



# 3LP01SS

## P-Channel Small Signal MOSFET -30V, -0.1A, 10.4Ω, Single SSFP

ON Semiconductor®

<http://onsemi.com>

### Features

- Low ON-resistance
- High-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>		-0.1	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-0.4	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.

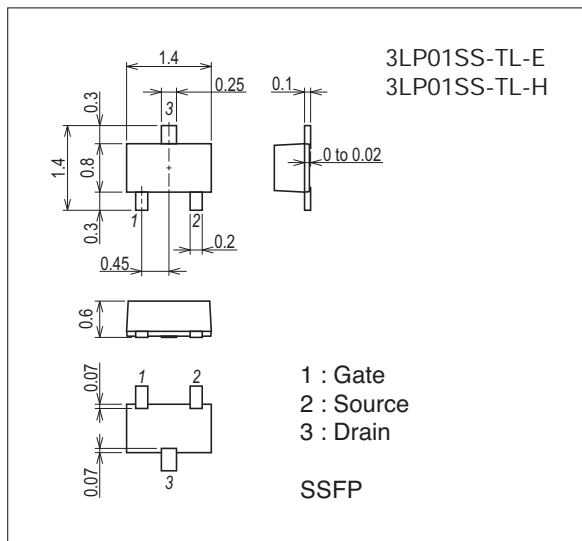
\* Machine Model

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)

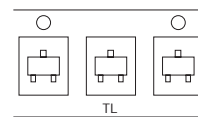
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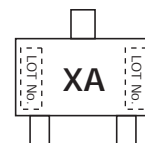
### Product & Package Information

- Package : SSFP
- JEITA, JEDEC : SC-81
- Minimum Packing Quantity : 8,000 pcs./reel

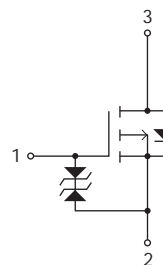
### Packing Type: TL



### Marking



### Electrical Connection

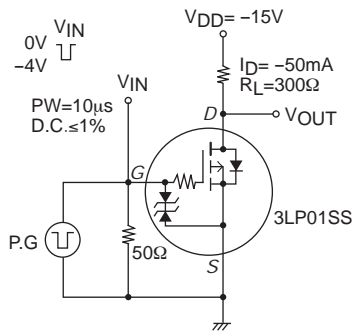


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## Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V(BR)DSS	I <sub>D</sub> = -1mA, V <sub>GS</sub> =0V	-30			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = -30V, V <sub>GS</sub> =0V			-1	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±8V, V <sub>DS</sub> =0V			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> = -10V, I <sub>D</sub> = -100μA	-0.4		-1.4	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> = -10V, I <sub>D</sub> = -50mA	80	110		mS
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> = -50mA, V <sub>GS</sub> = -4V		8	10.4	Ω
	R <sub>DS(on)2</sub>	I <sub>D</sub> = -30mA, V <sub>GS</sub> = -2.5V		11	15.4	Ω
	R <sub>DS(on)3</sub>	I <sub>D</sub> = -1mA, V <sub>GS</sub> = -1.5V		27	54	Ω
Input Capacitance	C <sub>iss</sub>			7.5		pF
Output Capacitance	C <sub>oss</sub>	V <sub>DS</sub> = -10V, f=1MHz		5.7		pF
Reverse Transfer Capacitance	C <sub>rss</sub>			1.8		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See specified Test Circuit.		24		ns
Rise Time	t <sub>r</sub>			55		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>			120		ns
Fall Time	t <sub>f</sub>			130		ns
Total Gate Charge	Q <sub>g</sub>				1.43	
Gate-to-Source Charge	Q <sub>gs</sub>	V <sub>DS</sub> = -10V, V <sub>GS</sub> = -10V, I <sub>D</sub> = -100mA		0.18		nC
Gate-to-Drain "Miller" Charge	Q <sub>gd</sub>			0.25		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> = -100mA, V <sub>GS</sub> =0V		-0.83	-1.2	V

