

5LN01S — N-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	VDSS		50	V
Gate-to-Source Voltage	VGSS		±10	V
Drain Current (DC)	ID		0.1	A
Drain Current (Pulse)	IDP	PW≤10μs, duty cycle≤1%	0.4	A
Allowable Power Dissipation	PD		0.15	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C

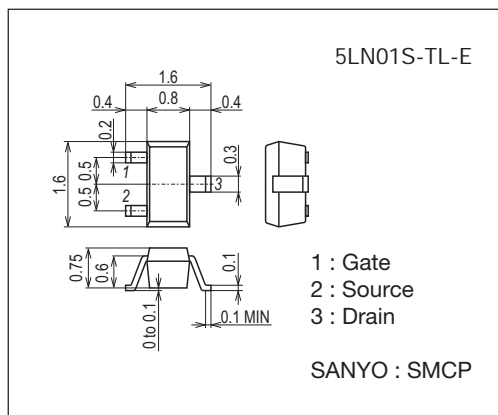
This product is designed to "ESD immunity < 200V"", so please take care when handling.

* Machine Model

Package Dimensions

unit : mm (typ)

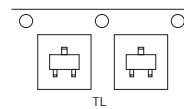
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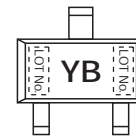
Product & Package Information

