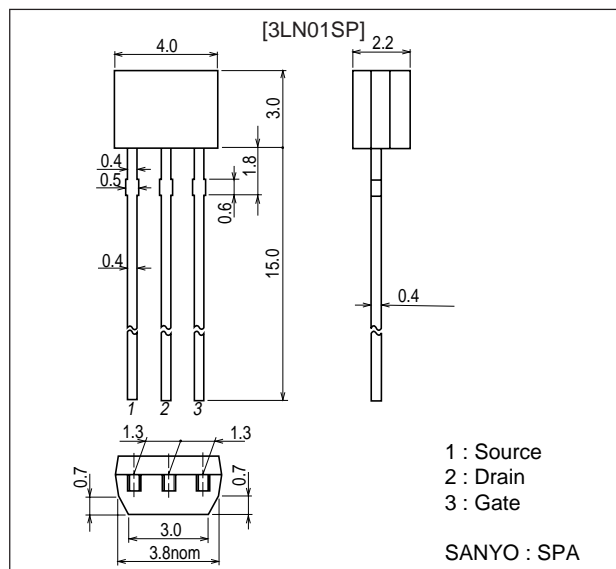


**SANYO****3LN01SP****Ultrahigh-Speed Switching Applications****Features**

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

**Package Dimensions**

unit : mm  
2180

**Specifications****Absolute Maximum Ratings** at  $T_a=25^\circ\text{C}$ 

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		30	V
Gate-to-Source Voltage	$V_{GSS}$		$\pm 10$	V
Drain Current (DC)	$I_D$		0.15	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu\text{s}$ , duty cycle $\leq 1\%$	0.6	A
Allowable Power Dissipation	$P_D$		0.25	W
Channel Temperature	$T_{ch}$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

**Electrical Characteristics** at  $T_a=25^\circ\text{C}$ 

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1\text{mA}$ , $V_{GS}=0$	30			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=30\text{V}$ , $V_{GS}=0$			10	$\mu\text{A}$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 8\text{V}$ , $V_{DS}=0$			$\pm 10$	$\mu\text{A}$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10\text{V}$ , $I_D=100\mu\text{A}$	0.4		1.3	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10\text{V}$ , $I_D=80\text{mA}$	0.15	0.22		S