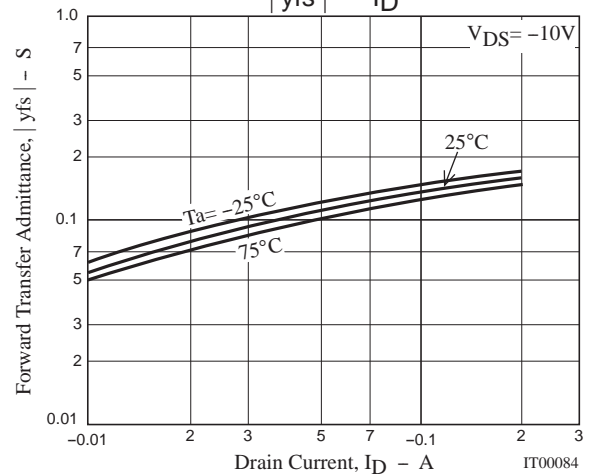
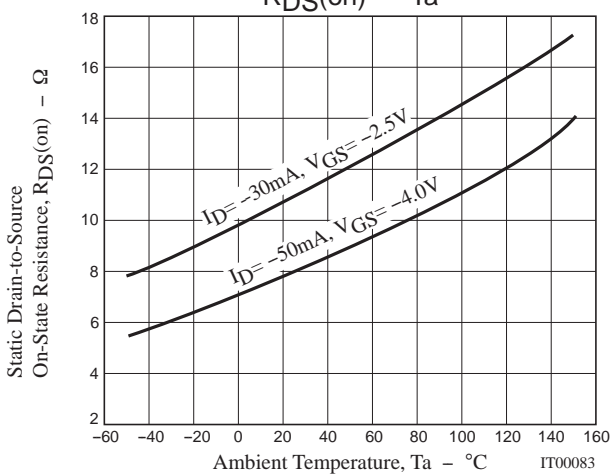
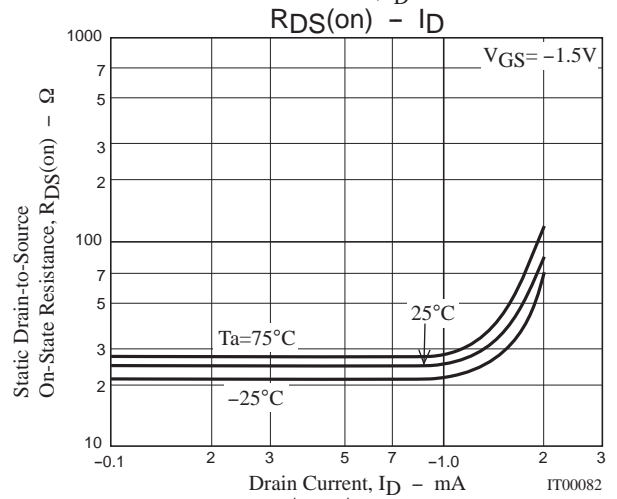
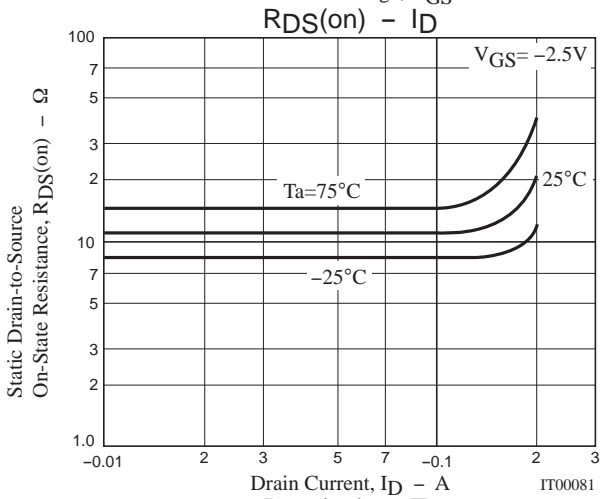
