.75	1.0	Ω
	$R_{DS}(on)2$	I_D=100mA, V_{GS}=2.5V		0.9	1.3	Ω
	$R_{DS}(on)3$	I_D=10mA, V_{GS}=1.5V		1.8	3.6	Ω
Input Capacitance	Ciss	V_{DS}=10V, f=1MHz		28		pF
Output Capacitance	Coss	V_{DS}=10V, f=1MHz		6.0		pF
Reverse Transfer Capacitance	Crss	V_{DS}=10V, f=1MHz		3.1		pF

Marking : YW

Continued on next page.

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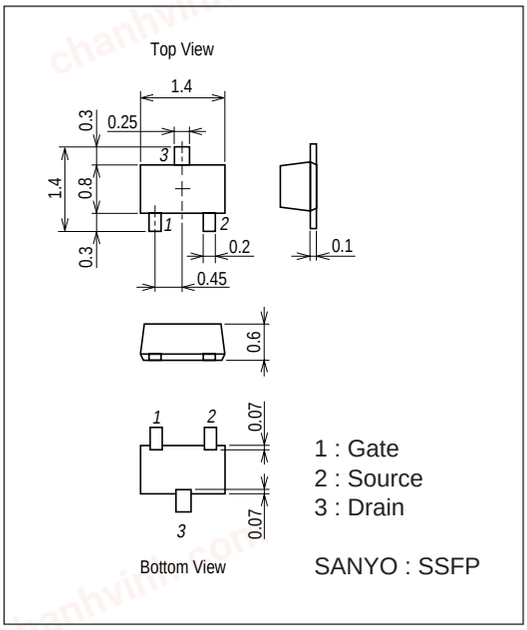
Continued from preceding page.

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	t_{d}(on)	See specified Test Circuit.		17.5		ns
Rise Time	t_{r}	See specified Test Circuit.		34.2		ns
Turn-OFF Delay Time	t_{d}(off)	See specified Test Circuit.		104		ns
Fall Time	t_{f}	See specified Test Circuit.		55.5		ns
Total Gate Charge	Qg	V_{DS}=10V, V_{GS}=4V, I_{D}=350mA		0.87		nC
Gate-to-Source Charge	Qgs	V_{DS}=10V, V_{GS}=4V, I_{D}=350mA		0.39		nC
Gate-to-Drain “Miller” Charge	Qgd	V_{DS}=10V, V_{GS}=4V, I_{D}=350mA		0.14		nC
Diode Forward Voltage	V_{SD}	I_{S}=350mA, V_{GS}=0V		0.86	1.2	V

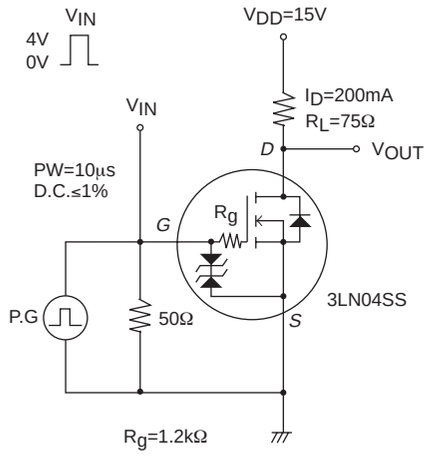
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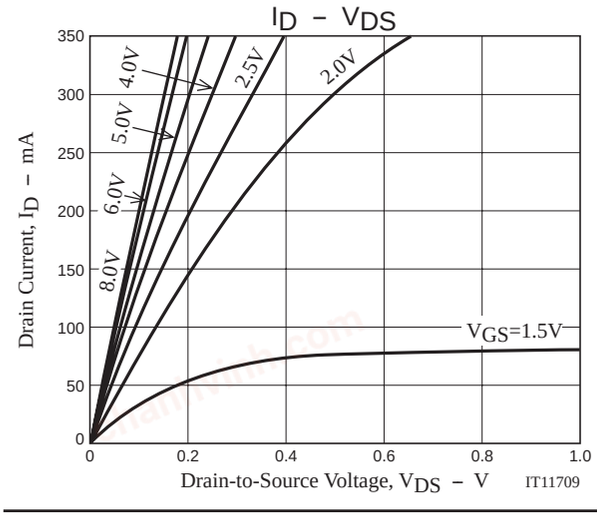
unit : mm (typ)

