



3LN01SP

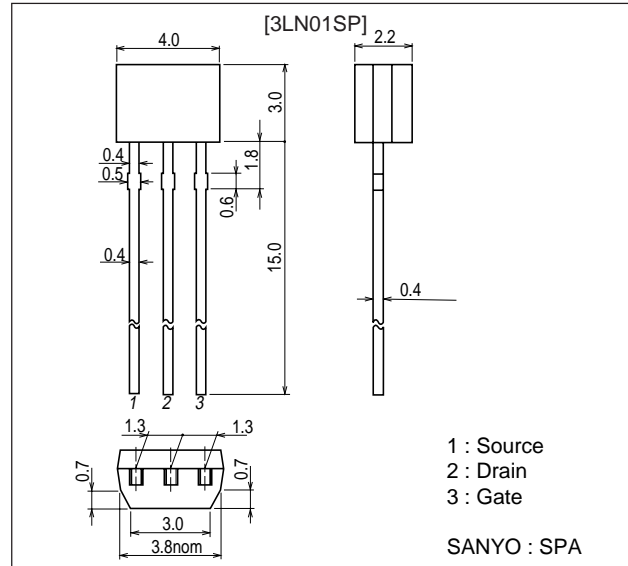
Ultrahigh-Speed Switching Applications

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 _{DSS}		30	V
Gate-to-Source Voltage	V _{GSS}		±10	V
Drain Current (DC)	I _D		0.15	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	0.6	A
Allowable Power Dissipation	P _D		0.25	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-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} =0	30			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V, V _{GS} =0			10	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±8V, V _{DS} =0			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =10V, I _D =100μA	0.4		1.3	V
Forward Transfer Admittance	y _{fs}	V _{DS} =10V, I _D =80mA	0.15	0.22		S

