



# 3LN01SS

## N-Channel Small Signal MOSFET 30V, 0.15A, 3.7Ω, Single SSFP

ON Semiconductor®

<http://onsemi.com>

### Features

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

### 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>		0.15	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

This product is designed to "ESD immunity < 200V\*\*", so please take care when handling.

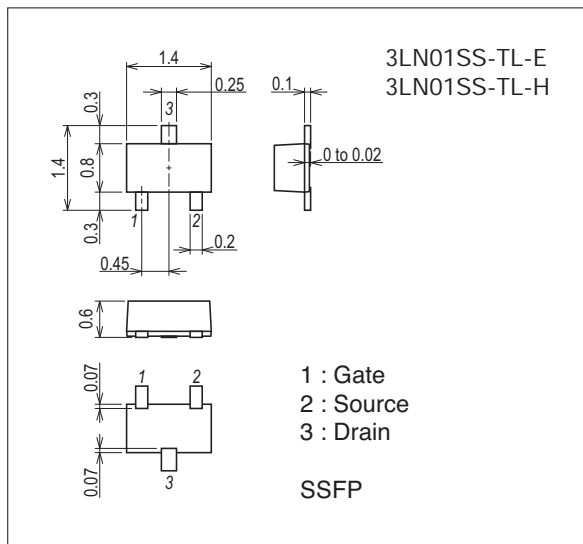
\* Machine Model

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

### Package Dimensions

unit : mm (typ)

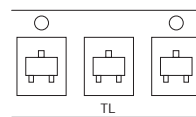
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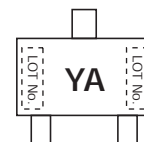
### Ordering & Package Information

Device	Package	Shipping	memo
3LN01SS-TL-E	SSFP SC-81	8,000 pcs./reel	Pb-Free
3LN01SS-TL-H	SSFP SC-81	8,000 pcs./reel	Pb-Free and Halogen Free

