



SANYO Semiconductors

# DATA SHEET

An ON Semiconductor Company

## MCH6601 — P-Channel Silicon MOSFET — General-Purpose Switching Device Applications

### Features

- Low ON-resistance
- Ultrahigh-speed switching
- 1.5V drive
- Composite type with 2 MOSFETs contained in a single package, facilitating high-density mounting

### 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>		-0.2	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-0.8	A
Allowable Power Dissipation	P <sub>D</sub>	When mounted on ceramic substrate (900mm <sup>2</sup> ×0.8mm) 1unit	0.8	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

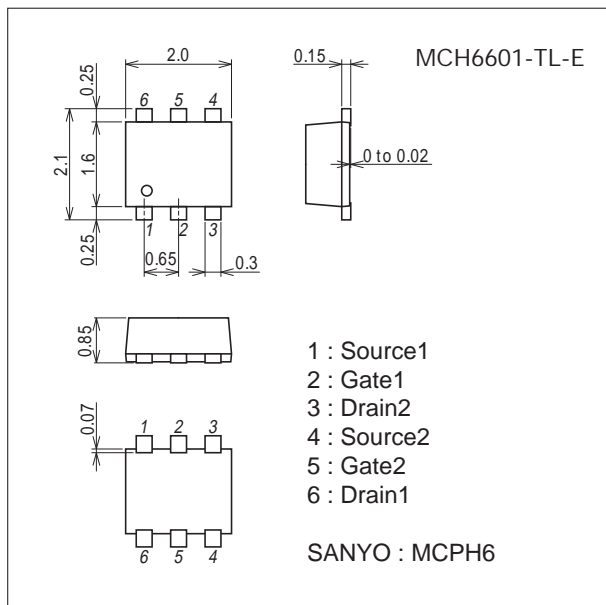
This product is designed to "ESD immunity < 200V\*\*", so please take care when handling.

\* Machine Model

### Package Dimensions

unit : mm (typ)

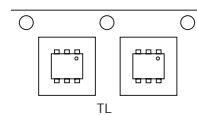
7022A-006



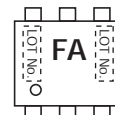
### Product & Package Information

- Package : MCPH6
- JEITA, JEDEC : SC-88, SC-70-6, SOT-363
- Minimum Packing Quantity : 3,000 pcs./reel

