



5LP01S

P-Channel Small Signal MOSFET -50V, -0.07A, 23Ω, Single SMCP

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 _{DSS}		-50	V
Gate-to-Source Voltage	V _{GSS}		±10	V
Drain Current (DC)	I _D		-0.07	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	-0.28	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.

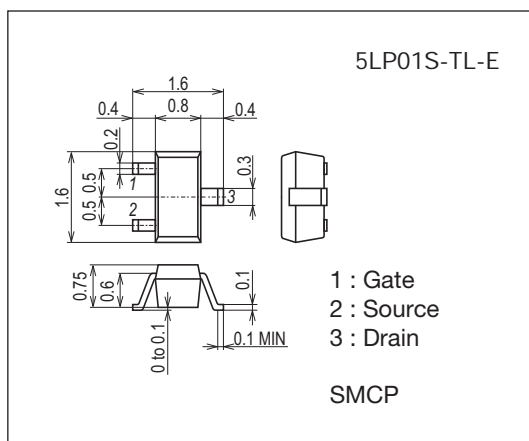
* Machine Model

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)

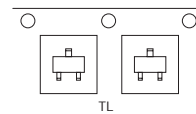
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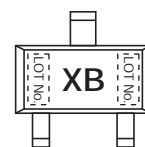
Product & Package Information

- Package : SMCP
- JEITA, JEDEC : SC-75, SOT-416
- Minimum Packing Quantity : 3,000 pcs./reel

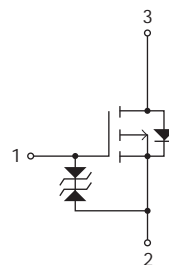
Packing Type: TL



Marking



Electrical Connection

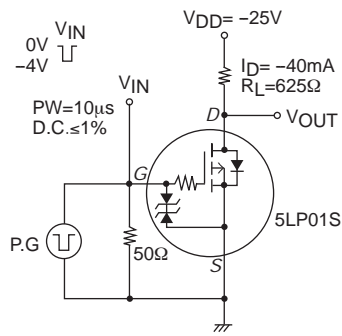


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Electrical Characteristics at Ta=25°C

