



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

5LP01S — P-Channel Silicon MOSFET General-Purpose Switching Device Applications

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

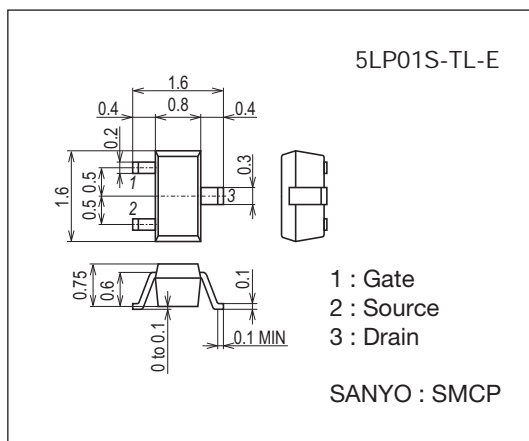
This product is designed to "ESD immunity < 200V**", so please take care when handling.

* Machine Model

Package Dimensions

unit : mm (typ)

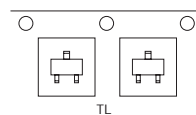
7027-004



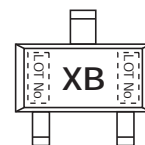
Product & Package Information

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

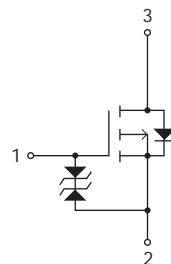
Packing Type: TL



Marking



Electrical Connection

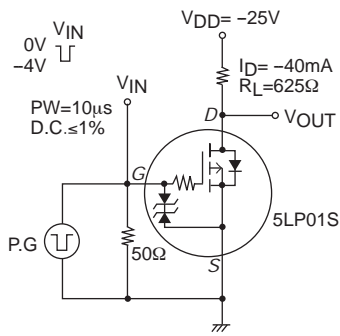