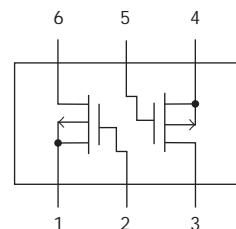
### Packing Type : TL



### Marking



### Electrical Connection

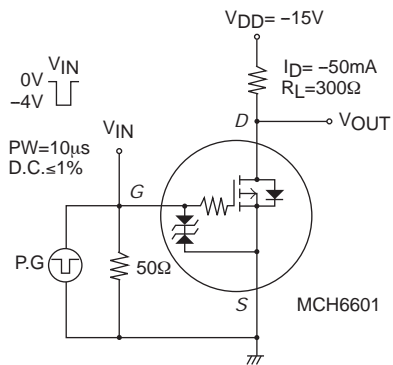


# MCH6601

## Electrical Characteristics at $T_a=25^\circ\text{C}$

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

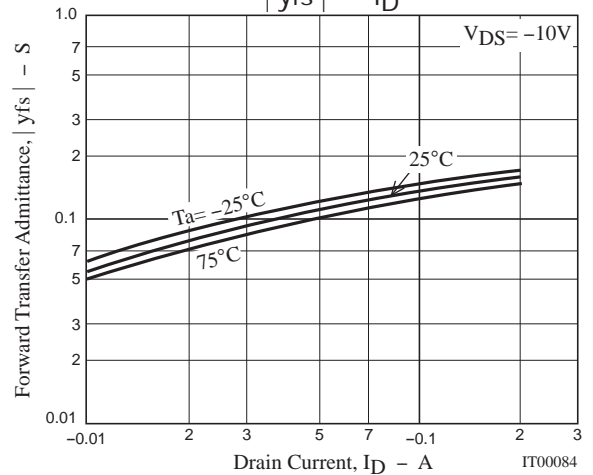