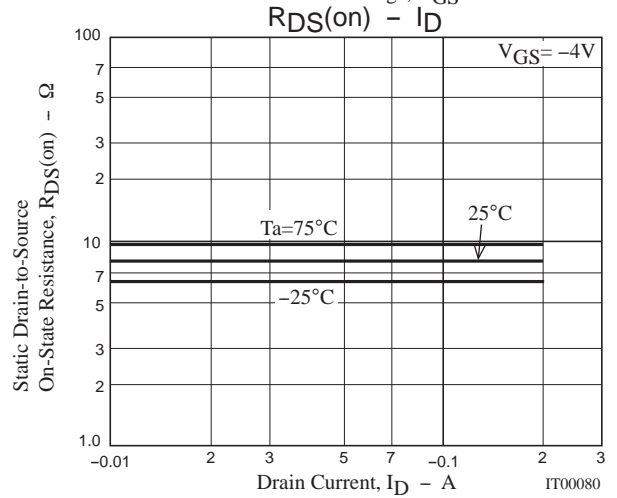
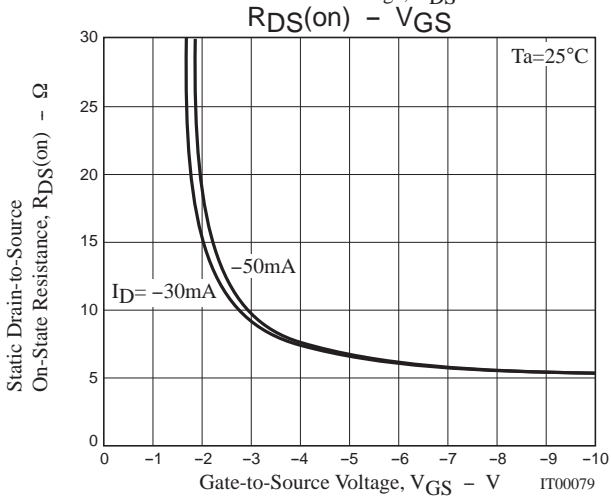
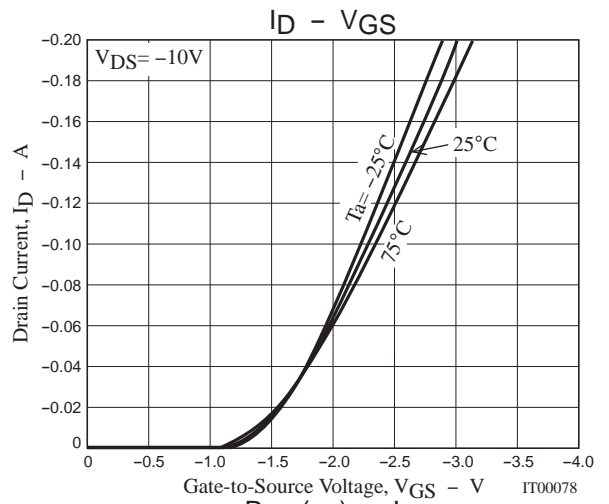
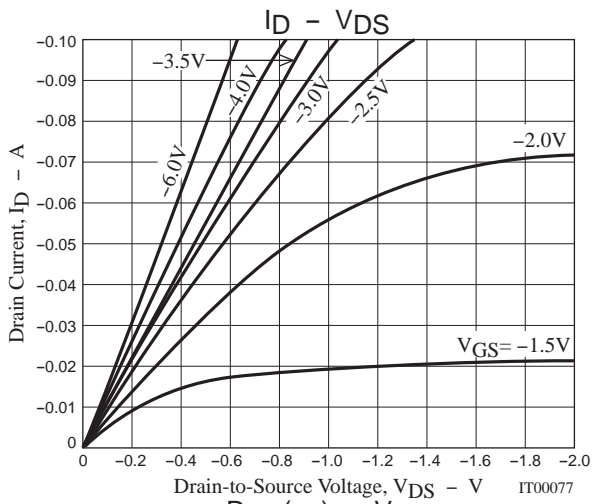
## Switching Time Test Circuit