5LP01S

Electrical Characteristics at Ta=25°C

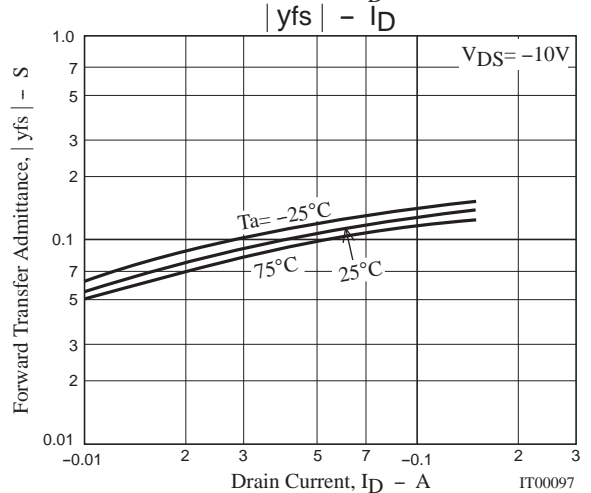
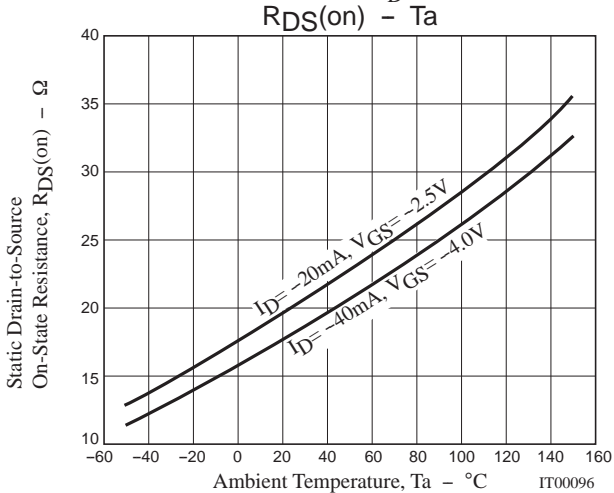
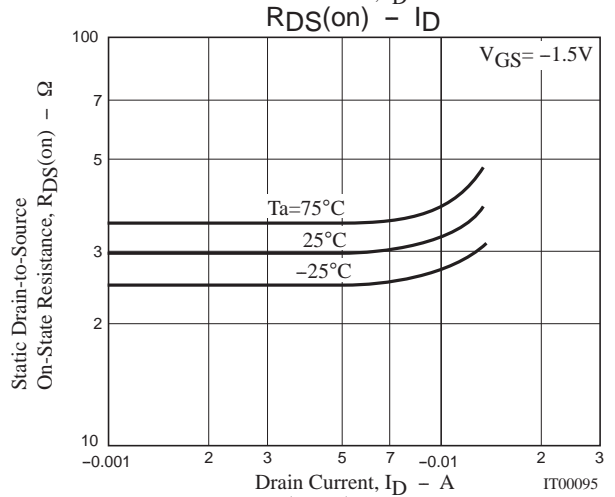
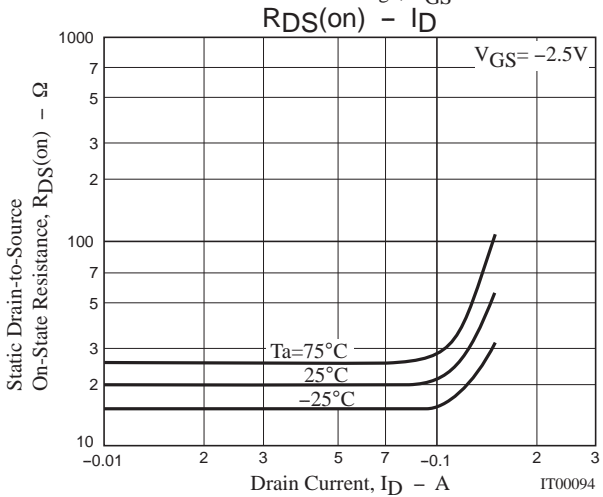
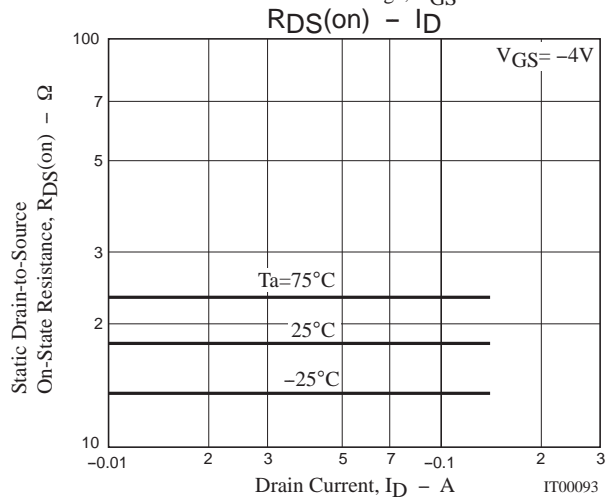
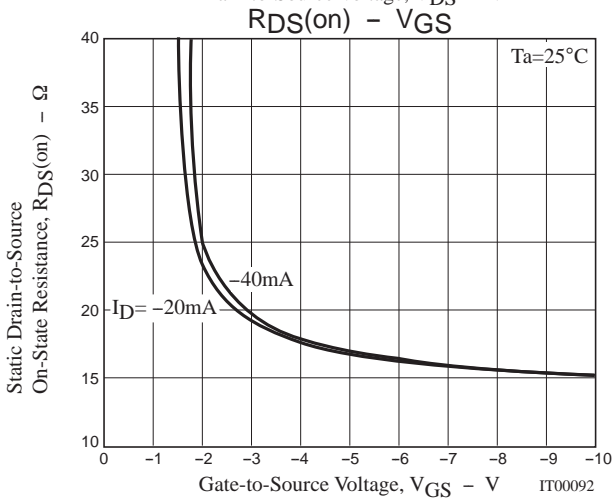
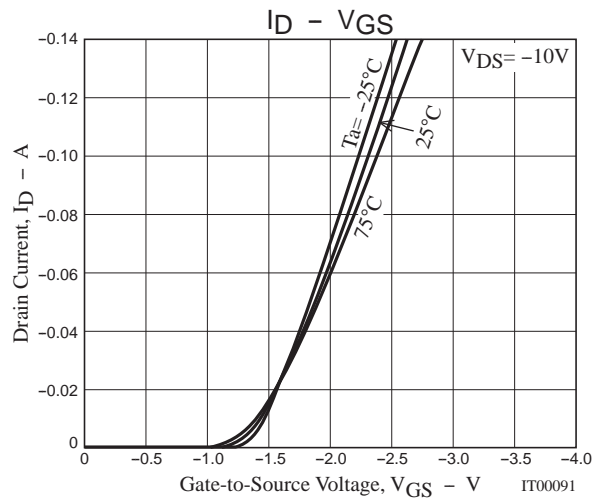
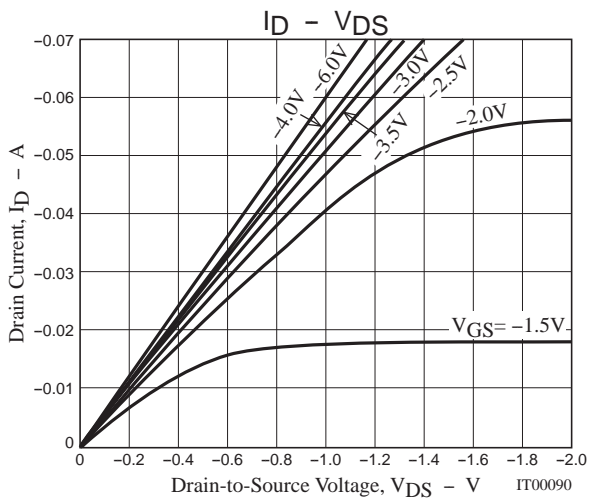
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V(BR)DSS	I _D = -1mA, V _{GS} =0V	-50			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} = -50V, V _{GS} =0V			-1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±8V, V _{DS} =0V			±10	μA
Cutoff Voltage	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

