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3LP01SS

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

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 _{DSS}		-30	V
Gate-to-Source Voltage	V _{GSS}		±10	V
Drain Current (DC)	I _D		-0.1	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	-0.4	A
Allowable Power Dissipation	P _D		0.15	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

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

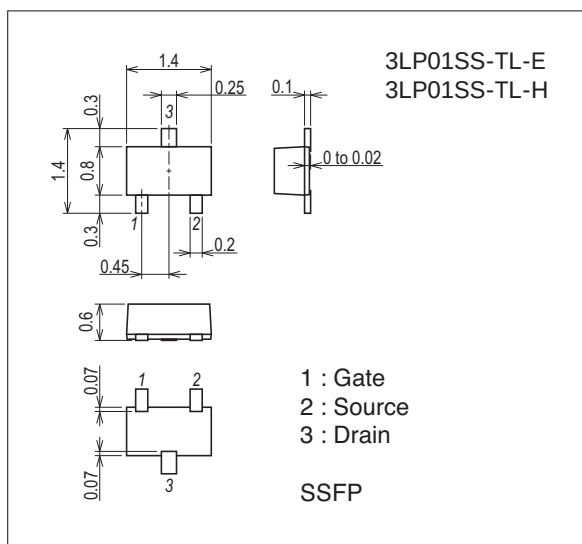
* Machine Model

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)