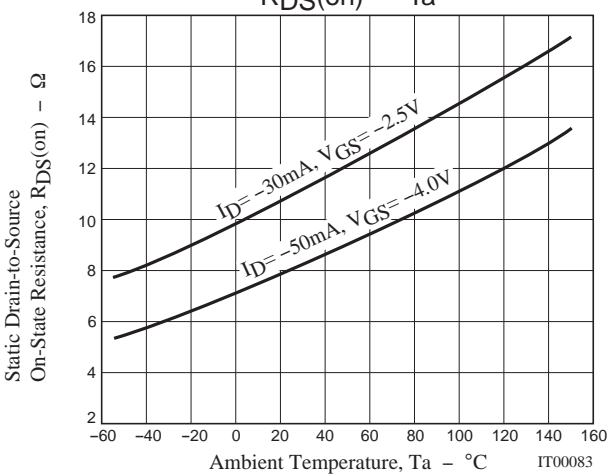
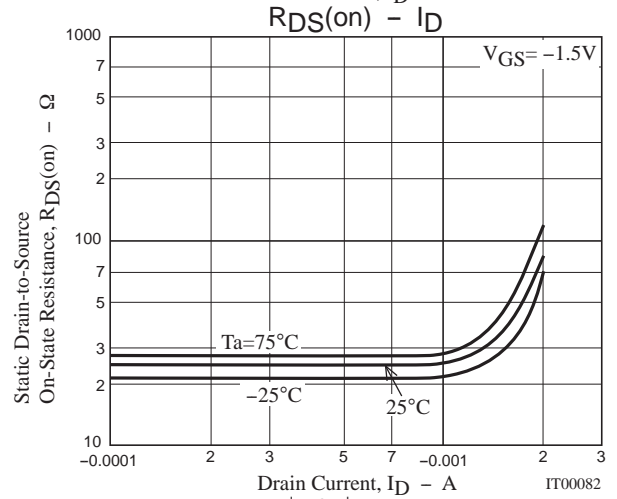
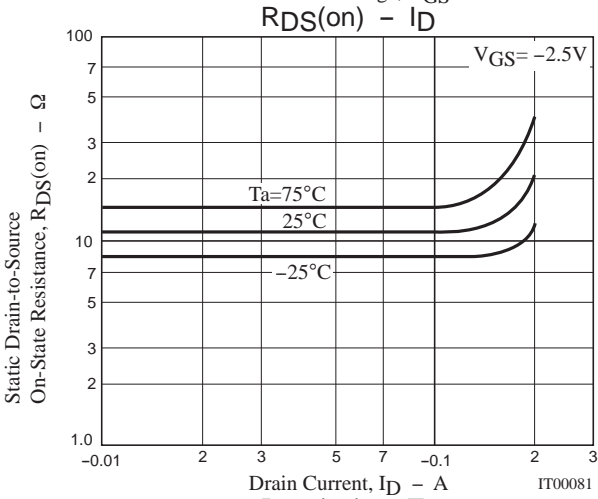
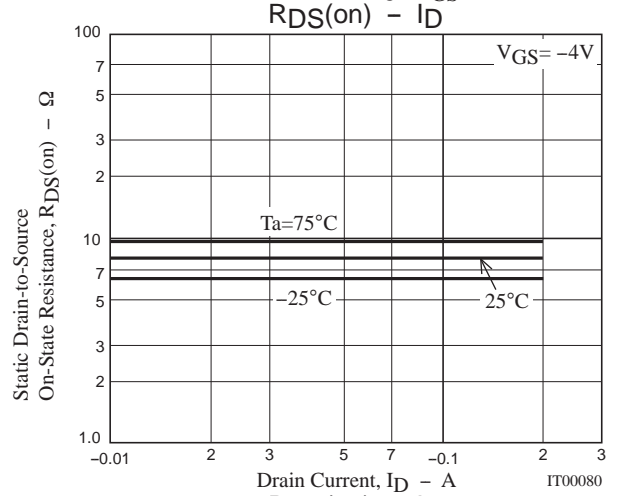
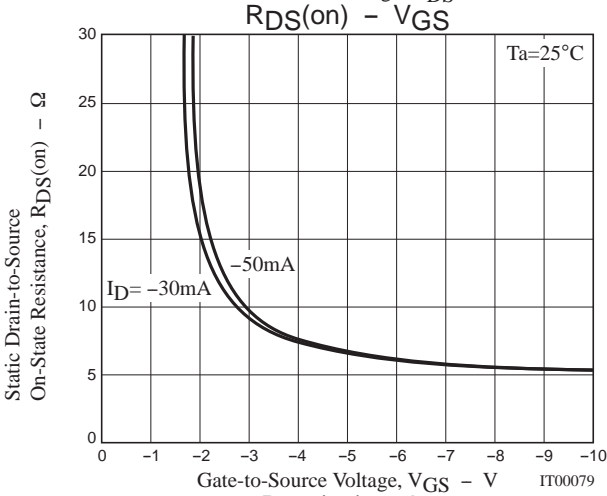
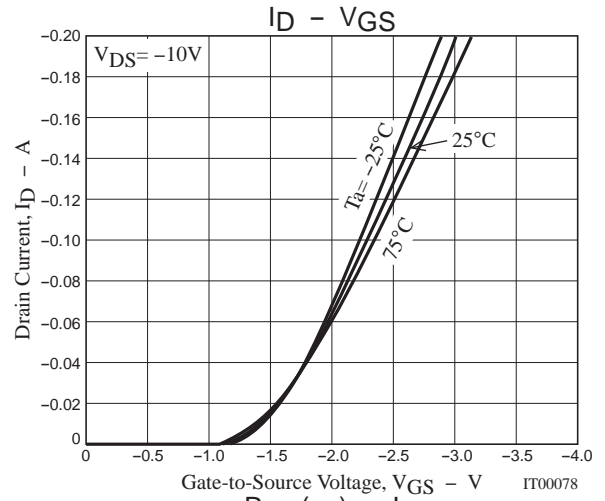
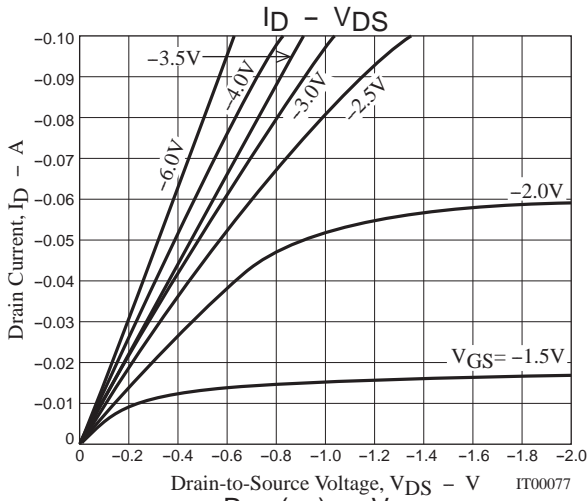
## Switching Time Test Circuit