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

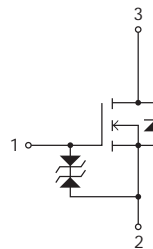
Packing Type: TL



Marking



Electrical Connection

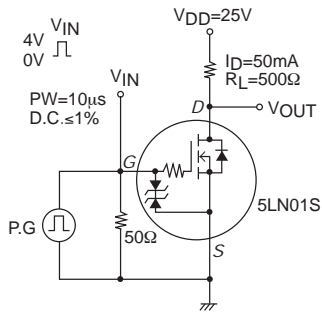


5LN01S

Electrical Characteristics at Ta=25°C

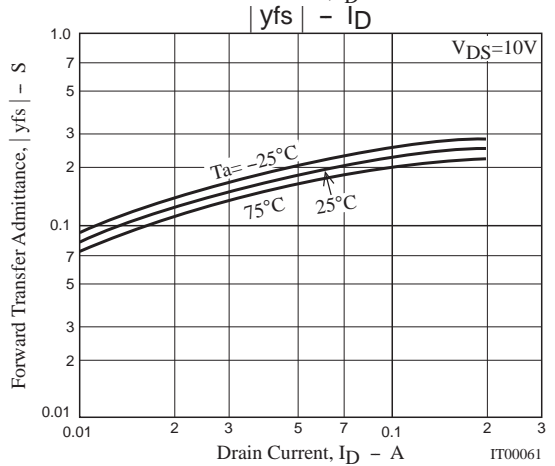
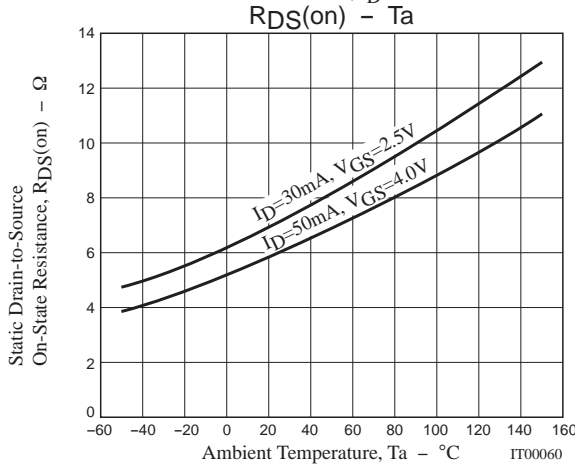
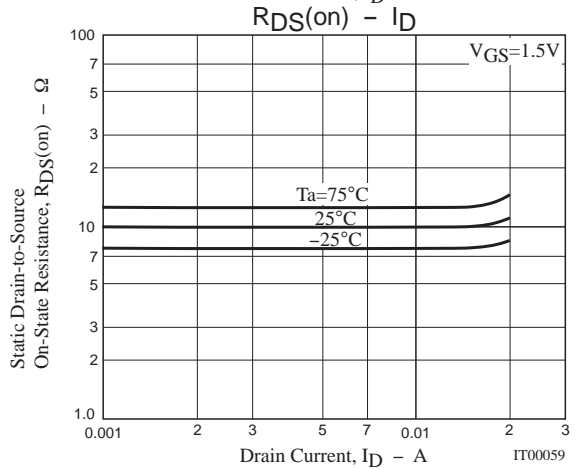
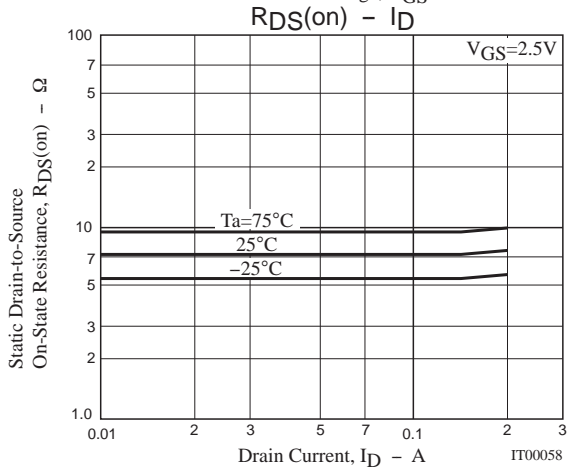
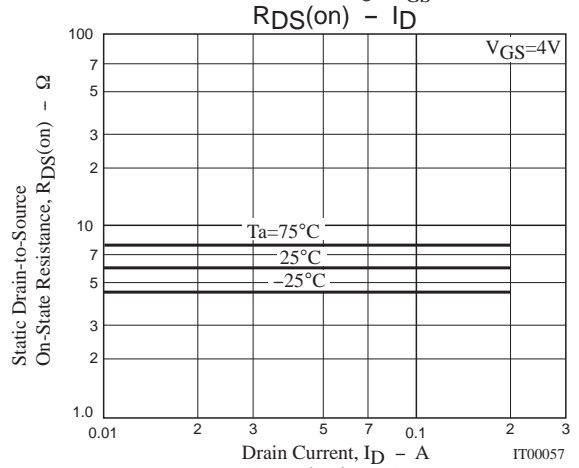
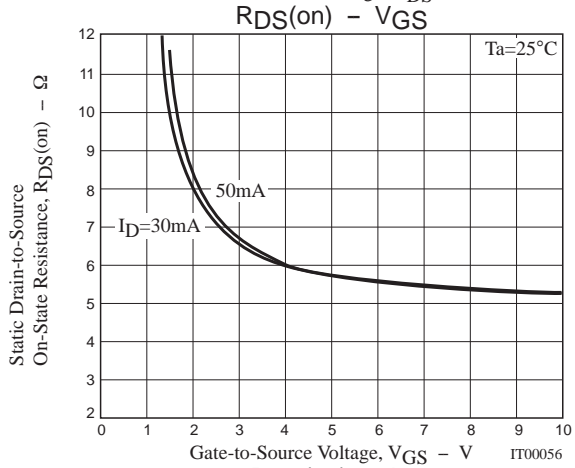
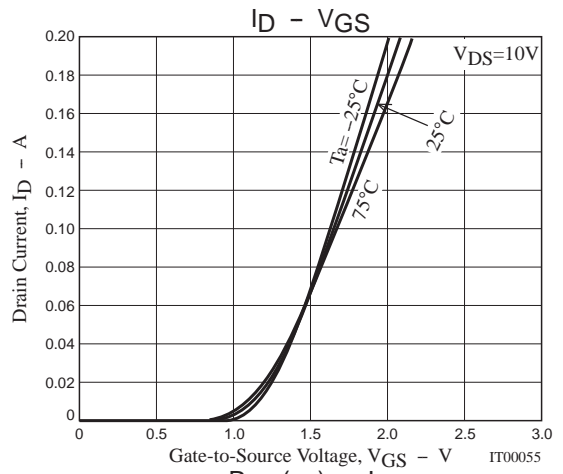
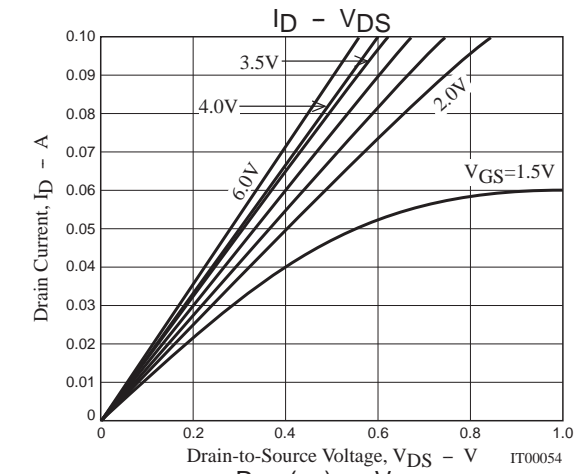
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0V$	50			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=50V, V_{GS}=0V$			1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 8V, V_{DS}=0V$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=100\mu A$	0.4		1.3	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V, I_D=50mA$	0.13	0.18		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=50mA, V_{GS}=4V$		6	7.8	Ω
	$R_{DS(on)2}$	$I_D=30mA, V_{GS}=2.5V$		7.1	9.9	Ω
	$R_{DS(on)3}$	$I_D=10mA, V_{GS}=1.5V$		10	20	Ω
Input Capacitance	C_{iss}	$V_{DS}=10V, f=1MHz$		6.6		pF
Output Capacitance	C_{oss}			4.7		pF
Reverse Transfer Capacitance	C_{rss}			1.7		pF
Turn-ON Delay Time	$t_d(on)$		See specified Test Circuit.		18	
Rise Time	t_r			42		ns
Turn-OFF Delay Time	$t_d(off)$			190		ns
Fall Time	t_f			105		ns
Total Gate Charge	Q_g	$V_{DS}=10V, V_{GS}=10V, I_D=100mA$			1.57	
Gate-to-Source Charge	Q_{gs}			0.20		nC
Gate-to-Drain "Miller" Charge	Q_{gd}			0.32		nC
Diode Forward Voltage	V_{SD}	$I_S=100mA, V_{GS}=0V$		0.85	1.2	V