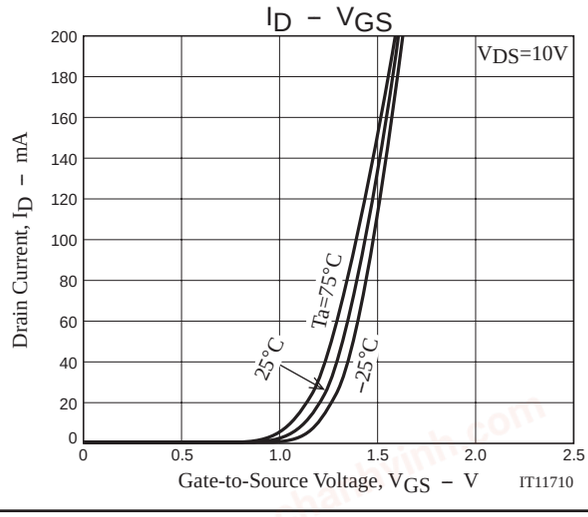
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Switching Time Test Circuit

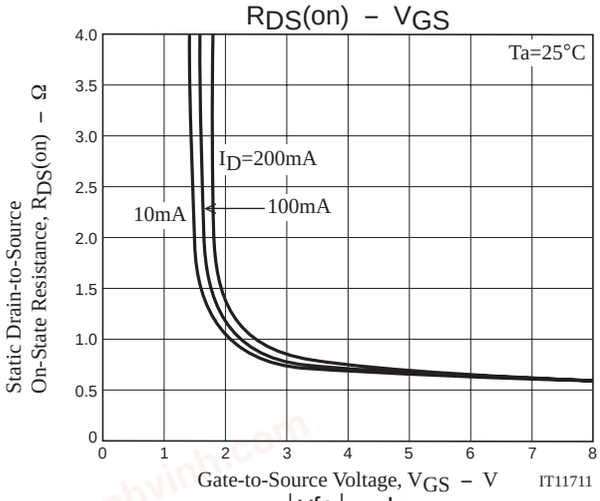




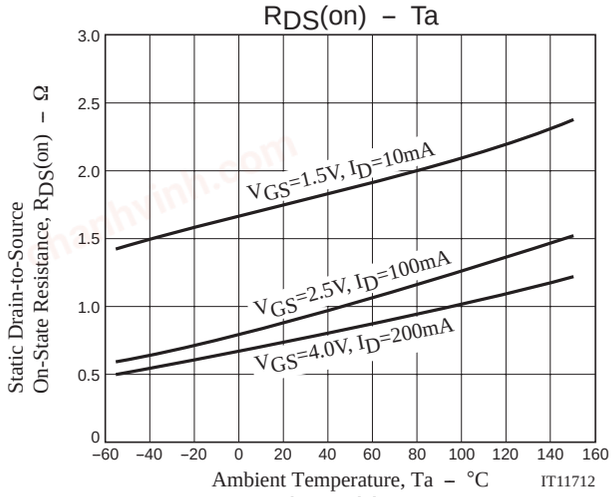


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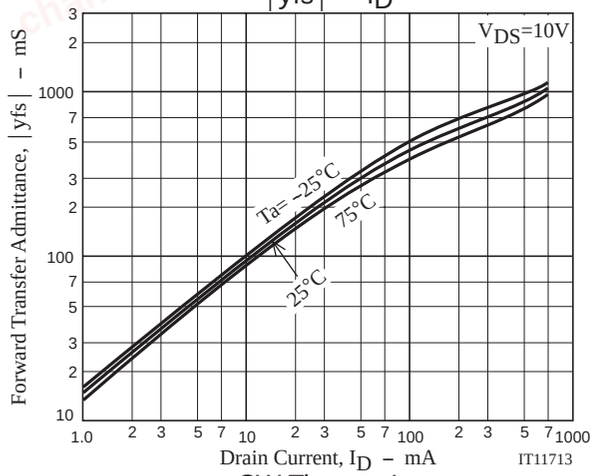
$R_{DS(on)}$ – V_{GS}