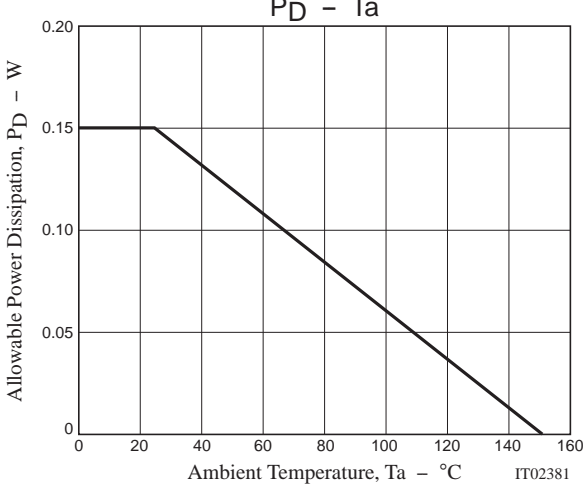
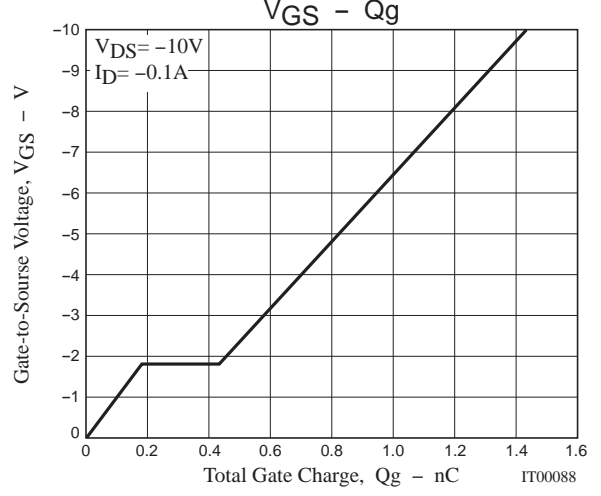
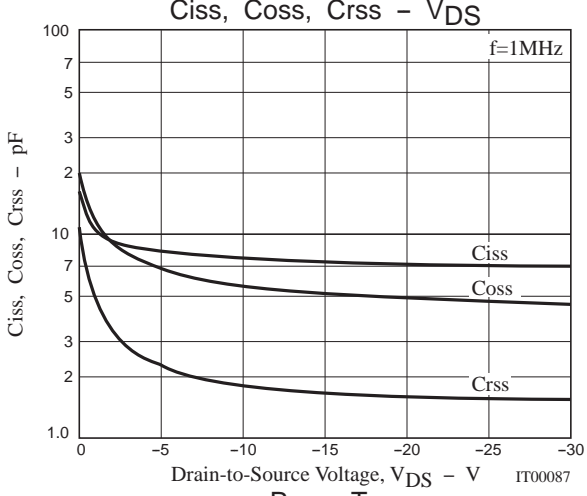
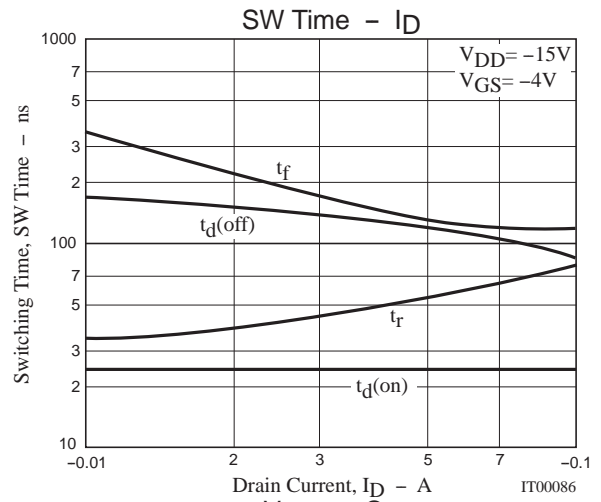
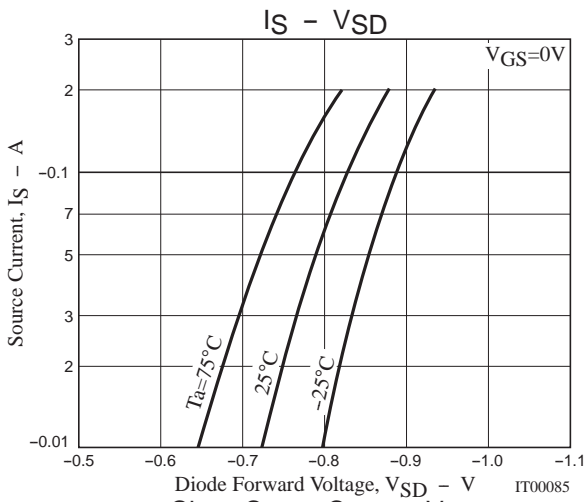
## Ordering Information

