



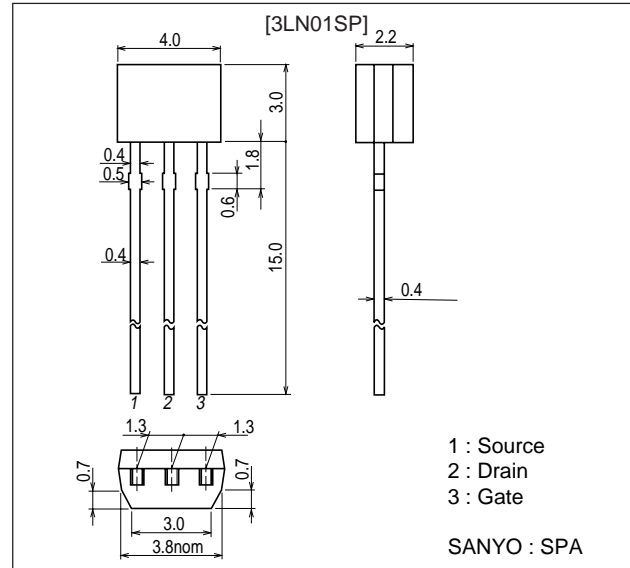
**Ultrahigh-Speed Switching Applications**

**Features**

- Low ON-resistance.
- Ultrahigh-speed switching.
- 2.5V drive.

**Package Dimensions**

unit : mm  
2180



**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>		0.15	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	0.6	A
Allowable Power Dissipation	P <sub>D</sub>		0.25	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> =0	30			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =30V, V <sub>GS</sub> =0			10	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±8V, V <sub>DS</sub> =0			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =100μA	0.4		1.3	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =80mA	0.15	0.22		S

Marking : YA

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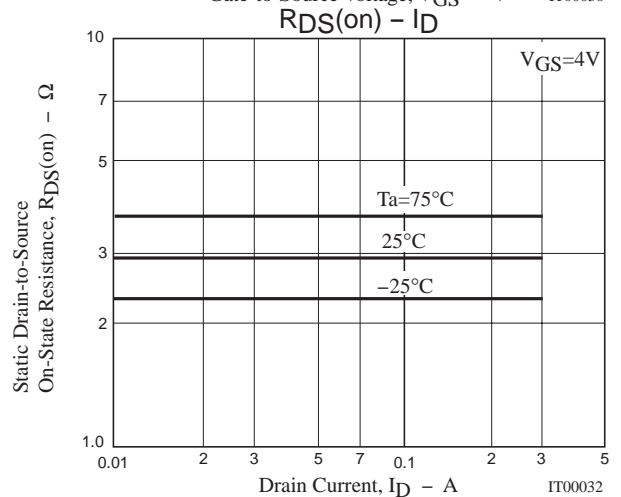
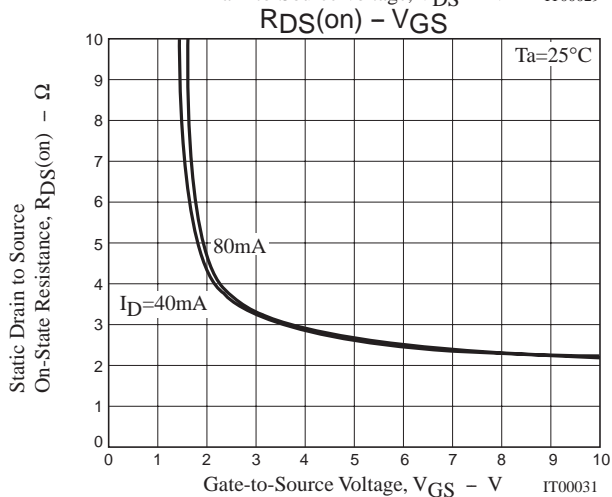
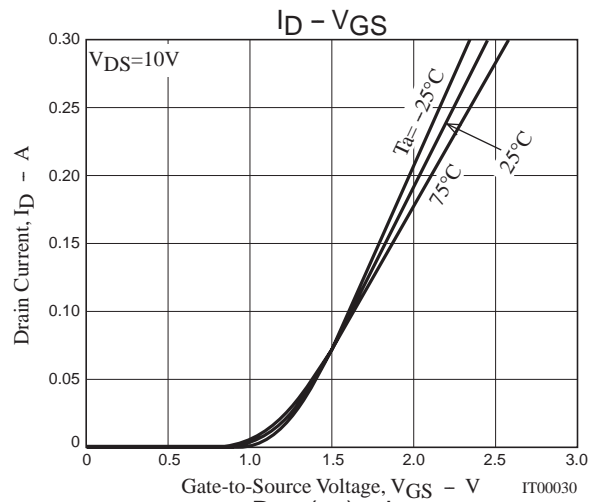
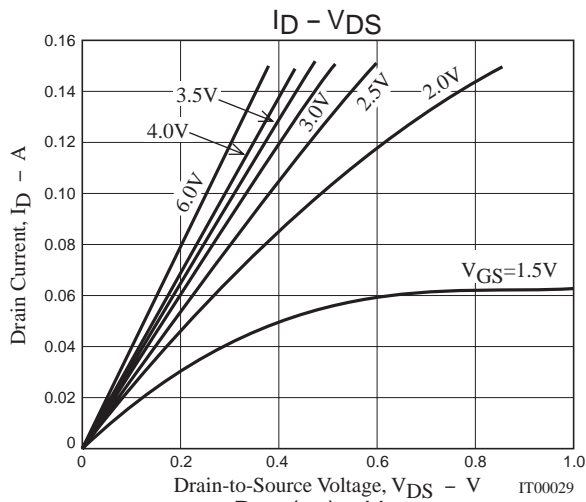
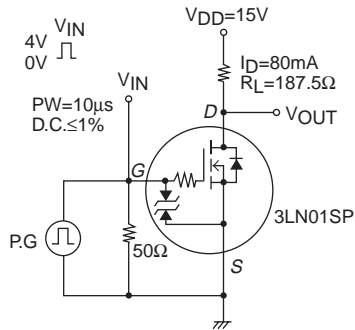
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# 3LN01SP