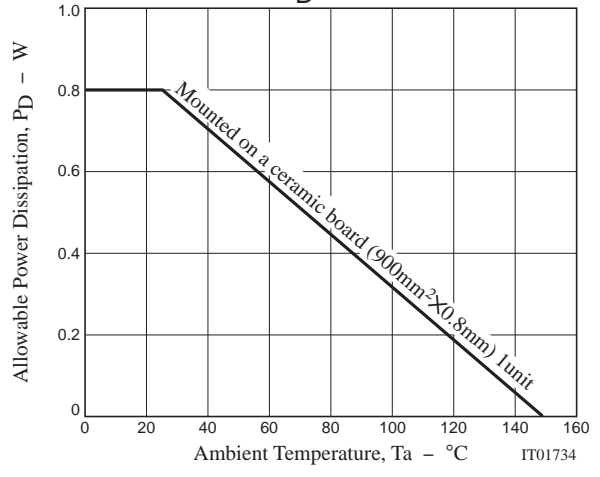
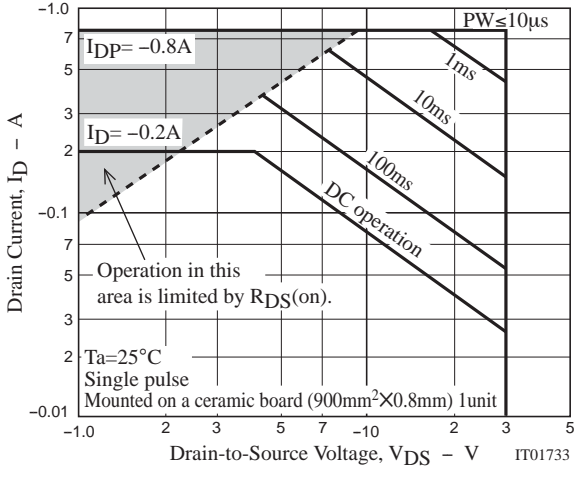
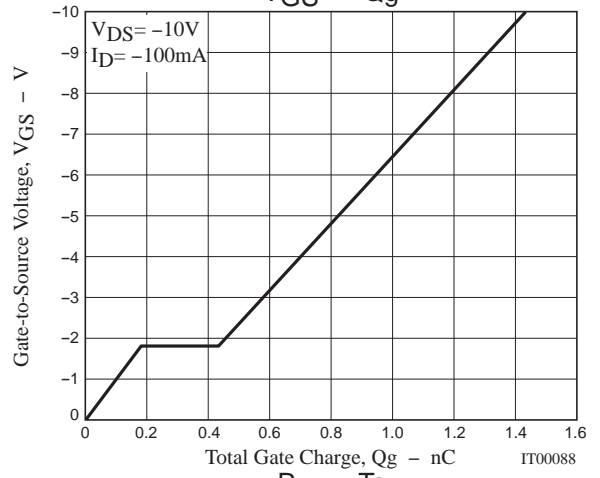
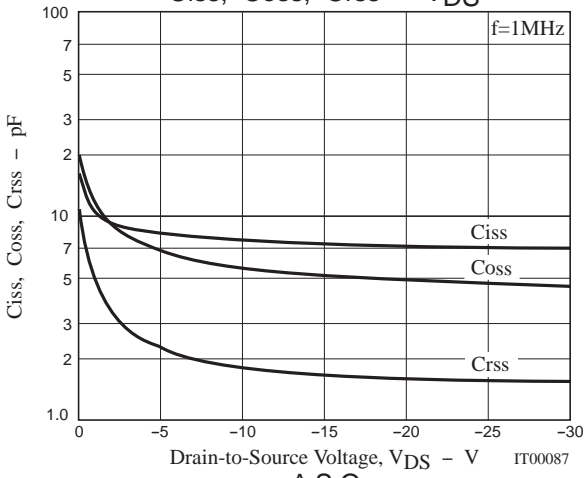
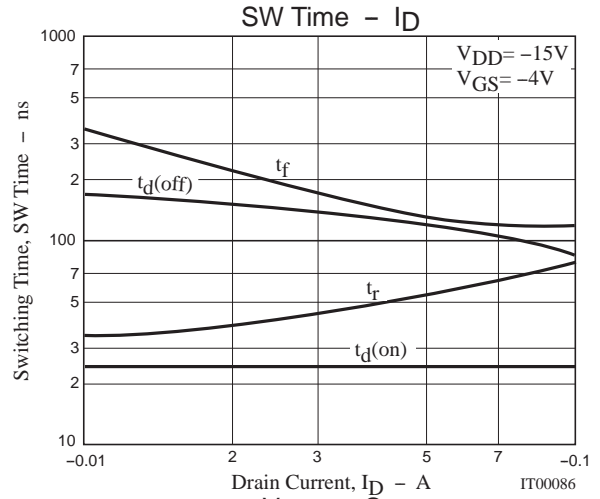
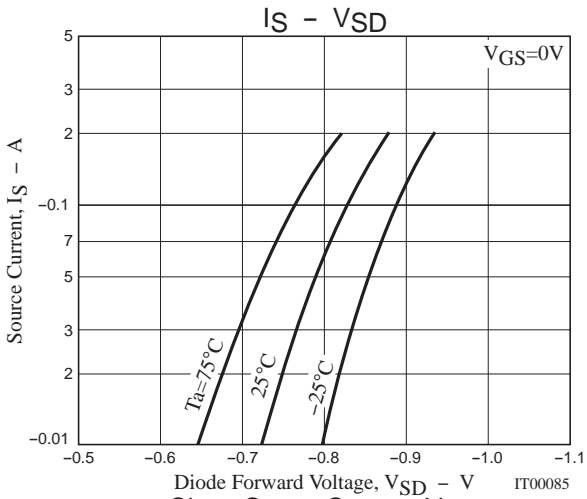