Device	Package	Shipping	memo
3LP01SS-TL-E	SSFP	8,000pcs./reel	Pb Free
3LP01SS-TL-H	SSFP	8,000pcs./reel	Pb Free and Halogen Free

# 3LP01SS



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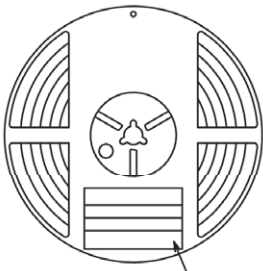
# 3LP01SS

## Embossed Taping Specification 3LP01SS-TL-E, 3LP01SS-TL-H

### 1. Packing Format

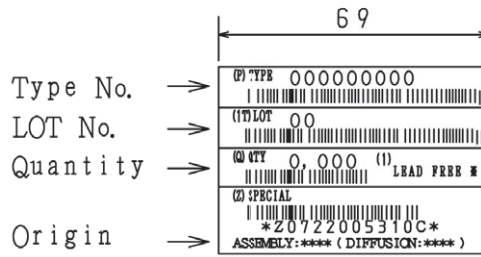
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
SSFP	SSFP	8,000	40,000	240,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

#### Packing method



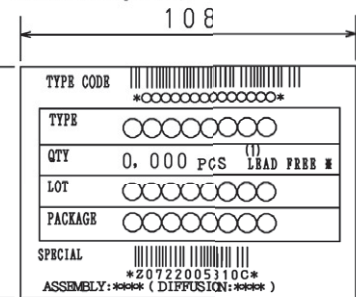
Reel label

Reel label, Inner box label  
(unit:mm)



Outer box label

It is a label at the time of factory shipments. The form of a label may change in physical distribution process.



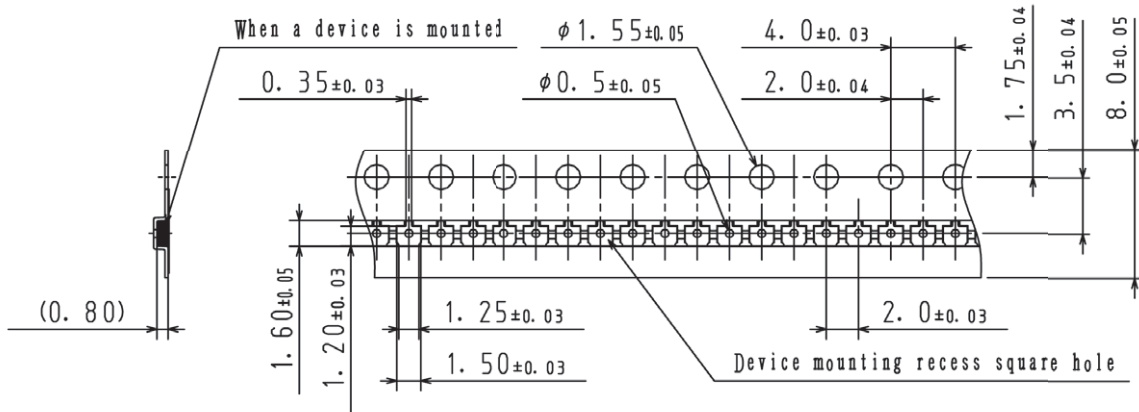
#### NOTE (1)

The LEAD FREE # description shows that the surface treatment of the terminal is lead free.