Marking : YA

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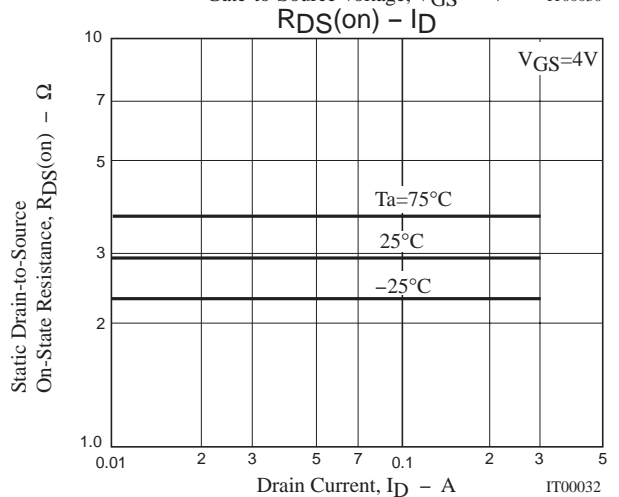
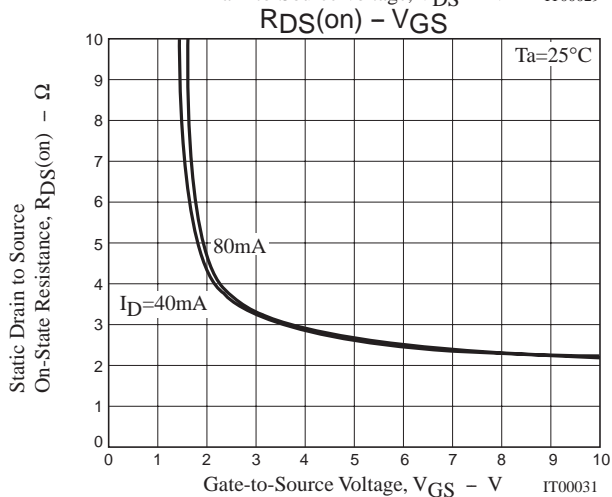
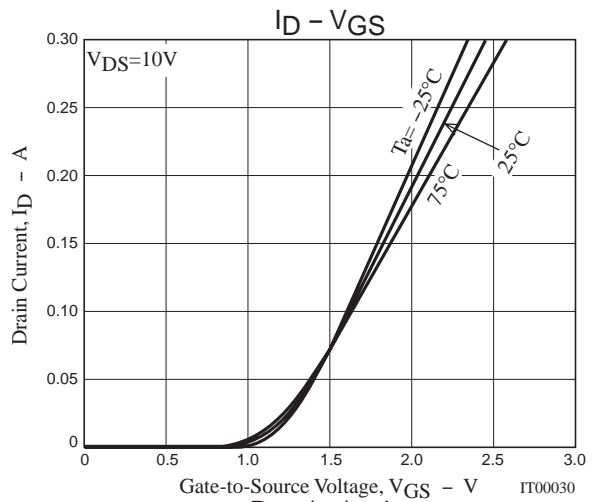
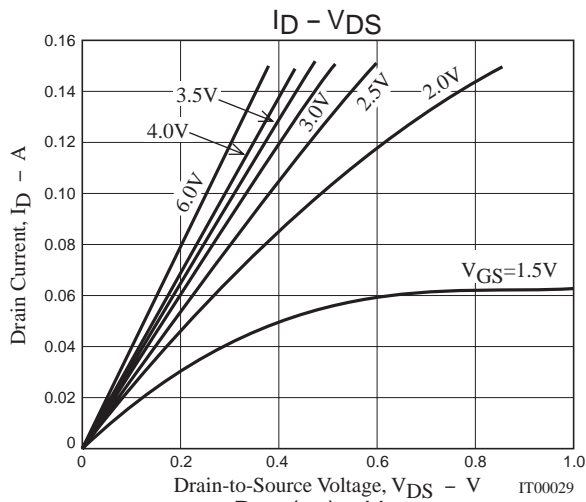
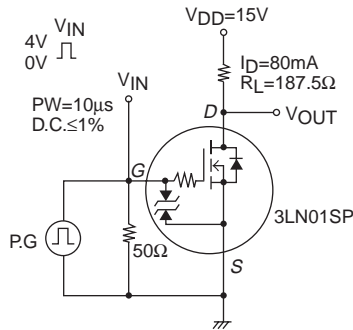
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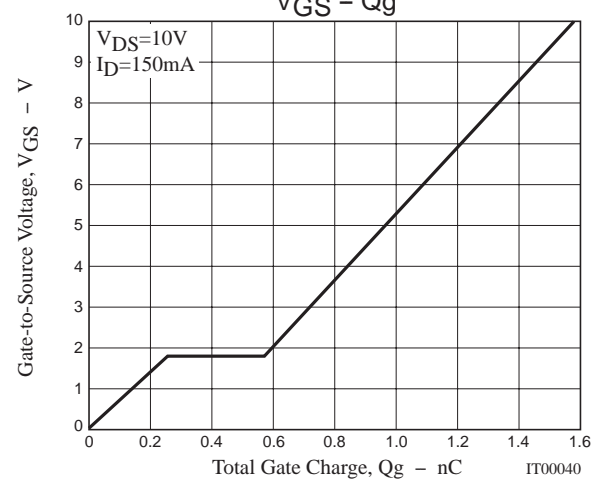