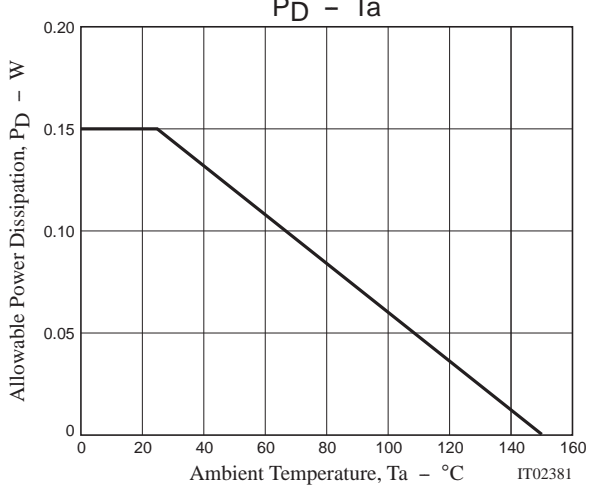
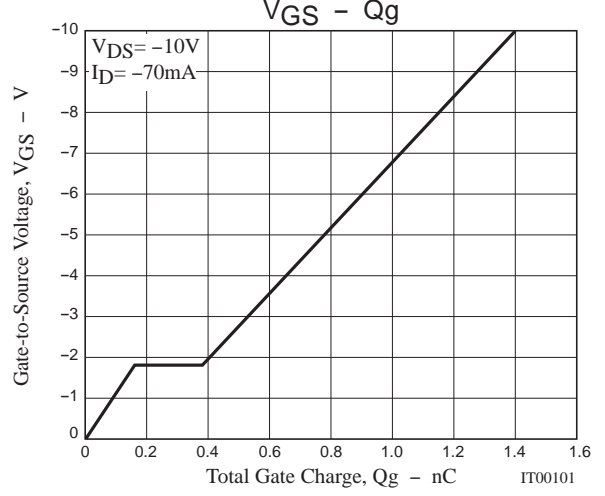
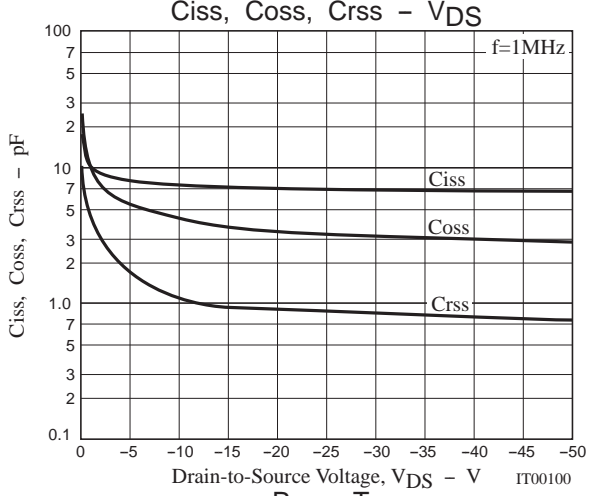
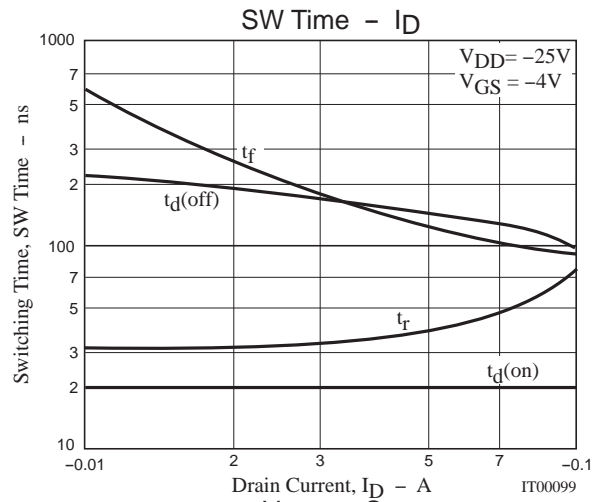
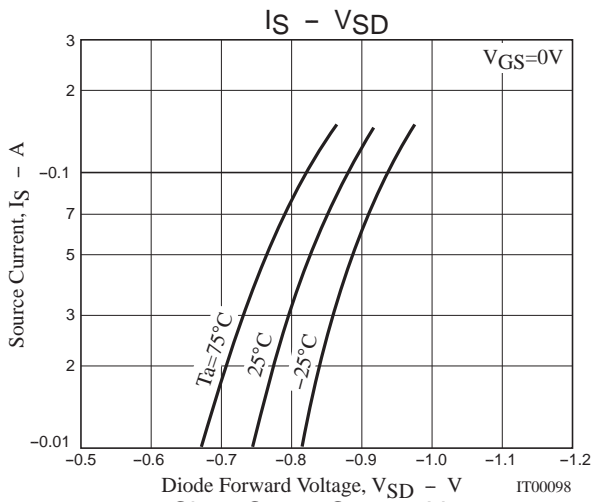
Switching Time Test Circuit