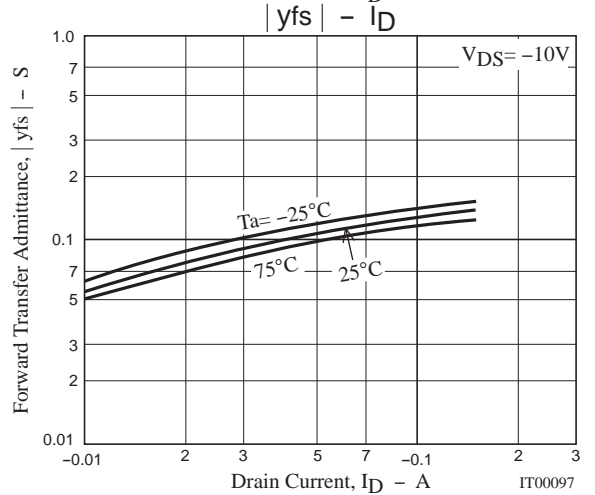
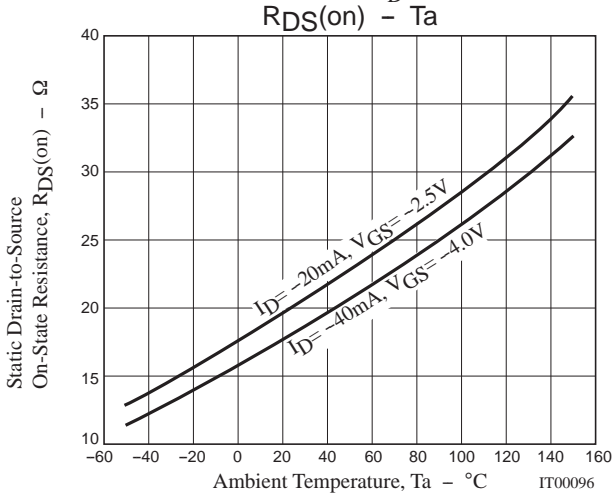
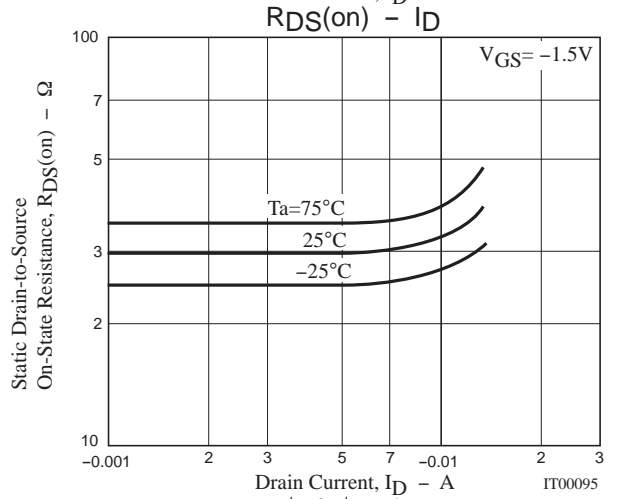
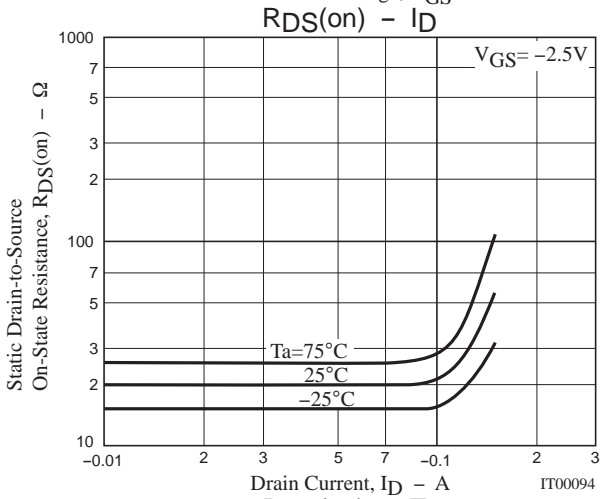
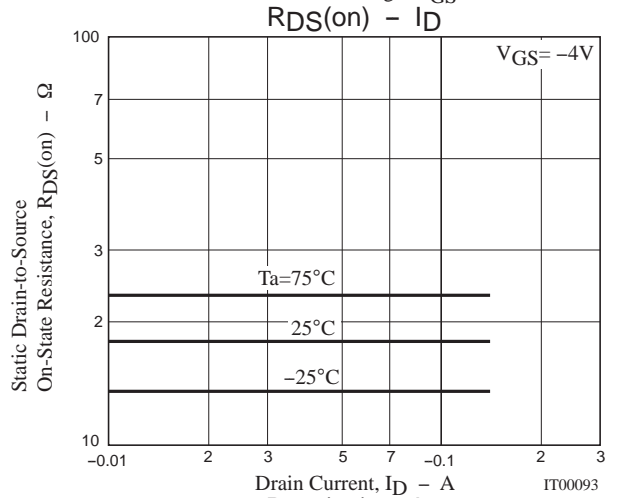
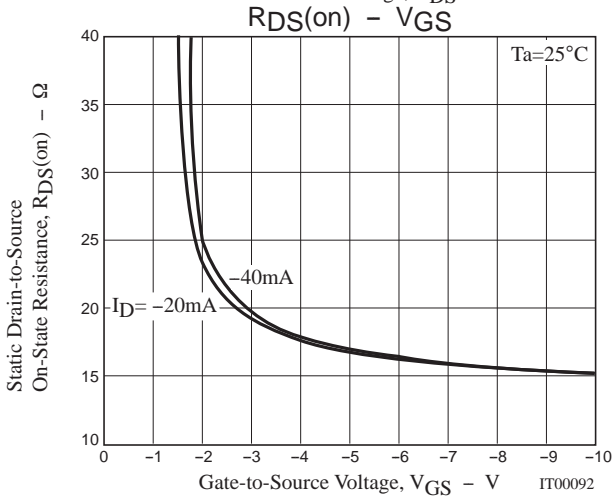
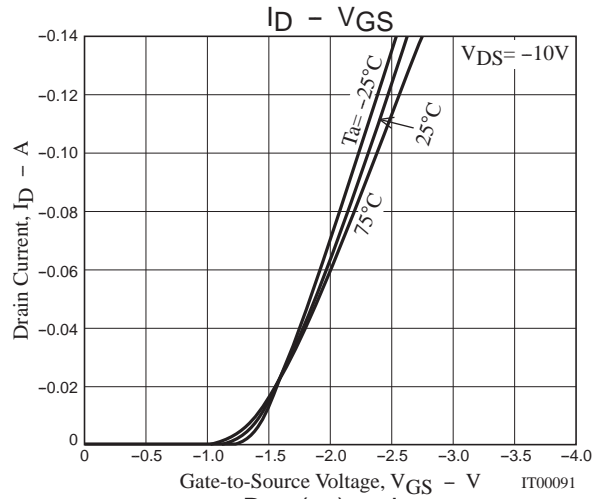
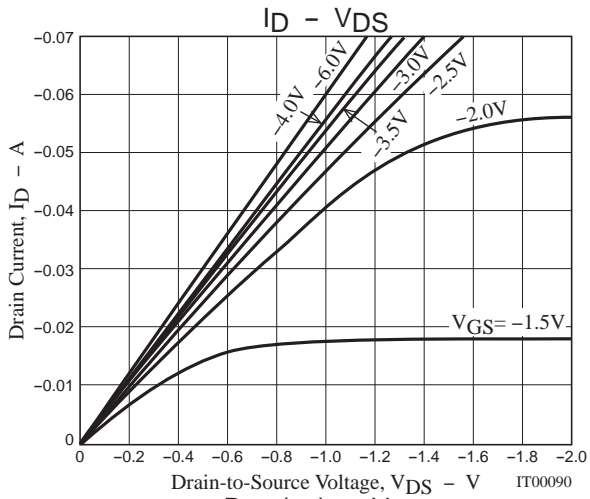
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V(BR)DSS	I _D = -1mA, V _{GS} =0V	-50			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} = -50V, V _{GS} =0V			-1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±8V, V _{DS} =0V			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} = -10V, I _D = -100μA	-0.4		-1.4	V
Forward Transfer Admittance	y _{fs}	V _{DS} = -10V, I _D = -40mA	70	100		mS
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D = -40mA, V _{GS} = -4V		18	23	Ω
	R _{DS(on)2}	I _D = -20mA, V _{GS} = -2.5V		20	28	Ω
	R _{DS(on)3}	I _D = -5mA, V _{GS} = -1.5V		30	60	Ω
Input Capacitance	C _{iss}			7.4		pF
Output Capacitance	C _{oss}	V _{DS} = -10V, f=1MHz		4.2		pF
Reverse Transfer Capacitance	C _{rss}			1.3		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit.		20		ns
Rise Time	t _r			35		ns
Turn-OFF Delay Time	t _{d(off)}			160		ns
Fall Time	t _f			150		ns
Total Gate Charge	Q _g				1.40	
Gate-to-Source Charge	Q _{gs}	V _{DS} = -10V, V _{GS} = -10V, I _D = -70mA		0.16		nC
Gate-to-Drain "Miller" Charge	Q _{gd}			0.23		nC
Diode Forward Voltage	V _{SD}	I _S = -70mA, V _{GS} =0V		-0.85	-1.2	V