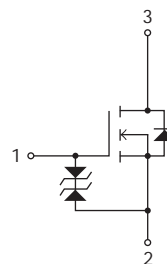
### Packing Type: TL



### Marking



### Electrical Connection

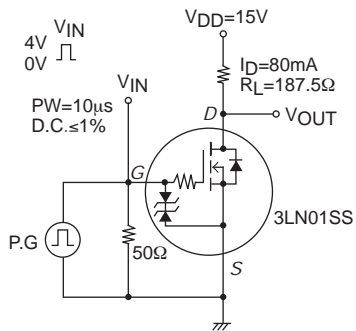


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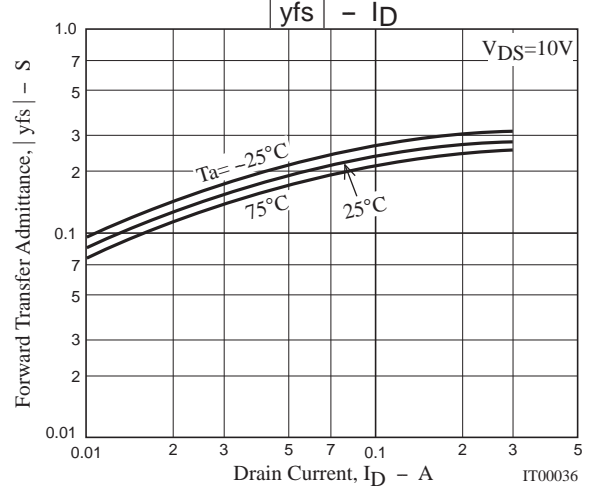
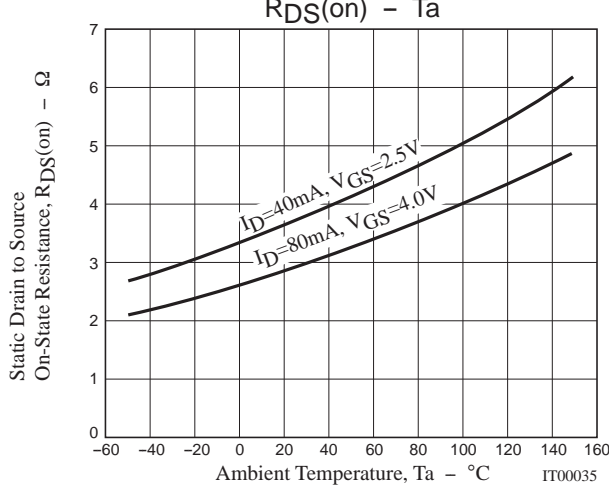
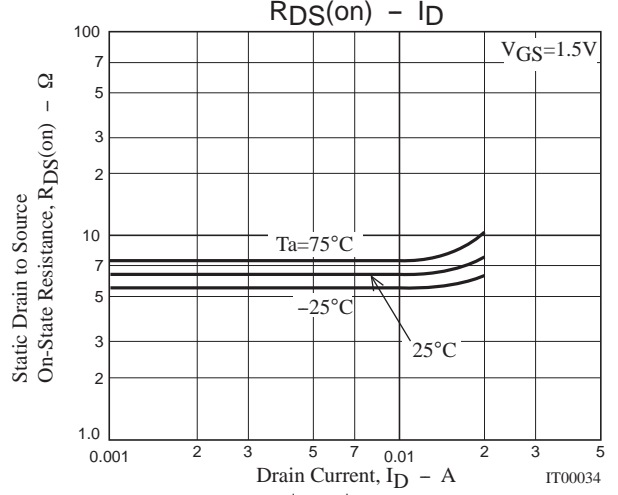
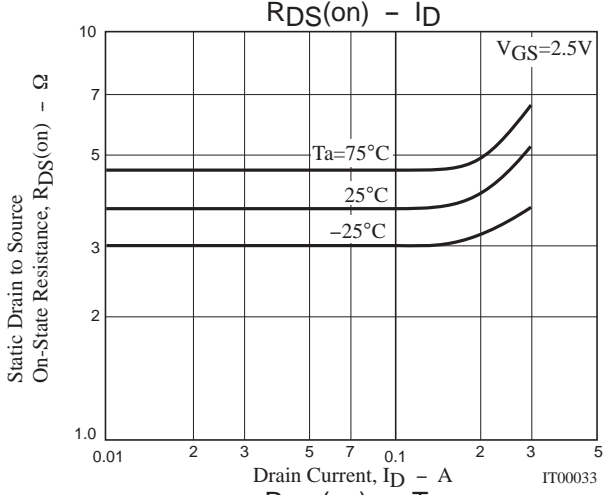
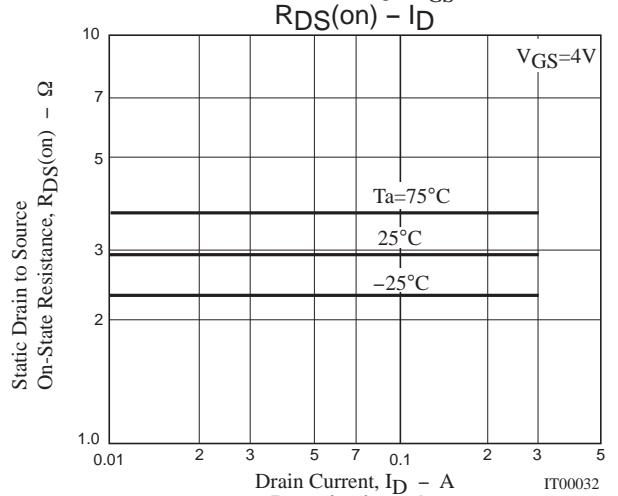
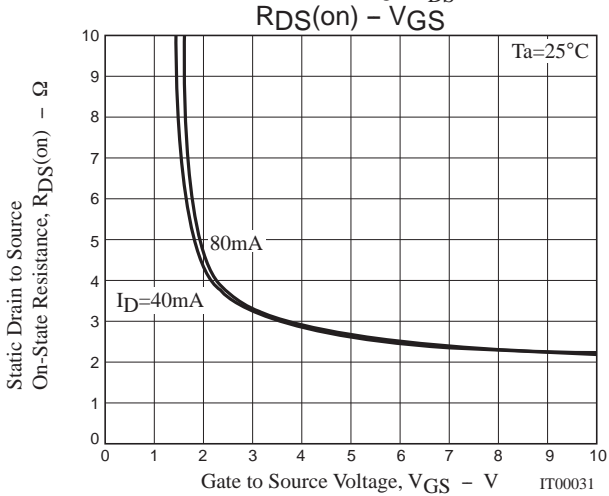
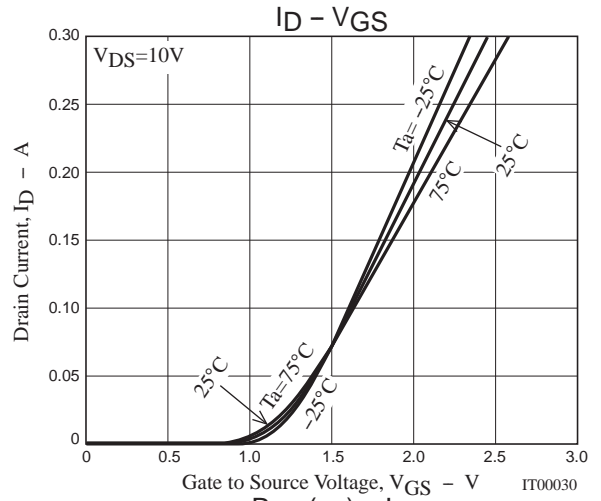
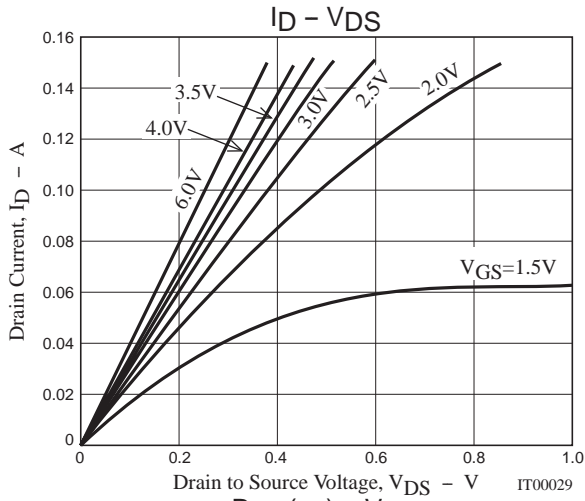
## Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit	
			min	typ	max		
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1\text{mA}, V_{GS}=0\text{V}$	30			V	
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=30\text{V}, V_{GS}=0\text{V}$			1	$\mu\text{A}$	
Gate to Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 8\text{V}, V_{DS}=0\text{V}$			$\pm 10$	$\mu\text{A}$	
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	
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	$C_{iss}$	See specified Test Circuit.		7.0		pF	
Output Capacitance	$C_{oss}$		$V_{DS}=10\text{V}, f=1\text{MHz}$		5.9		pF
Reverse Transfer Capacitance	$C_{rss}$				2.3		pF
Turn-ON Delay Time	$t_{d(on)}$				19		ns
Rise Time	$t_r$			65		ns	
Turn-OFF Delay Time	$t_{d(off)}$			155		ns	
Fall Time	$t_f$			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	$Q_{gs}$			0.26		nC	
Gate to Drain "Miller" Charge	$Q_{gd}$			0.31		nC	
Diode Forward Voltage	$V_{SD}$		$I_S=150\text{mA}, V_{GS}=0\text{V}$		0.87	1.2	V