Ordering Information

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





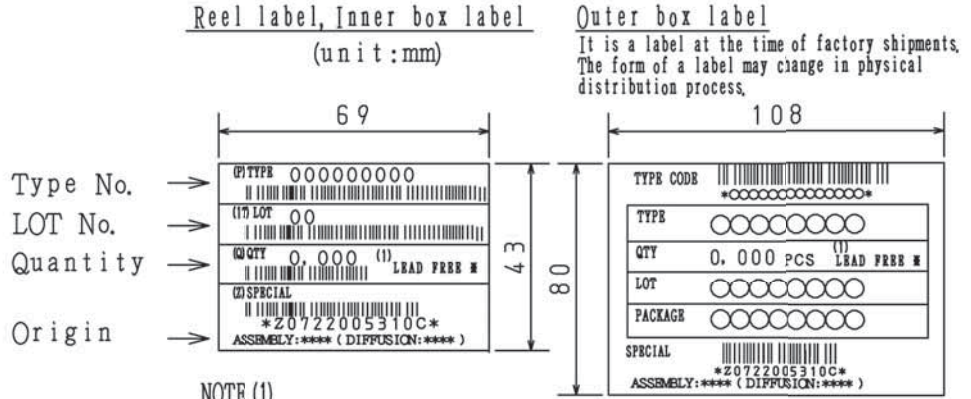
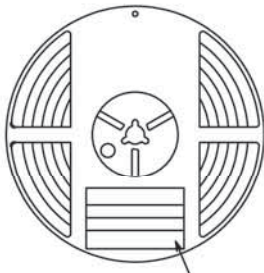
Embossed Taping Specification

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

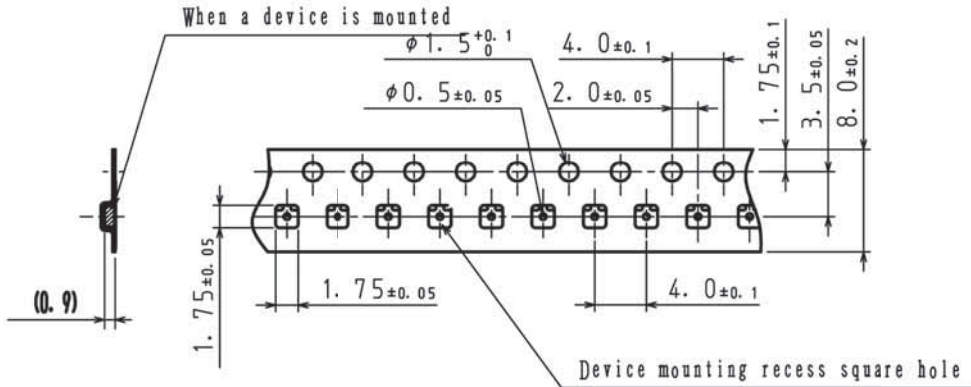


NOTE (1)
The LEAD FREE # description shows that the surface treatment of the terminal is lead free.