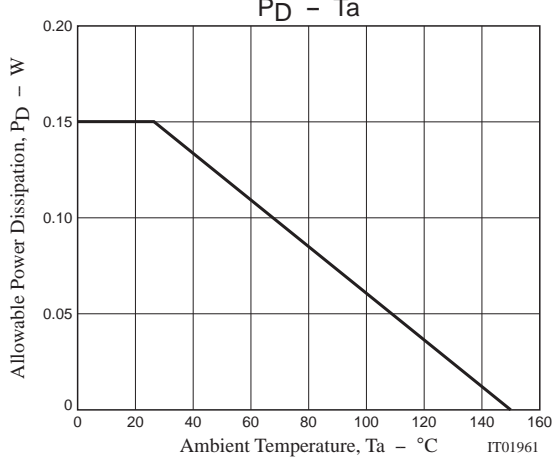
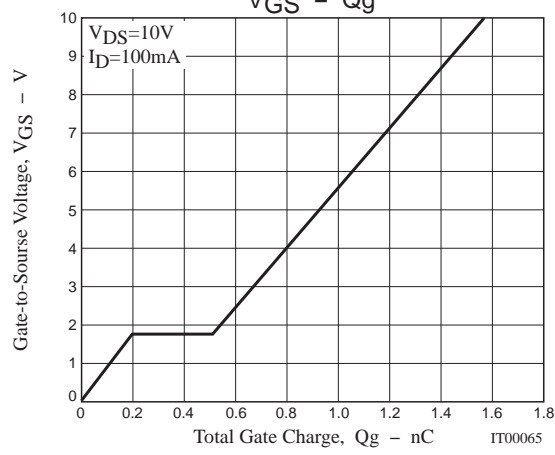
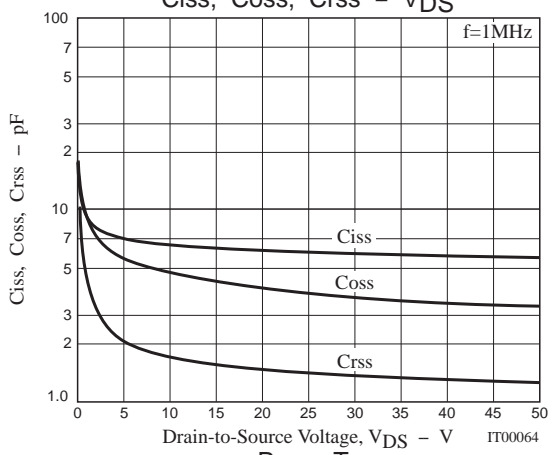
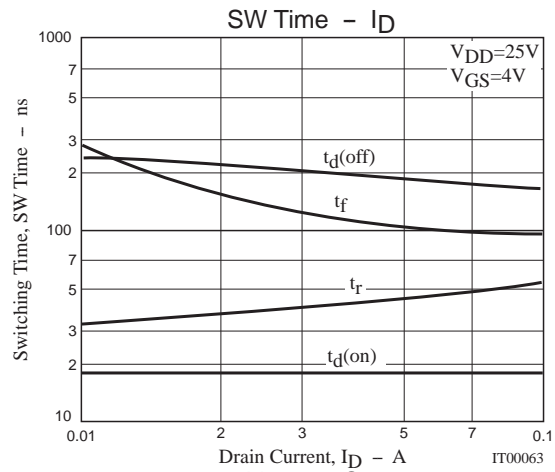
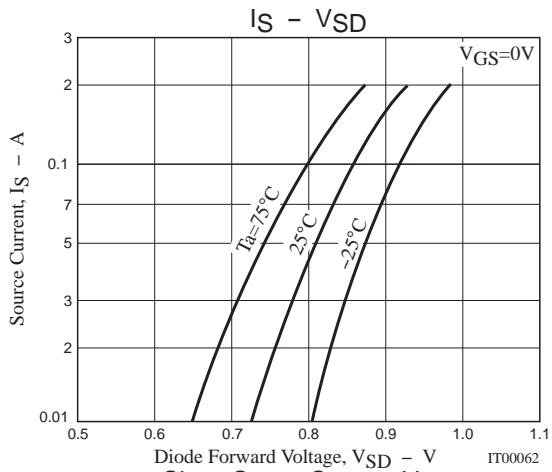
Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
5LN01S-TL-E	SMCP	3,000pcs./reel	Pb Free