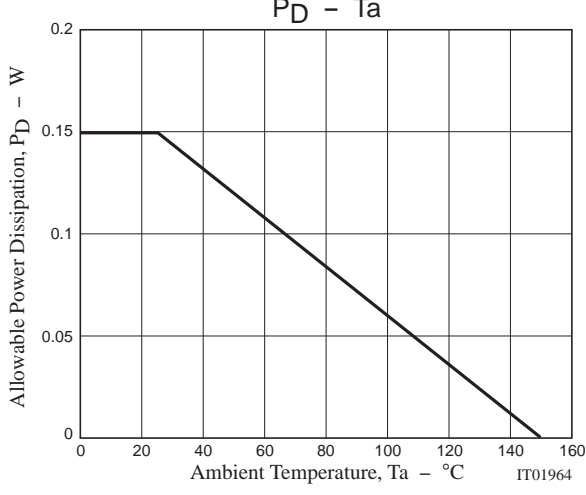
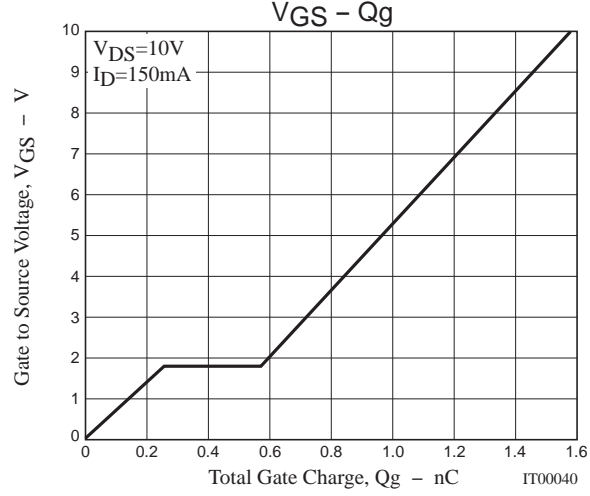
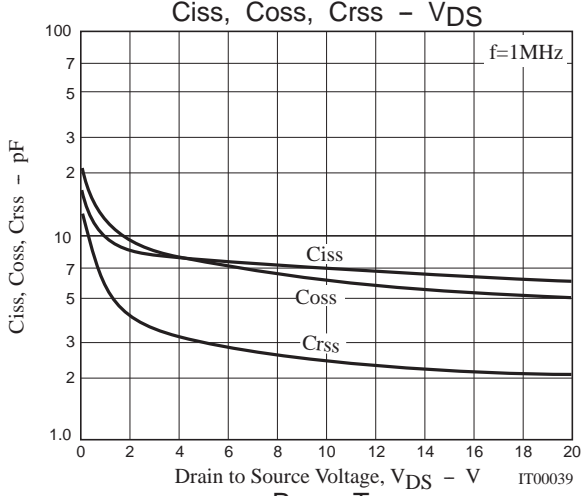
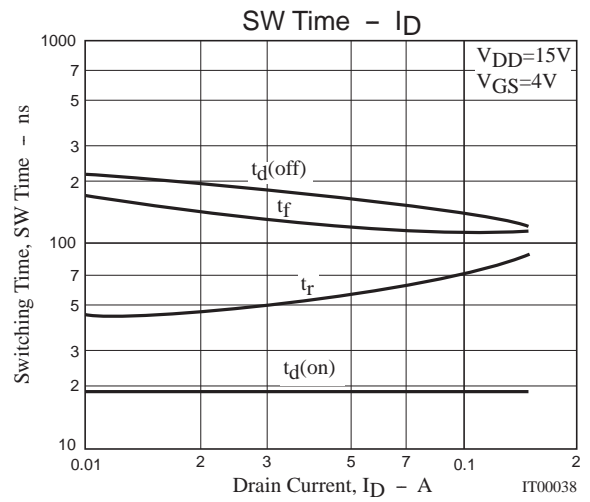
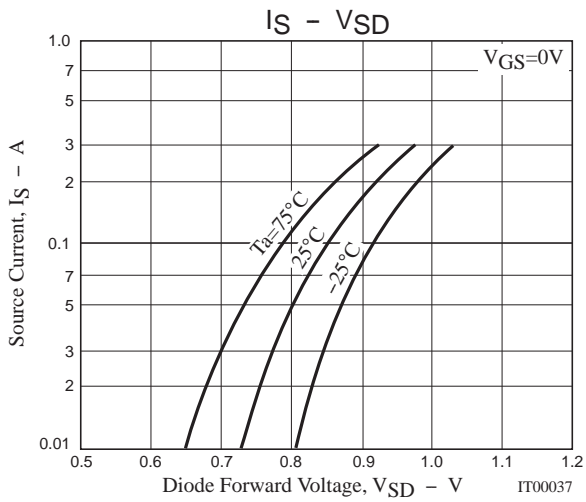
## Switching Time Test Circuit