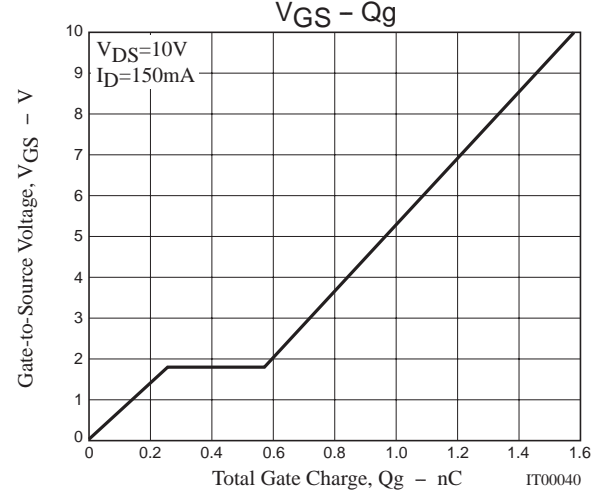
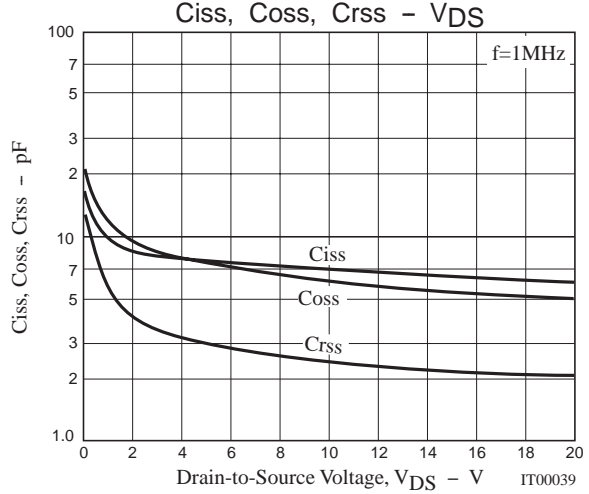
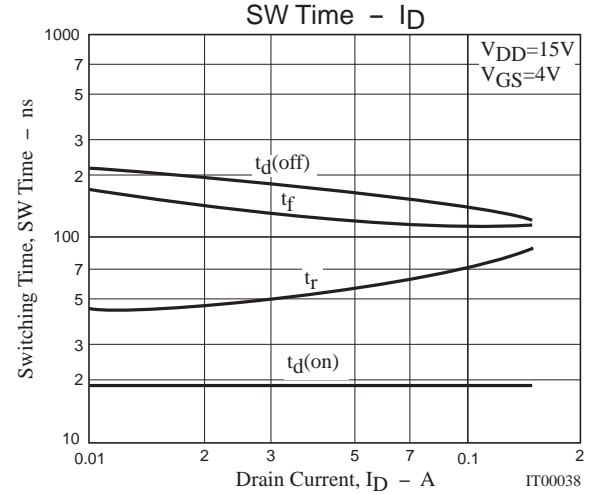
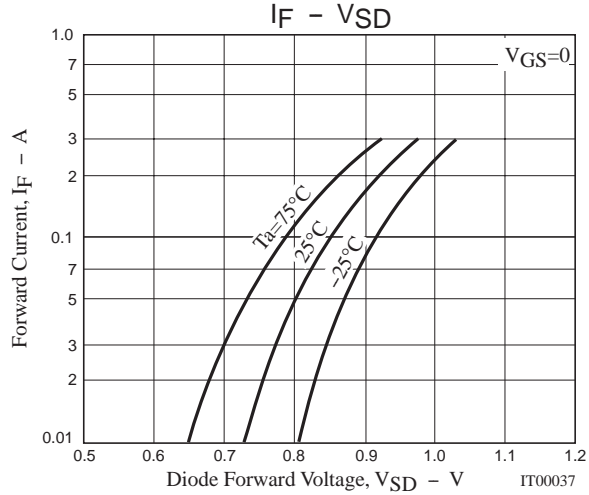
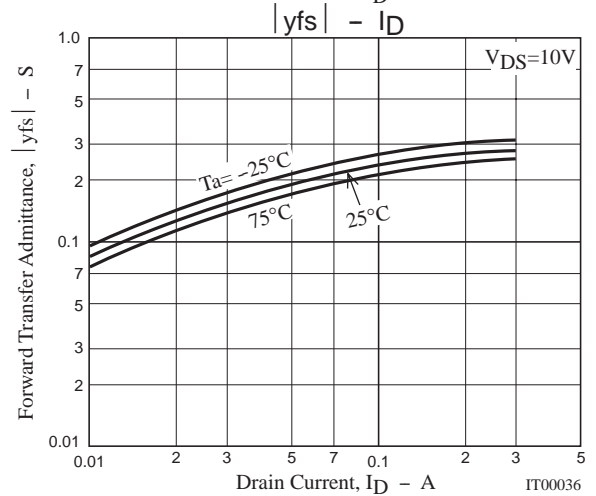
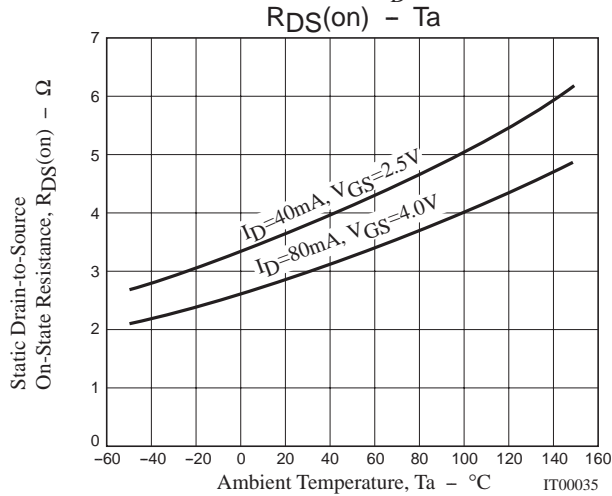
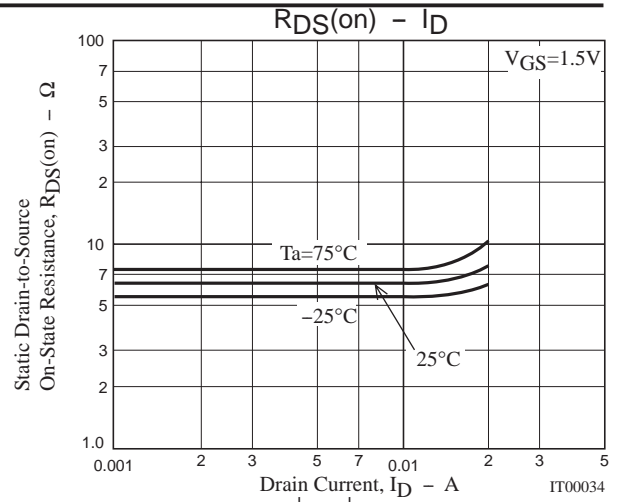
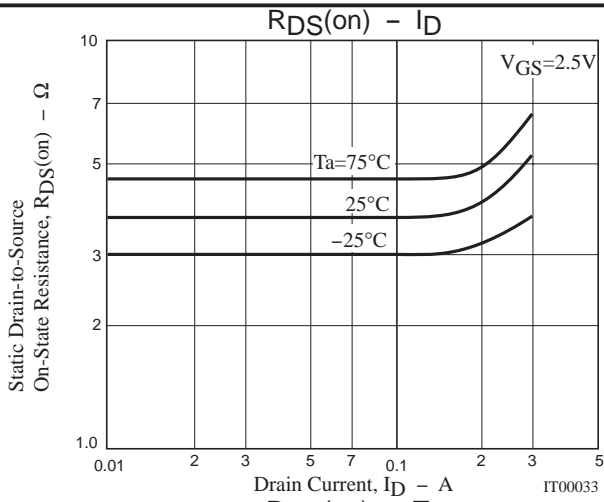
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=80\text{mA}, V_{GS}=4\text{V}$		2.9	3.7	$\Omega$
	$R_{DS(on)2}$	$I_D=40\text{mA}, V_{GS}=2.5\text{V}$		3.7	5.2	$\Omega$
	$R_{DS(on)3}$	$I_D=10\text{mA}, V_{GS}=1.5\text{V}$		6.4	12.8	$\Omega$