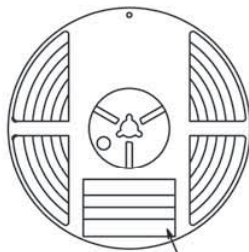
Embossed Taping Specification

5LN01S-TL-E

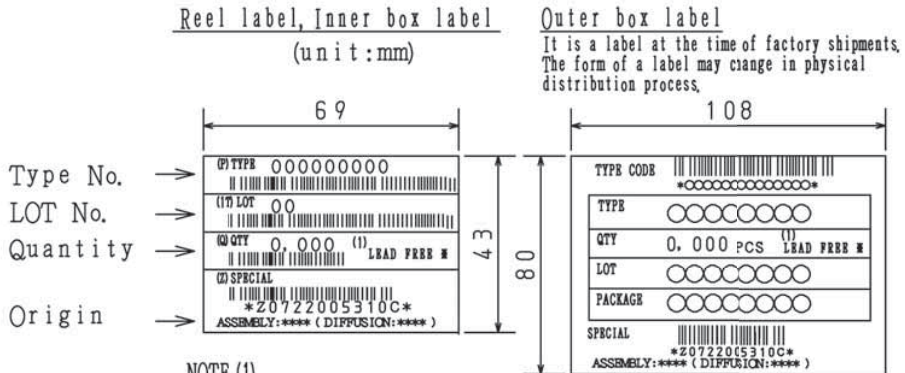
1. Packing Format

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



Reel label



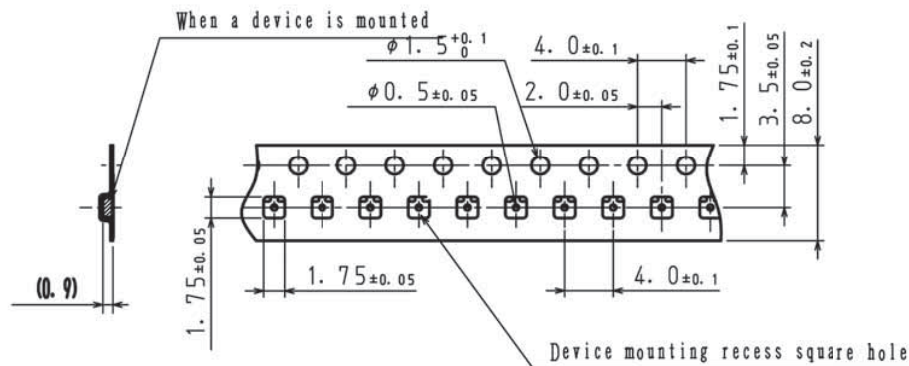
NOTE (1)