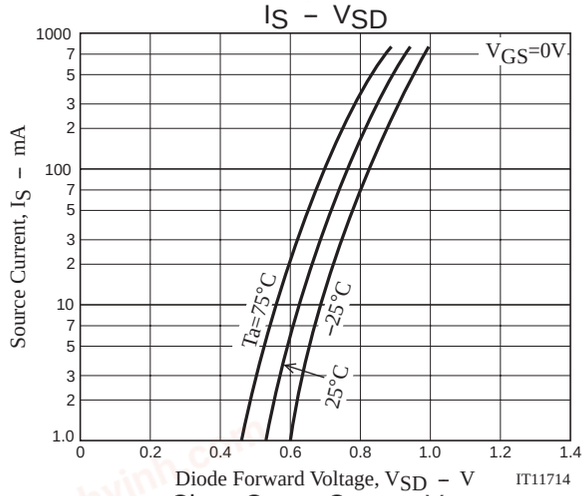
$R_{DS(on)}$ – Ta



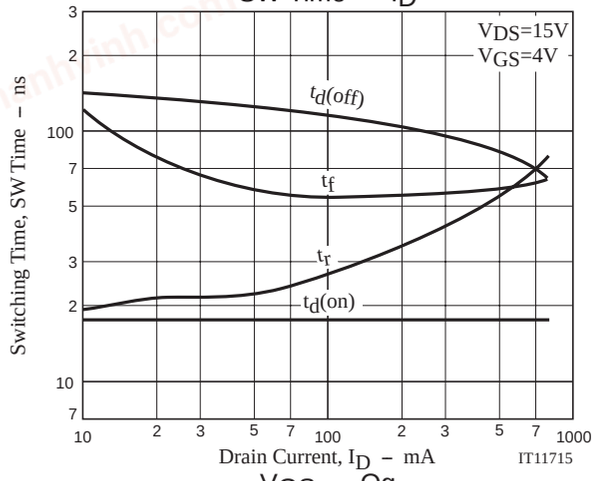
$|y_{fs}|$ – I_D



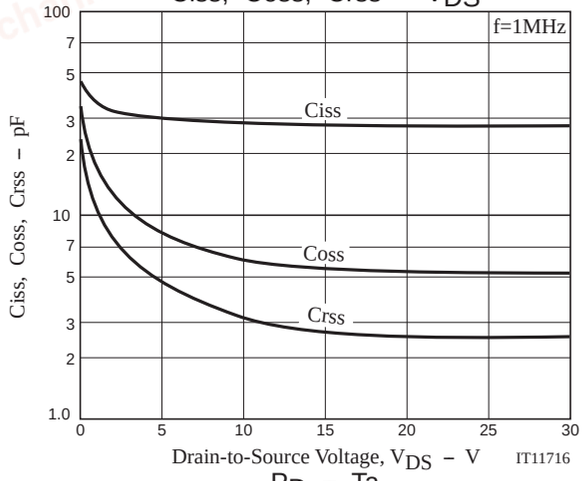
I_S – V_{SD}



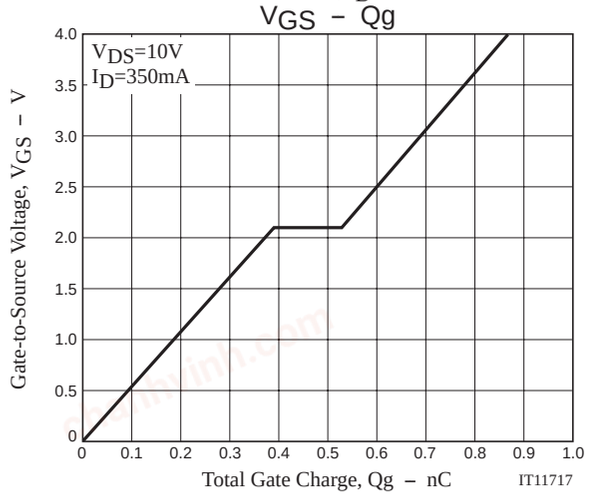
SW Time – I_D



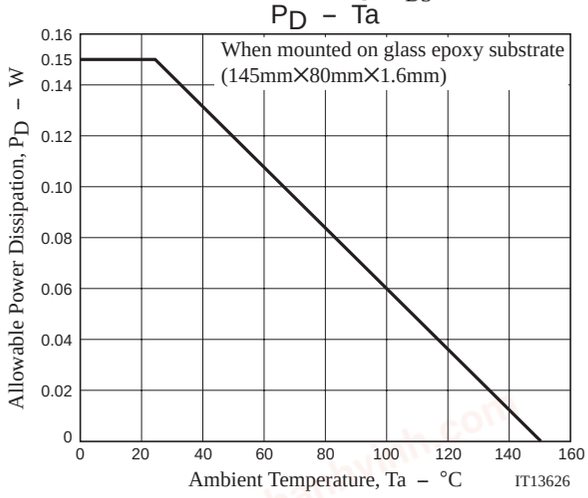
Ciss, Coss, Crss – V_{DS}



V_{GS} – Qg



P_D – Ta



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Note on usage : Since the 3LN04SS is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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