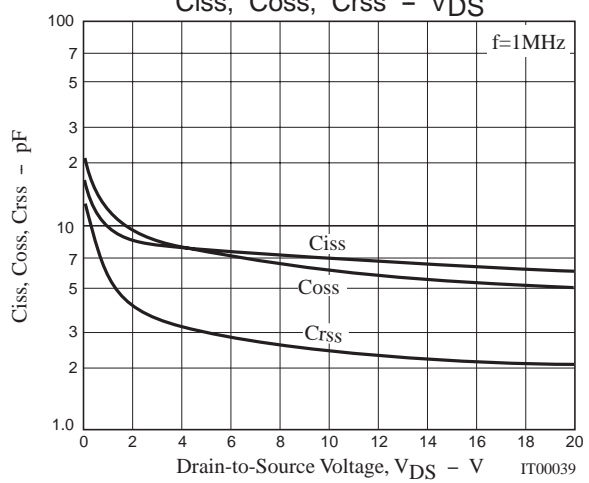
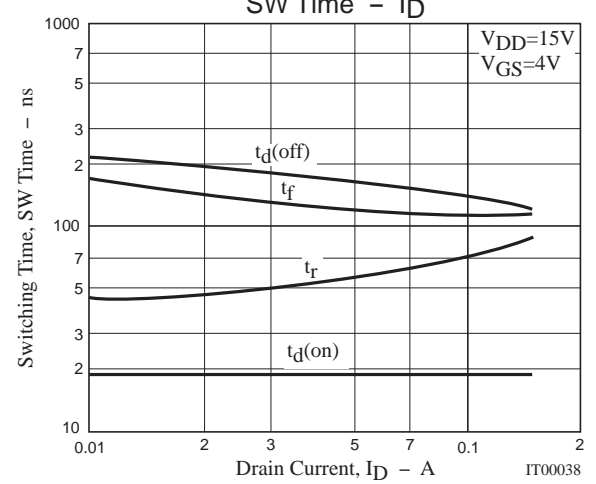
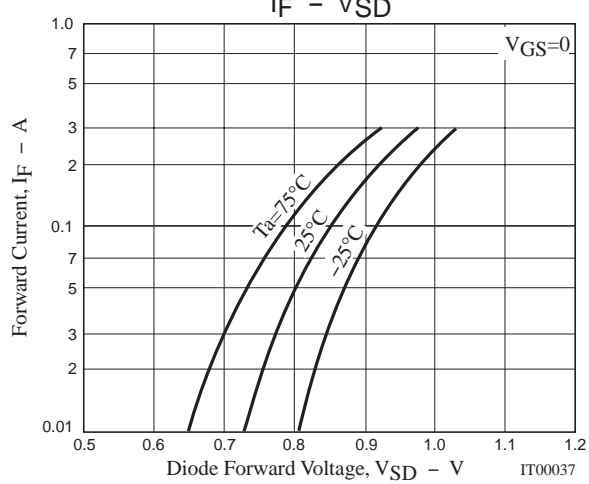
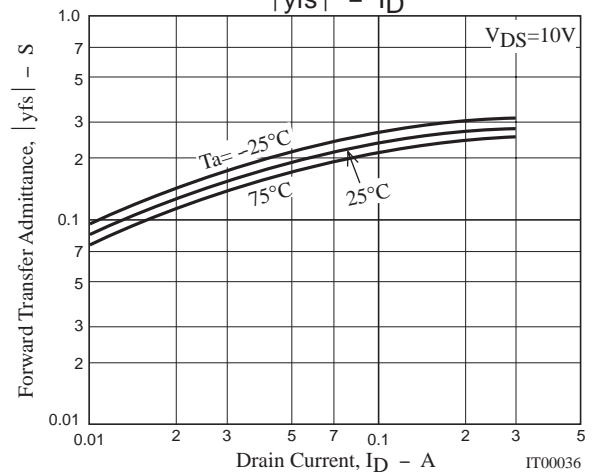
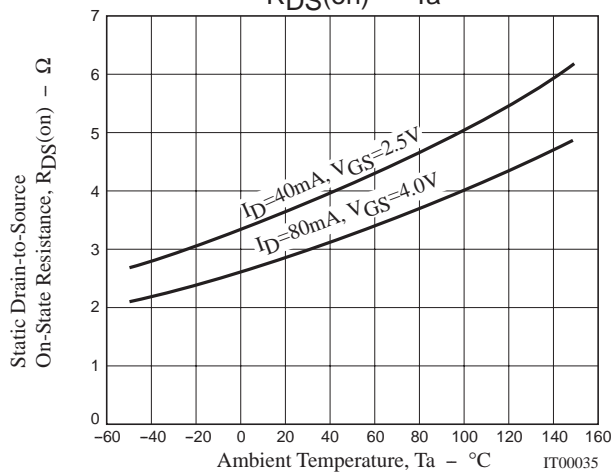
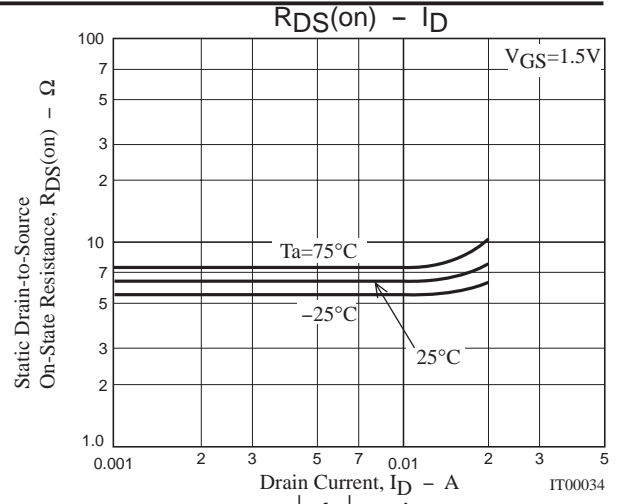
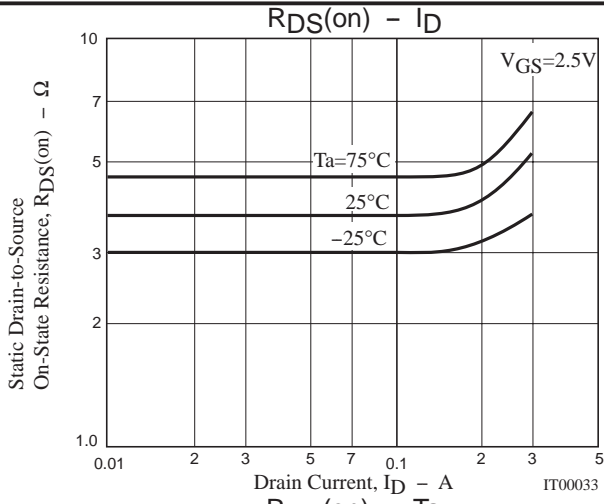
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=80\text{mA}, V_{GS}=4\text{V}$		2.9	3.7	Ω
	$R_{DS(on)2}$	$I_D=40\text{mA}, V_{GS}=2.5\text{V}$		3.7	5.2	Ω
	$R_{DS(on)3}$	$I_D=10\text{mA}, V_{GS}=1.5\text{V}$		6.4	12.8	Ω
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

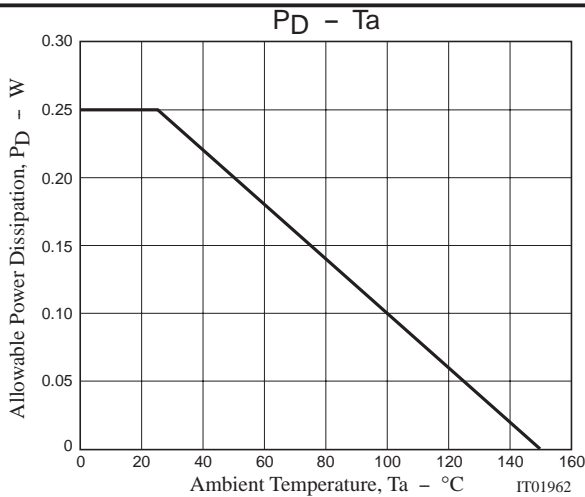
Switching Time Test Circuit



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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