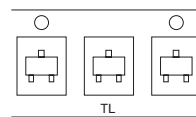
7029A-003



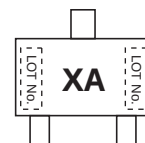
Product & Package Information

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

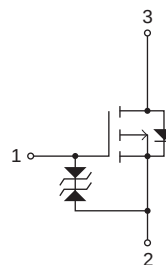
Packing Type: TL



Marking



Electrical Connection

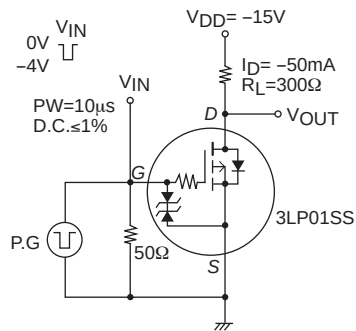


3LP01SS

Electrical Characteristics at Ta=25°C

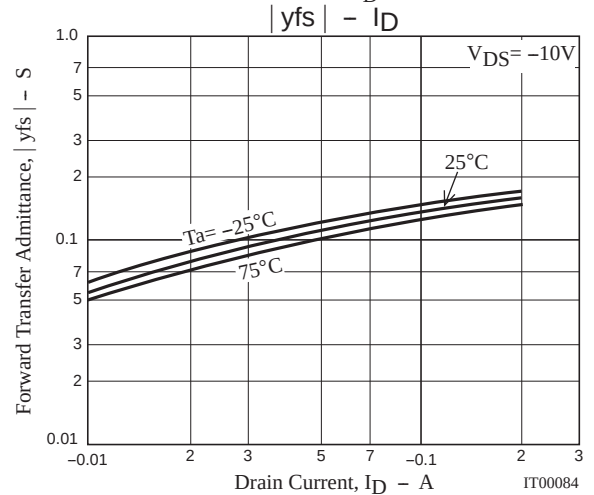
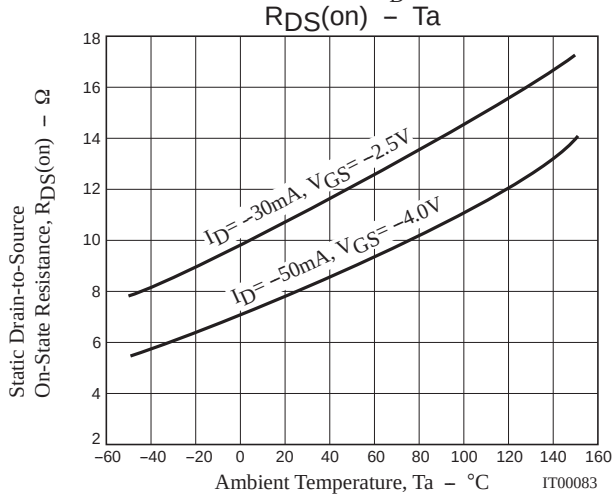
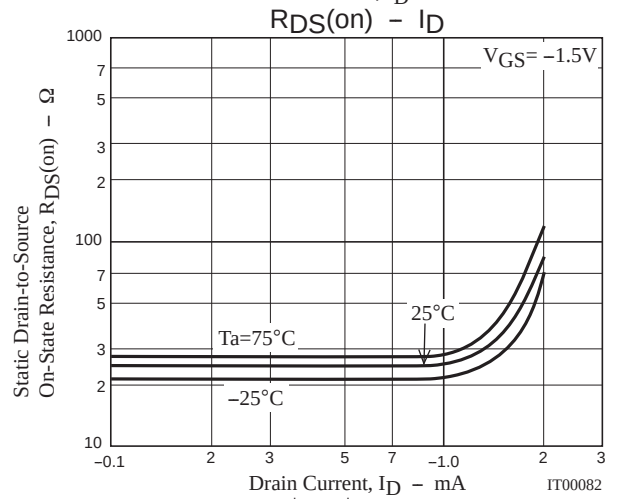
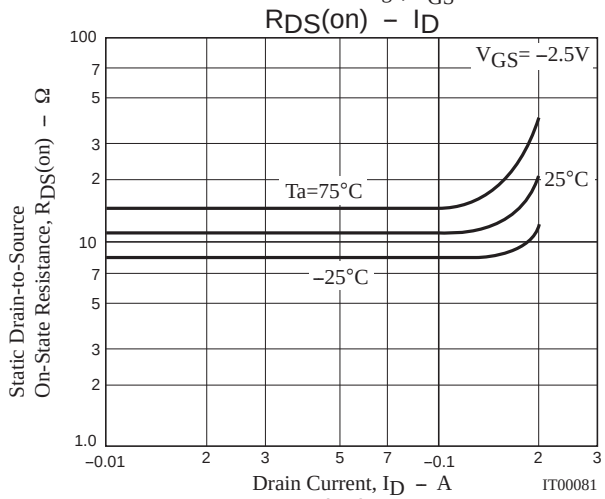
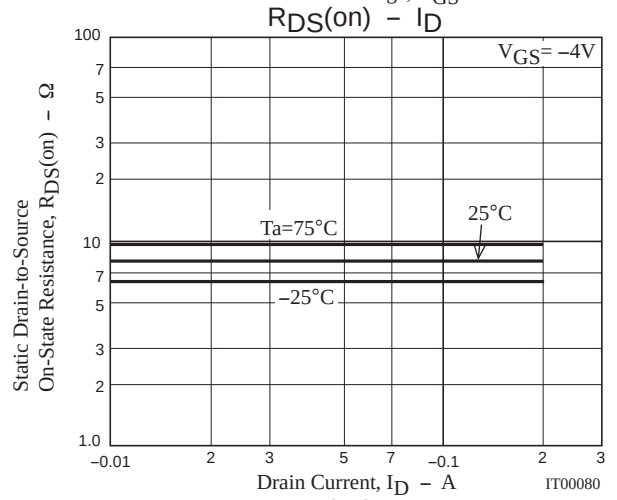
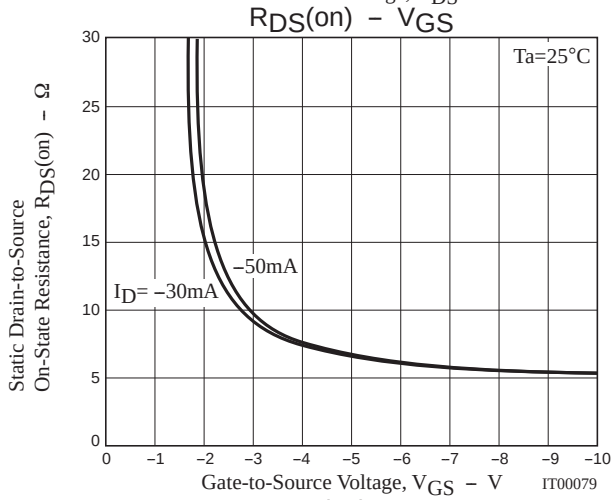
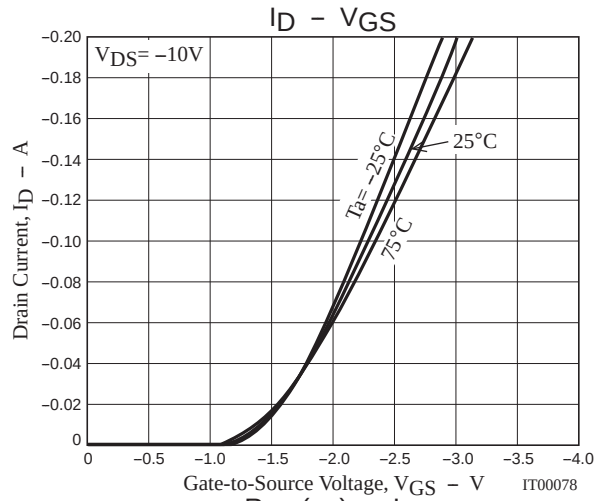
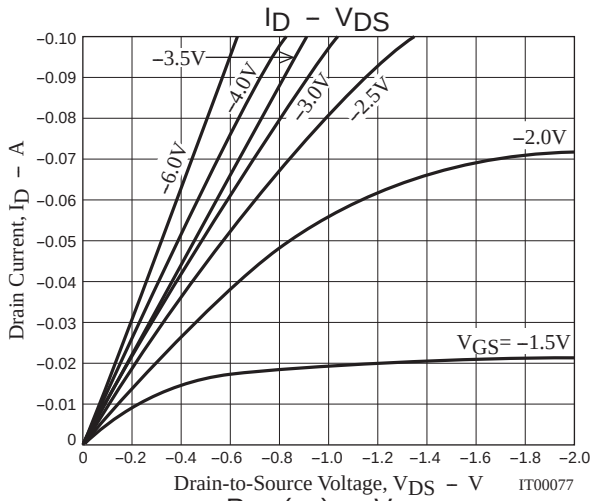
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1mA, V_{GS} = 0V$	-30			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -30V, V_{GS} = 0V$			-1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 8V, V_{DS} = 0V$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -10V, I_D = -100\mu A$	-0.4		-1.4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -10V, I_D = -50mA$	80	110		mS
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = -50mA, V_{GS} = -4V$		8	10.4	Ω
	$R_{DS(on)2}$	$I_D = -30mA, V_{GS} = -2.5V$		11	15.4	Ω
	$R_{DS(on)3}$	$I_D = -1mA, V_{GS} = -1.5V$		27	54	Ω
Input Capacitance	C_{iss}	$V_{DS} = -10V, f = 1MHz$		7.5		pF
Output Capacitance	C_{oss}			5.7		pF
Reverse Transfer Capacitance	C_{rss}			1.8		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		24		ns
Rise Time	t_r			55		ns
Turn-OFF Delay Time	$t_d(off)$			120		ns
Fall Time	t_f			130		ns
Total Gate Charge	Q_g	$V_{DS} = -10V, V_{GS} = -10V, I_D = -100mA$		1.43		nC
Gate-to-Source Charge	Q_{gs}			0.18		nC
Gate-to-Drain "Miller" Charge	Q_{gd}			0.25		nC
Diode Forward Voltage	V_{SD}	$I_S = -100mA, V_{GS} = 0V$		-0.83	-1.2	V