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

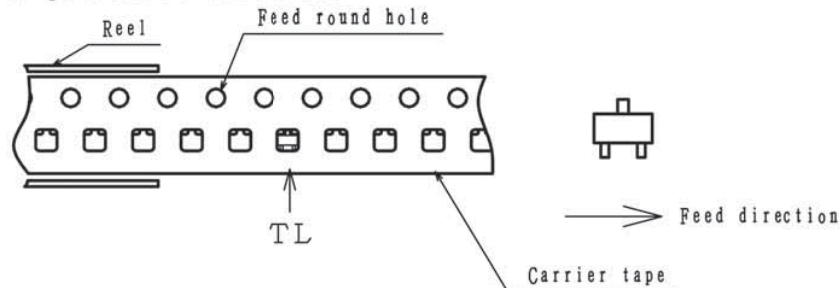
Label	JEITA Phase
.....	JEITA Phase 3

2. Taping configuration

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



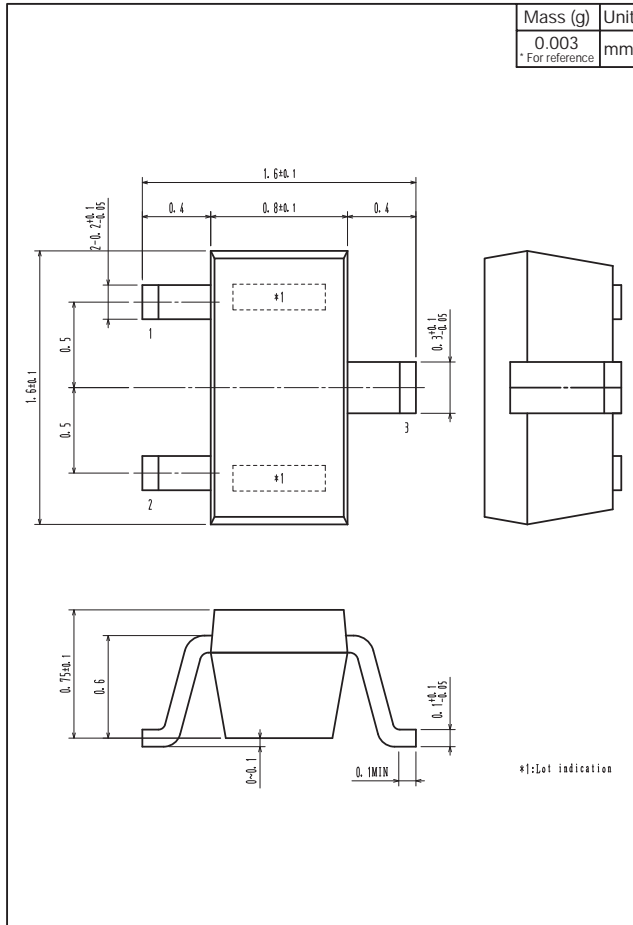
2-2. Device placement direction



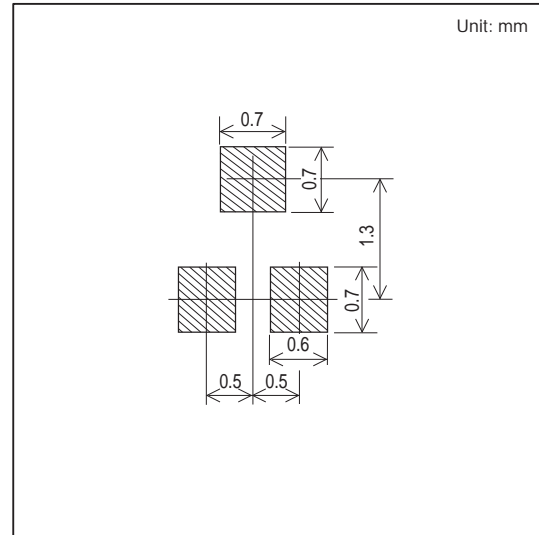
5LN01S

Outline Drawing

5LN01S-TL-E



Land Pattern Example



Note on usage : Since the 5LN01S is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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