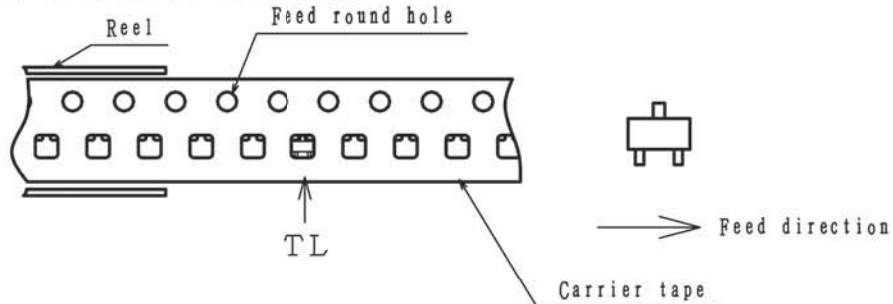
Label	JEITA Phase
.....	JEITA Phase 3

2. Taping configuration

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



2-2. Device placement direction

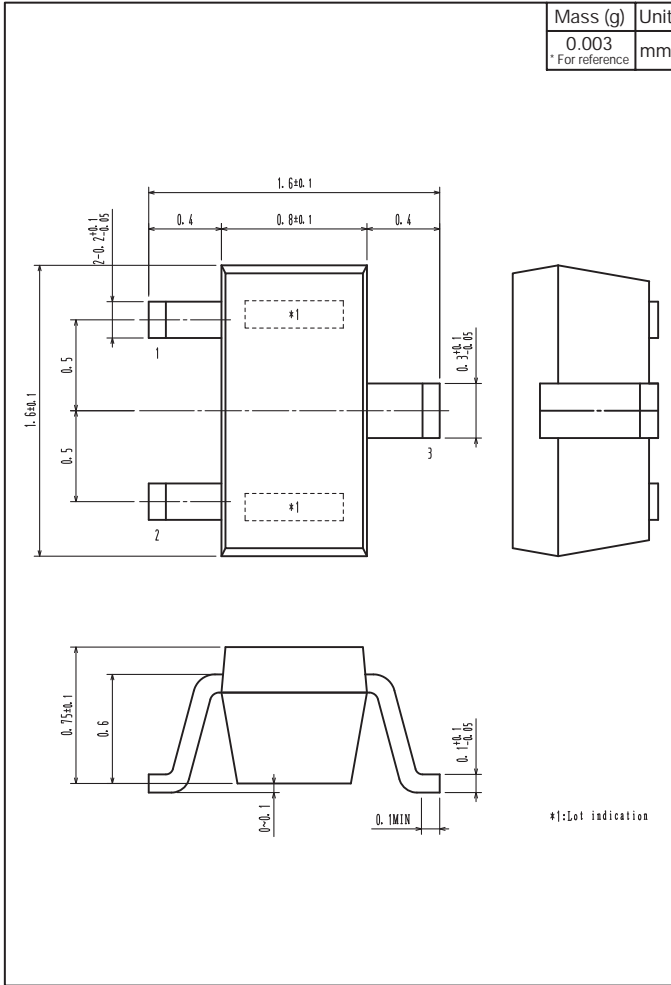


Those with one electrode terminal on the feed hole side.....TL

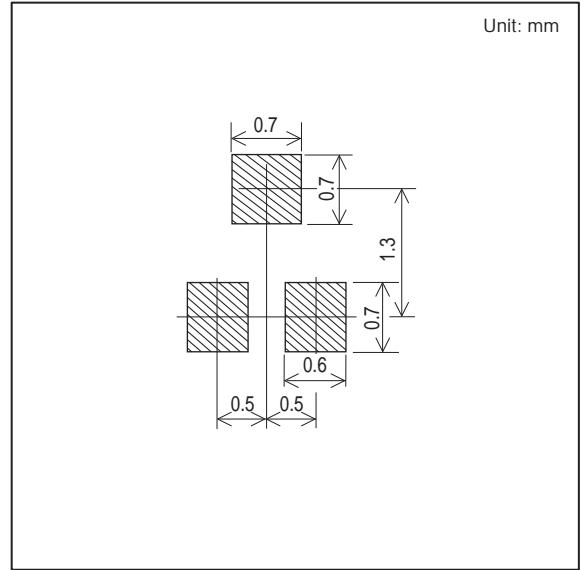
5LP01S

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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