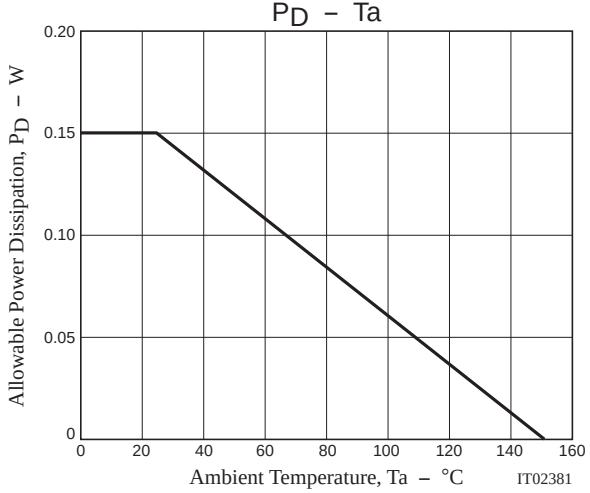
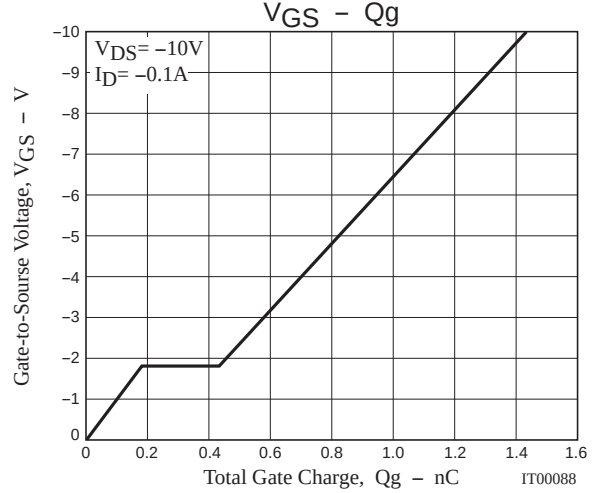
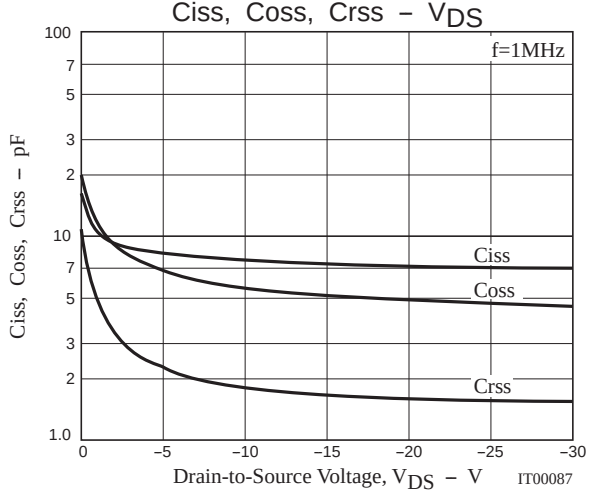
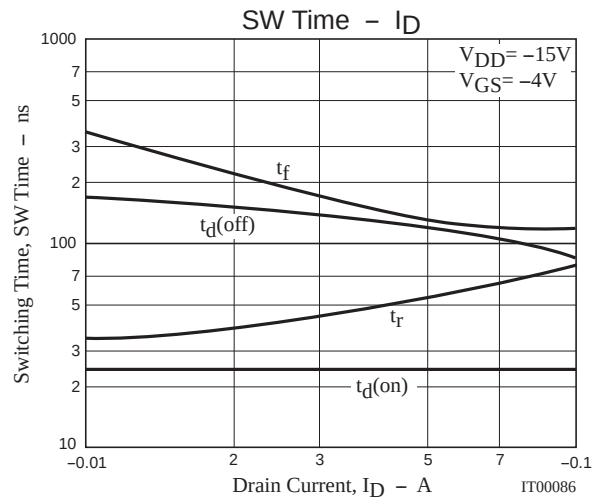
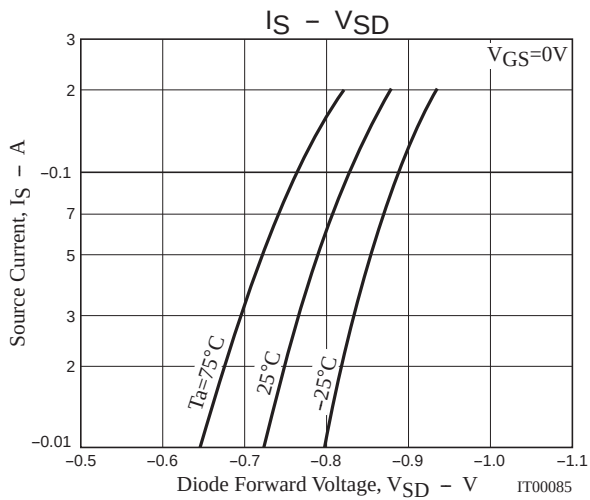
Switching Time Test Circuit