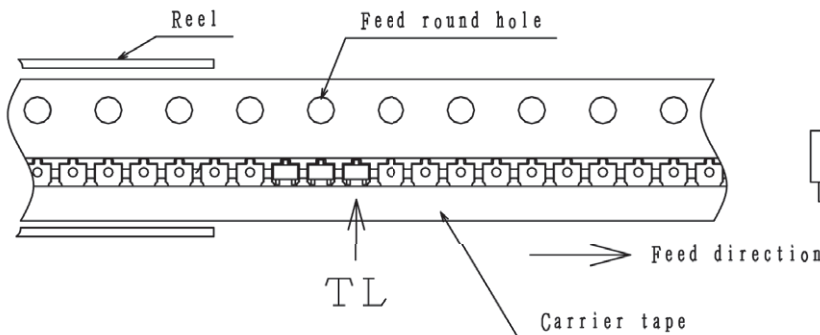
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

### 2. Taping configuration

#### 2-1. Carrier tape size (unit:mm)



#### 2-2. Device placement direction

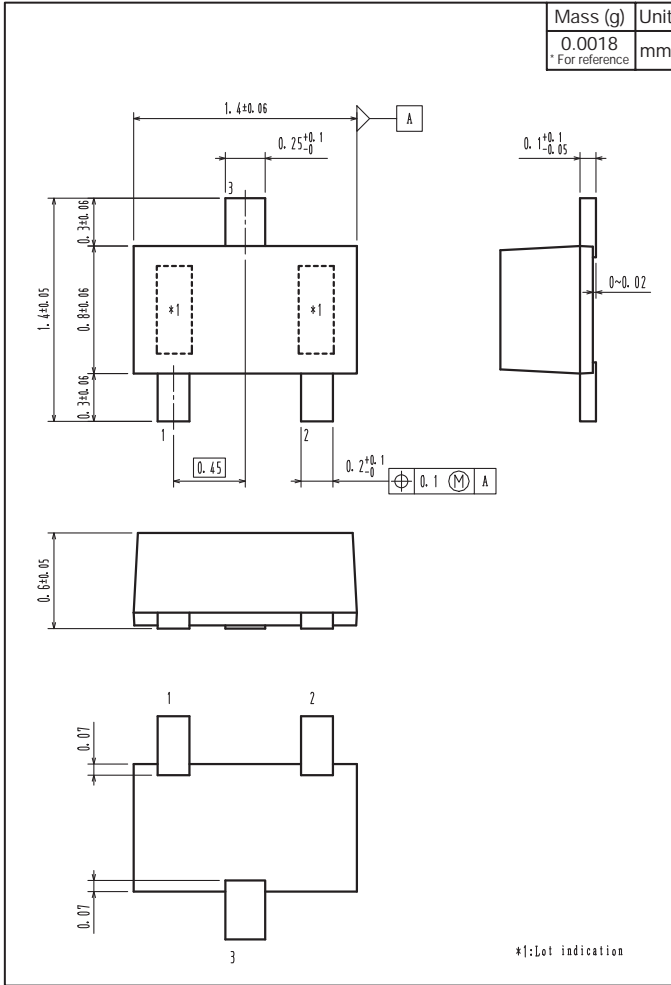


Those with pin 1 index on the feed hole side.....TL

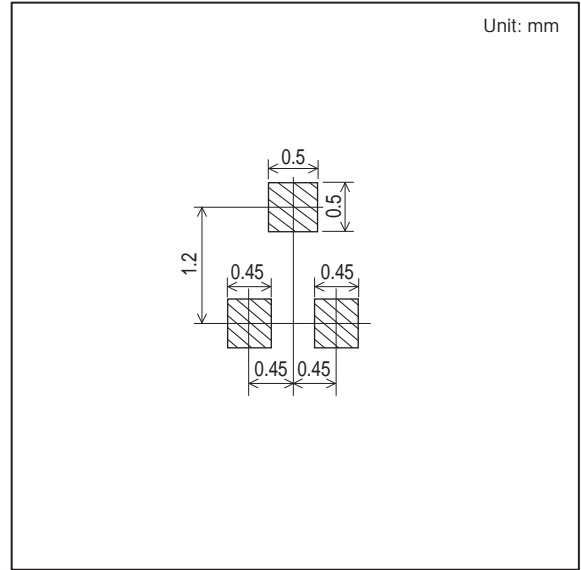
# 3LP01SS

## Outline Drawing

3LP01SS-TL-E, 3LP01SS-TL-H



## Land Pattern Example



Note on usage : Since the 3LP01SS is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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