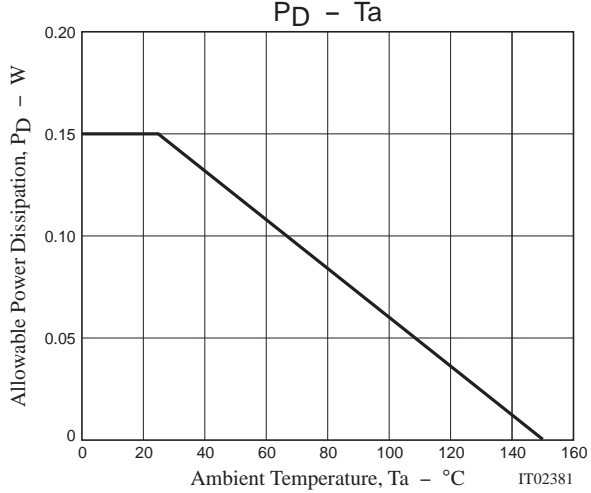
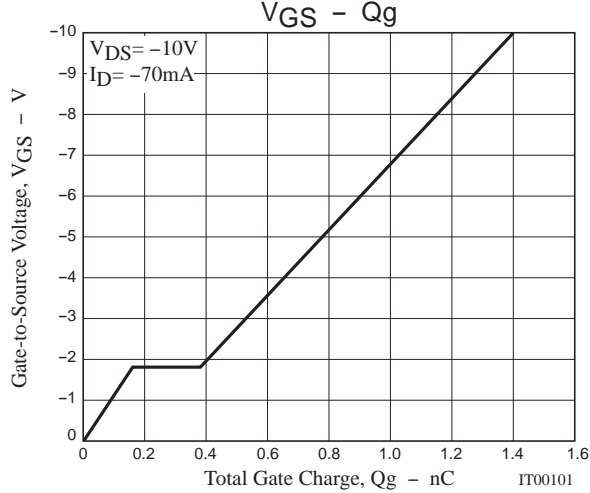
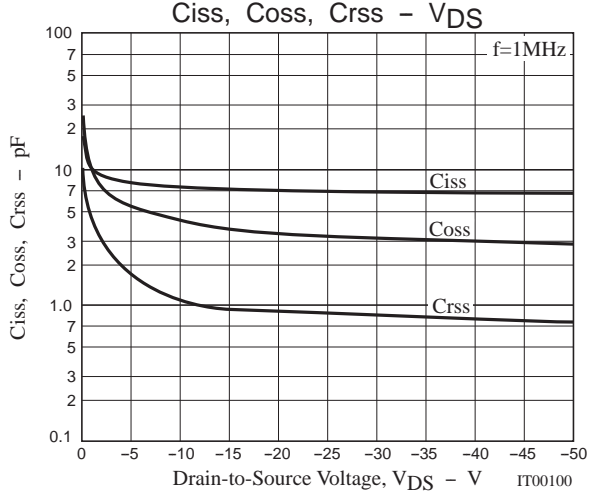
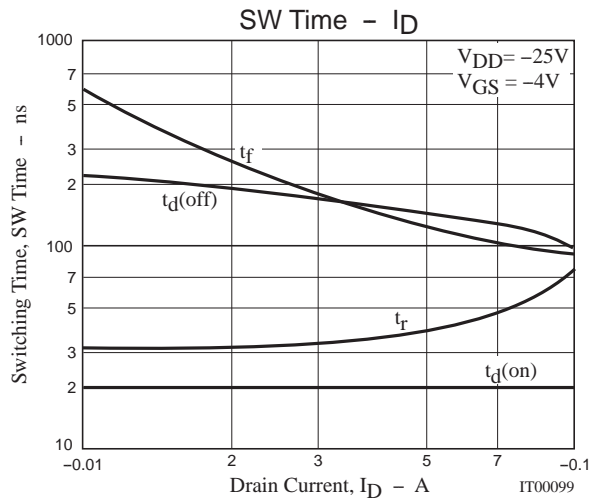
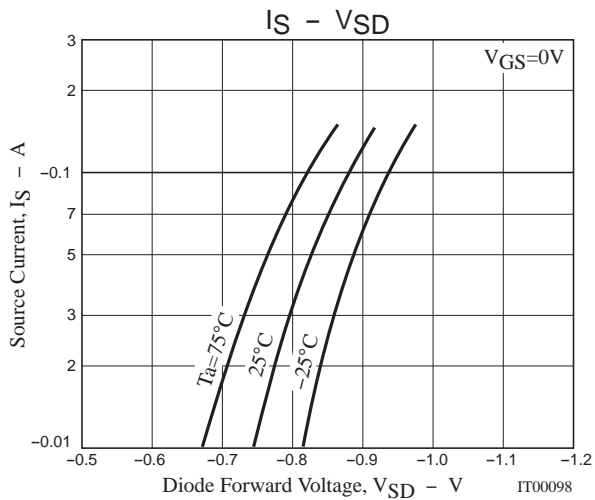
Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
5LP01S-TL-E	SMCP	3,000pcs./reel	Pb Free