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





Embossed Taping Specification

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

1. Packing Format

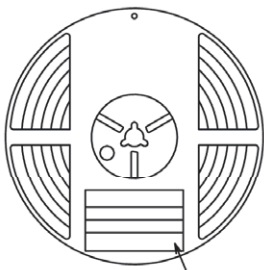
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
SSFP	SSFP	8,000	40,000	240,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

Reel label, Inner box label
(unit:mm)

Outer box label

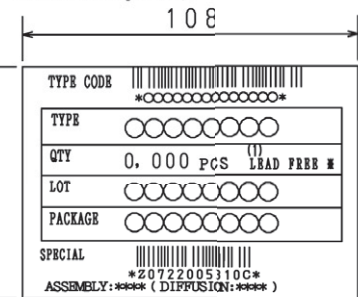
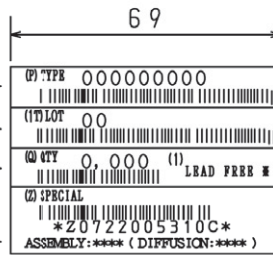
It is a label at the time of factory shipments.
The form of a label may change in physical distribution process.

Packing method



Reel label

Type No.
LOT No.
Quantity
Origin



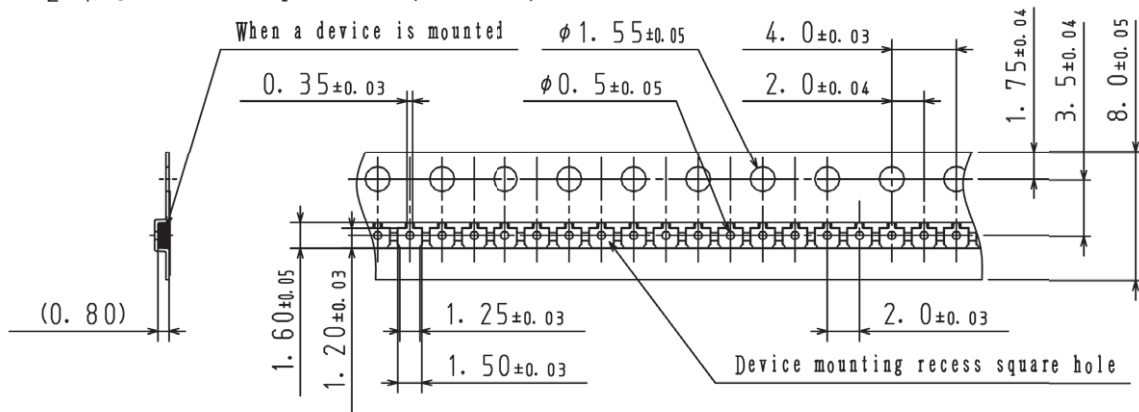
NOTE (1)