Marking : YA

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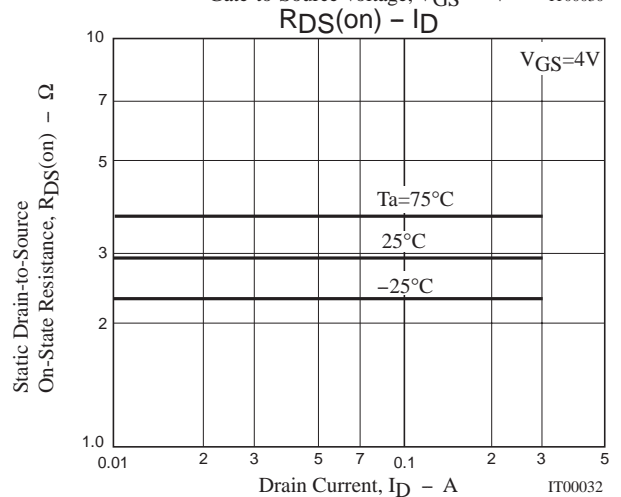
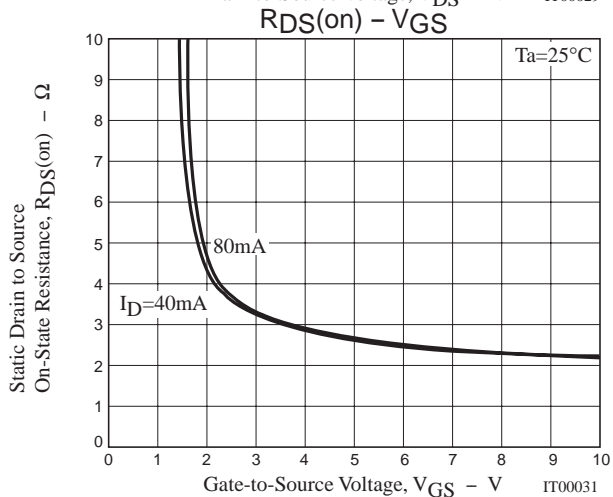
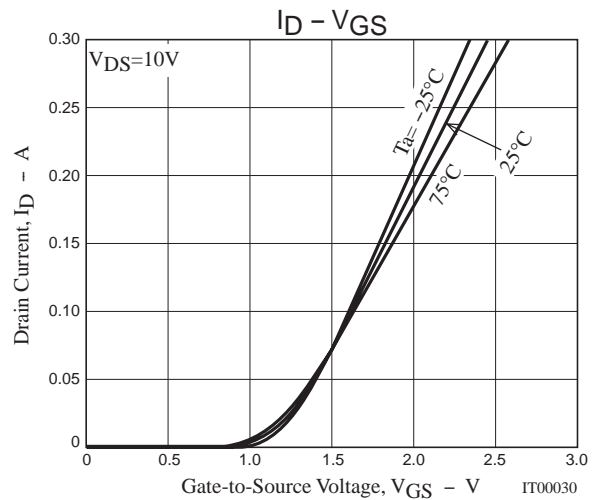
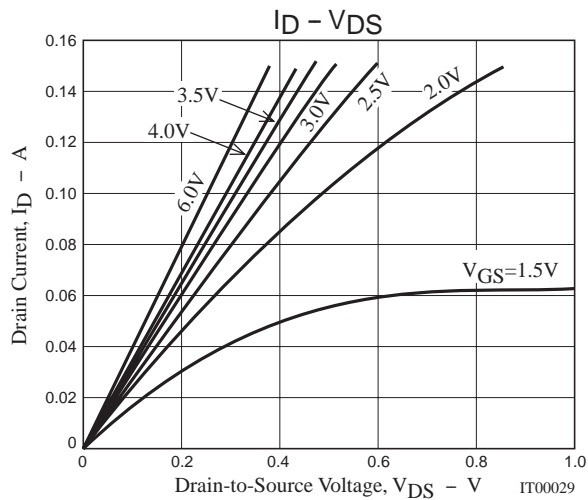
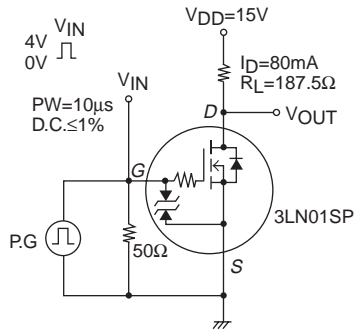
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- SANYO assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all SANYO products described or contained herein.