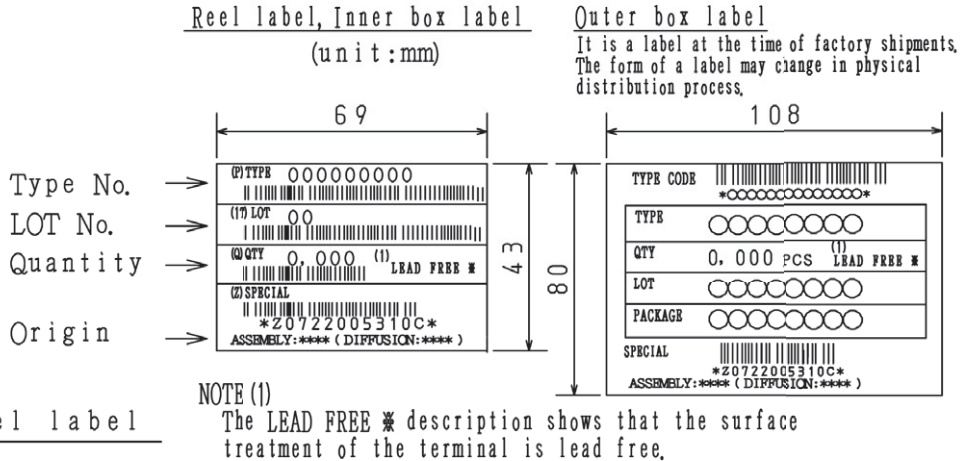
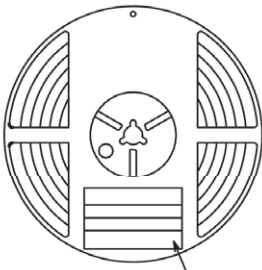
Embossed Taping Specification