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

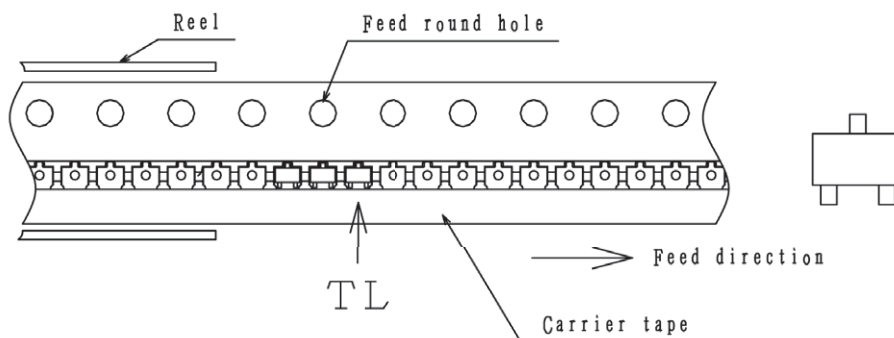
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



2-2. Device placement direction

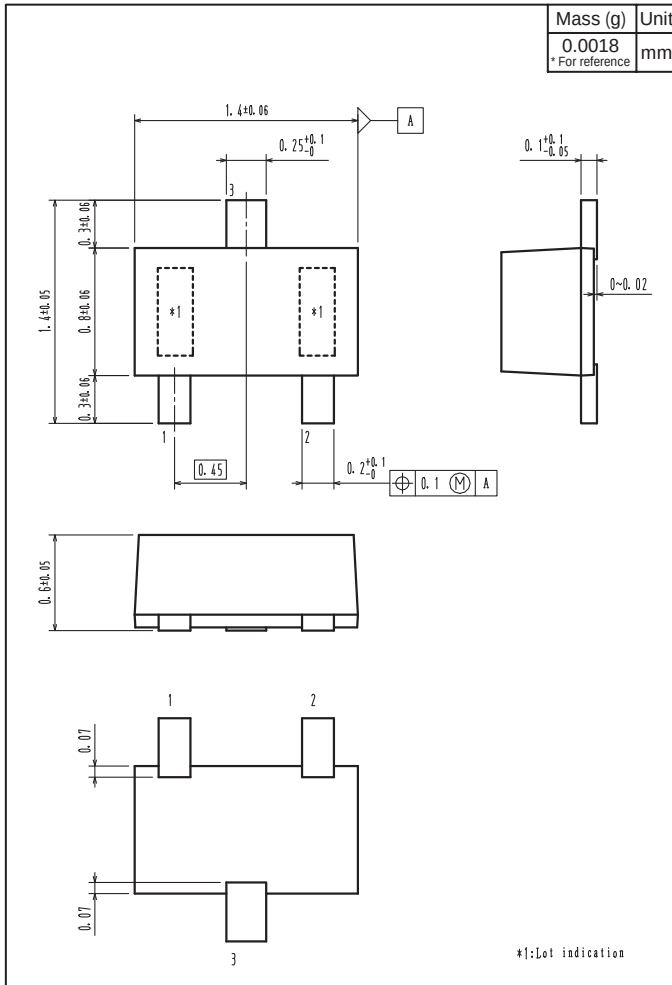


Those with pin 1 index on the feed hole side.....TL

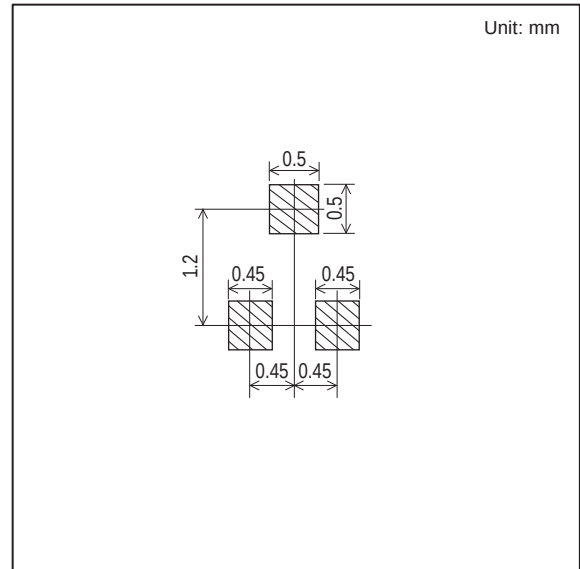
3LP01SS

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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