Input Capacitance	$C_{iss}$	$V_{DS}=10\text{V}, f=1\text{MHz}$		7.0		pF
Output Capacitance	$C_{oss}$	$V_{DS}=10\text{V}, f=1\text{MHz}$		5.9		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=10\text{V}, f=1\text{MHz}$		2.3		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit		19		ns
Rise Time	$t_r$	See specified Test Circuit		65		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit		155		ns
Fall Time	$t_f$	See specified Test Circuit		120		ns
Total Gate Charge	$Q_g$	$V_{DS}=10\text{V}, V_{GS}=10\text{V}, I_D=150\text{mA}$		1.58		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS}=10\text{V}, V_{GS}=10\text{V}, I_D=150\text{mA}$		0.26		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$	$V_{DS}=10\text{V}, V_{GS}=10\text{V}, I_D=150\text{mA}$		0.31		nC
Diode Forward Voltage	$V_{SD}$	$I_S=150\text{mA}, V_{GS}=0$		0.87	1.2	V

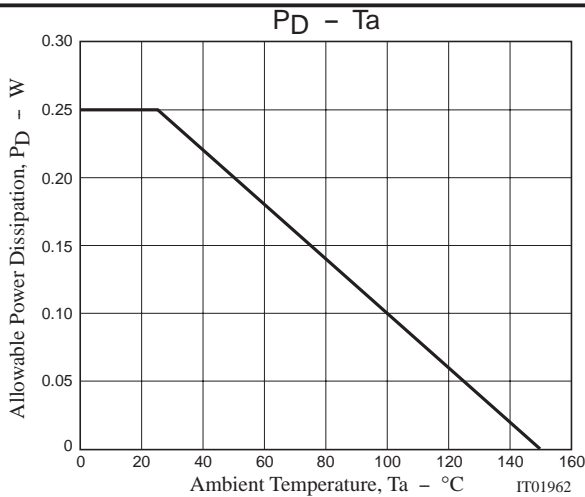
## Switching Time Test Circuit



# 3LN01SP



## 3LN01SP



Note on usage : Since the 3LN01SP is designed for high-speed switching applications, please avoid using this device in the vicinity of highly charged objects.

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