# 3LN01SP

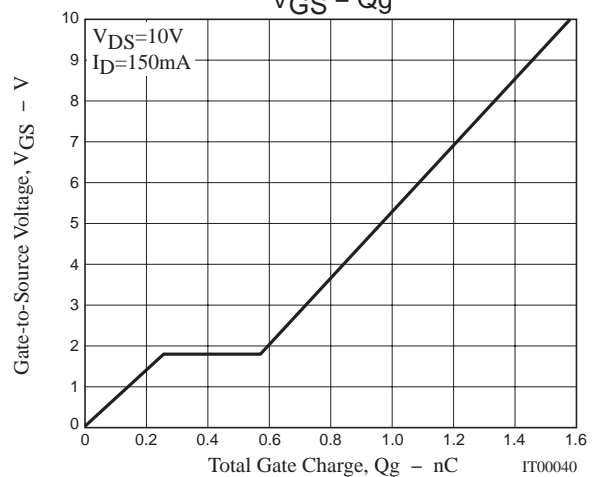
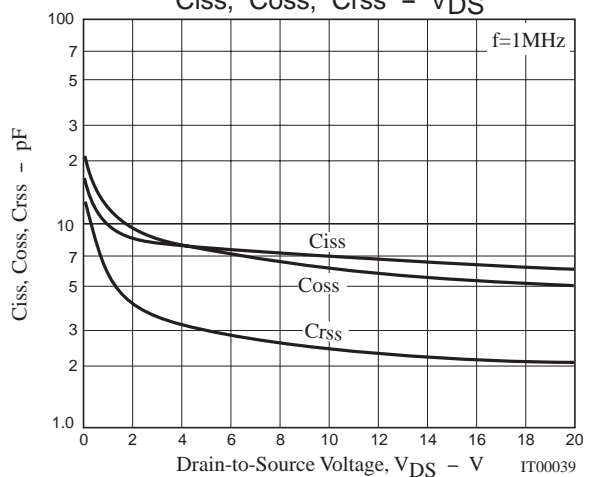
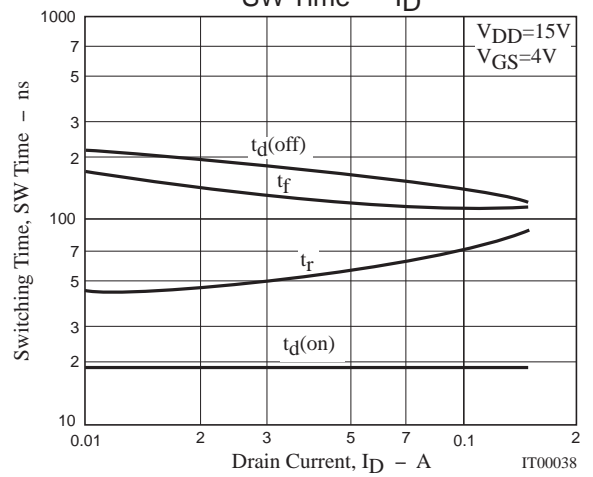
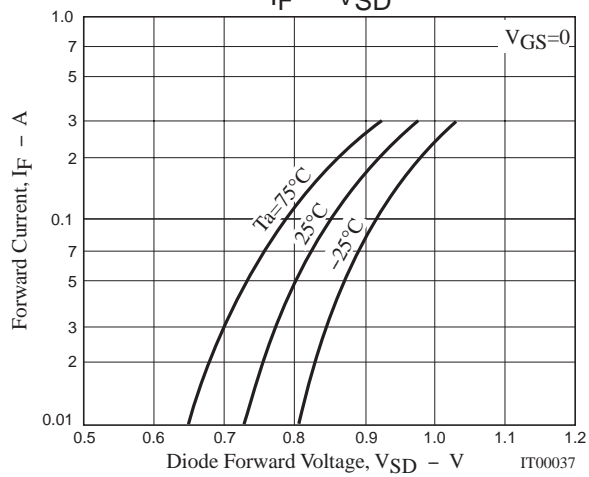
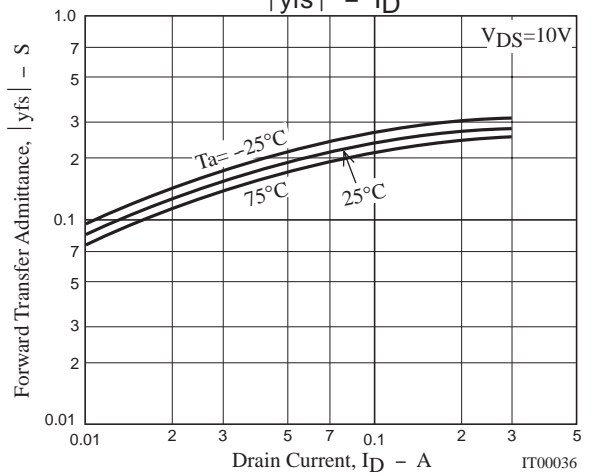
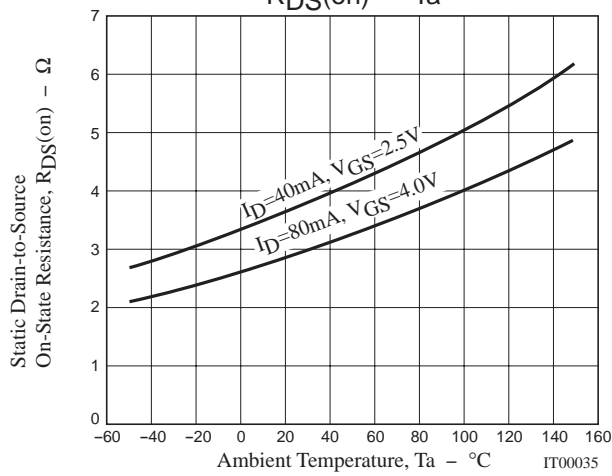
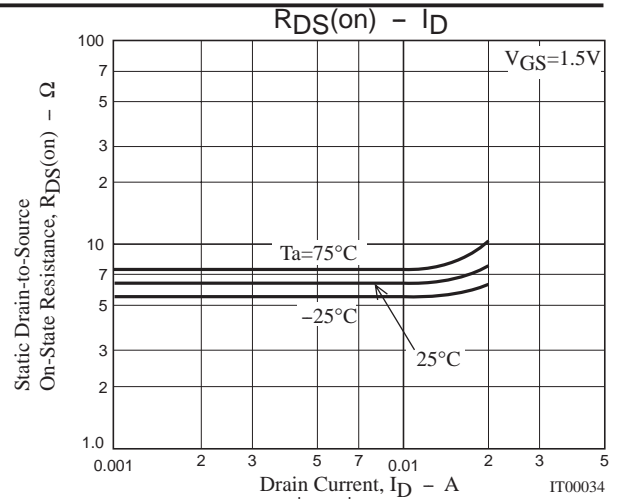
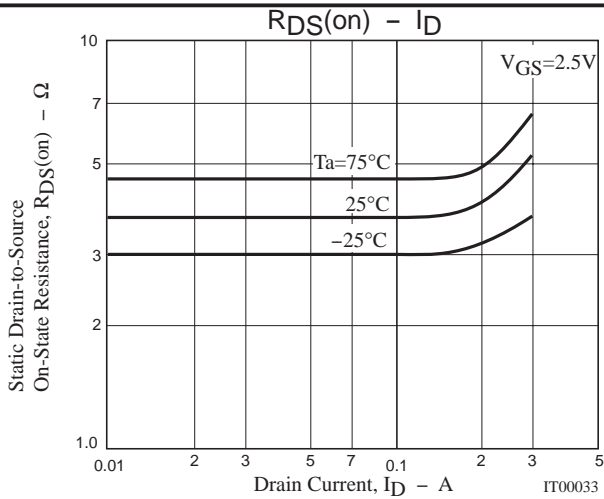
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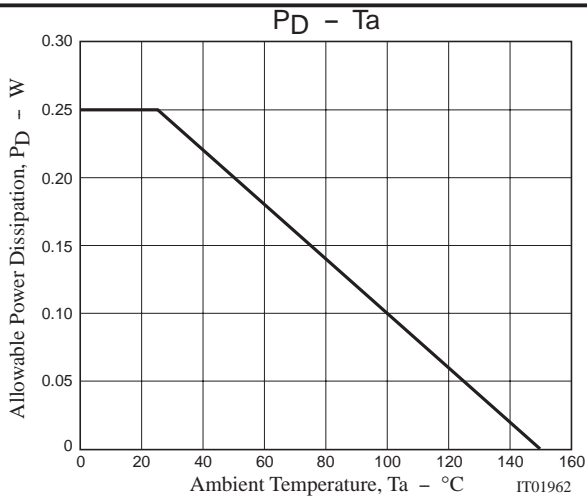
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=80\text{mA}$ , $V_{GS}=4\text{V}$		2.9	3.7	$\Omega$
	$R_{DS(on)2}$	$I_D=40\text{mA}$ , $V_{GS}=2.5\text{V}$		3.7	5.2	$\Omega$
	$R_{DS(on)3}$	$I_D=10\text{mA}$ , $V_{GS}=1.5\text{V}$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





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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