# 3LN01SS



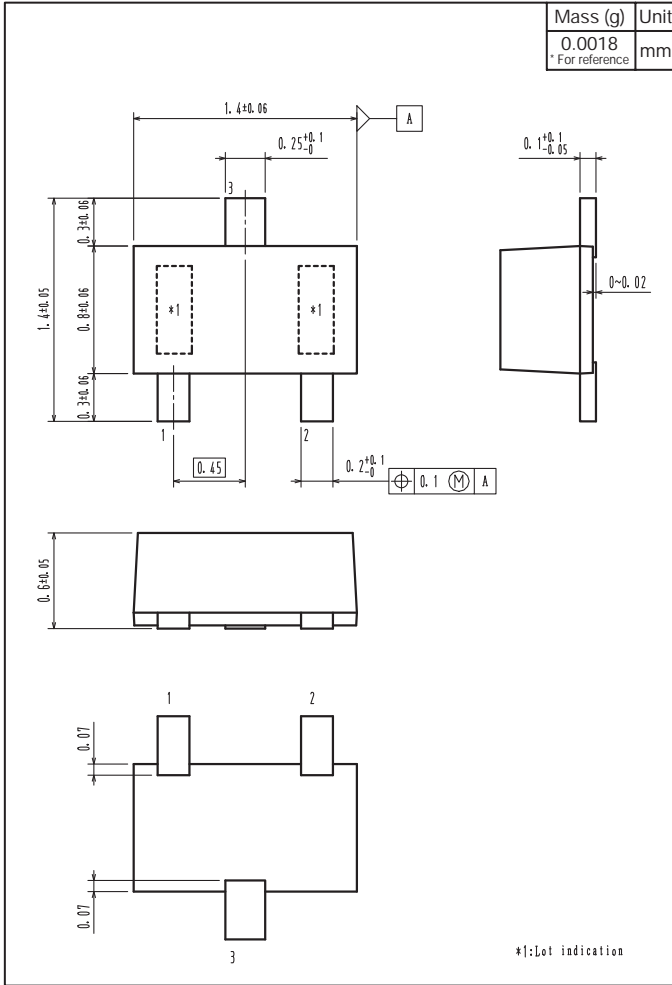
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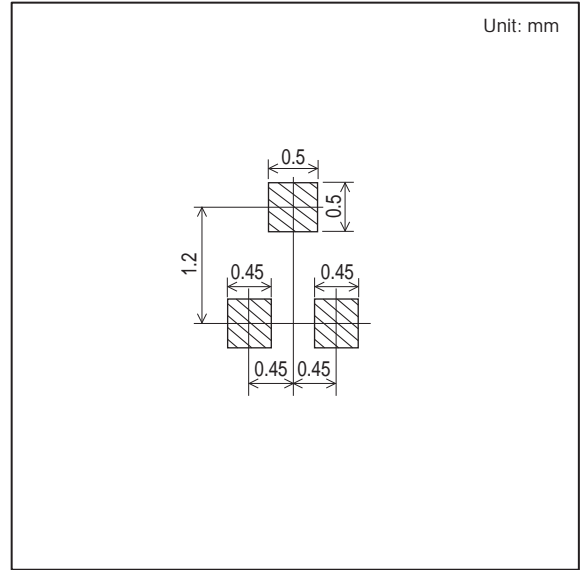
# 3LN01SS

## Outline Drawing

3LN01SS-TL-E, 3LN01SS-TL-H



## Land Pattern Example



Note on usage : Since the 3LN01SS is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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