5LP01S-TL-E

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)
SMCP	SMCP	3,000	15,000	90,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

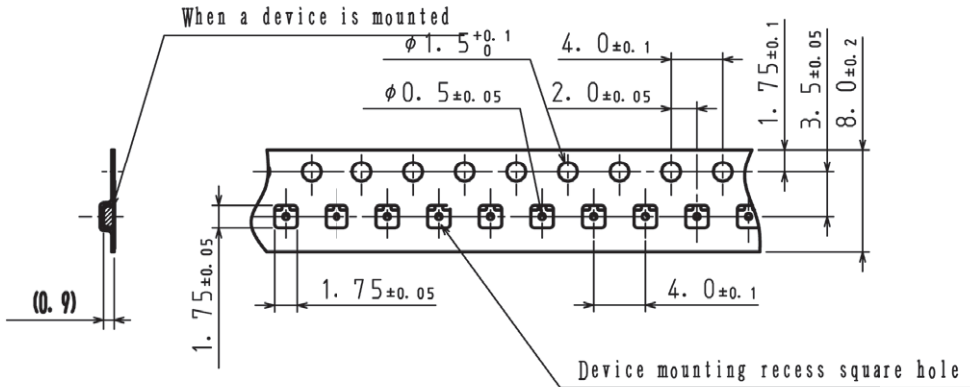
Packing method



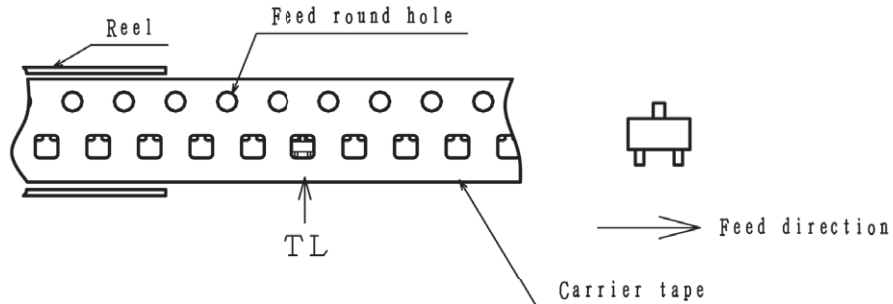
Label	JEITA Phase
.....	JEITA Phase 3

2. Taping configuration

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



2-2. Device placement direction

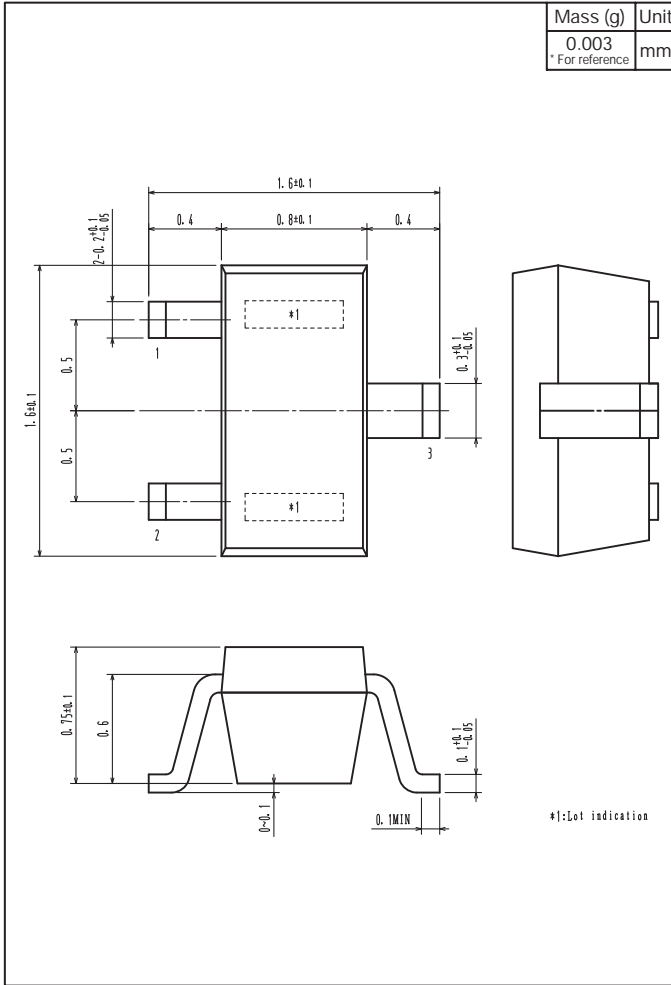


Those with one electrode terminal on the feed hole side.....TL

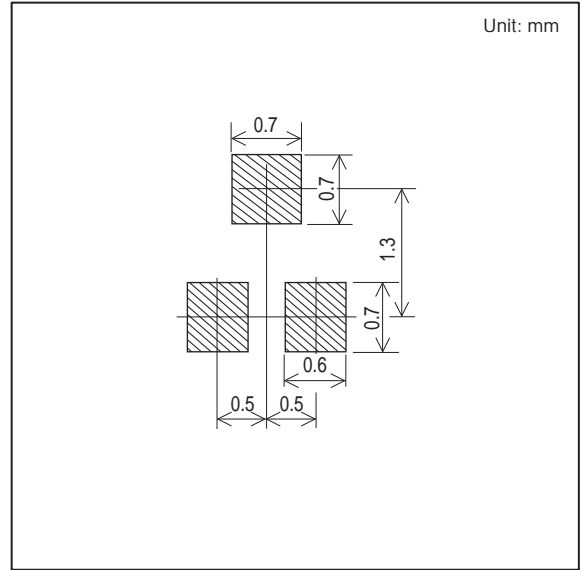
5LP01S

Outline Drawing

5LP01S-TL-E



Land Pattern Example



Note on usage : Since the 5LP01S is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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