## Ordering Information

Device	Package	Shipping	memo
MCH6601-TL-E	MCPH6	3,000pcs./reel	Pb Free

# MCH6601





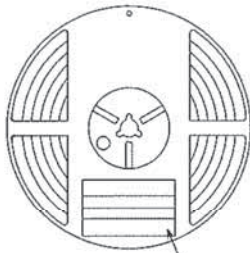
Taping Specification

MCH6601-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)
MCPH6	MCP4	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

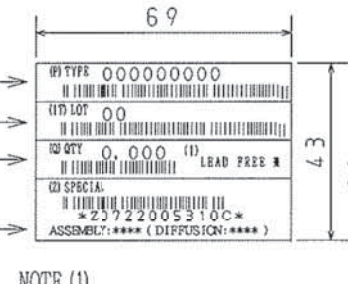
Packing method



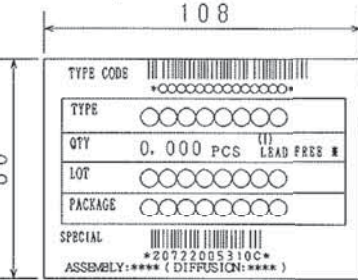
Type No.  
LOT No.  
Quantity  
Origin

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.



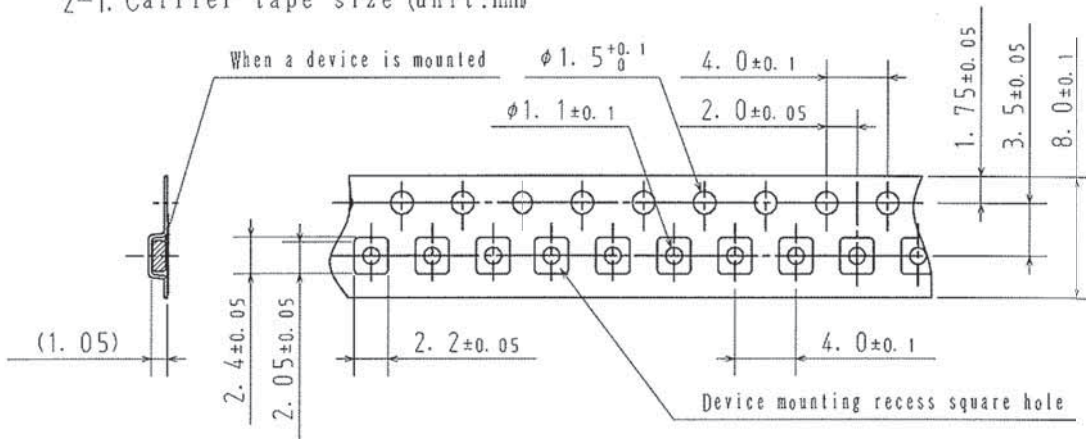
NOTE (1)

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

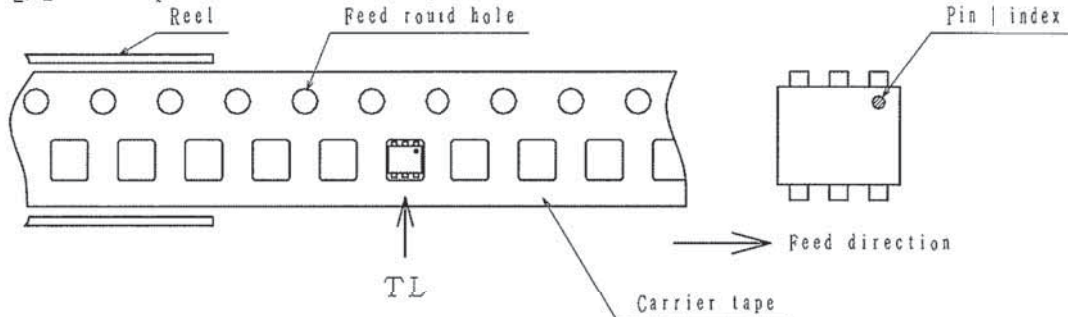
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



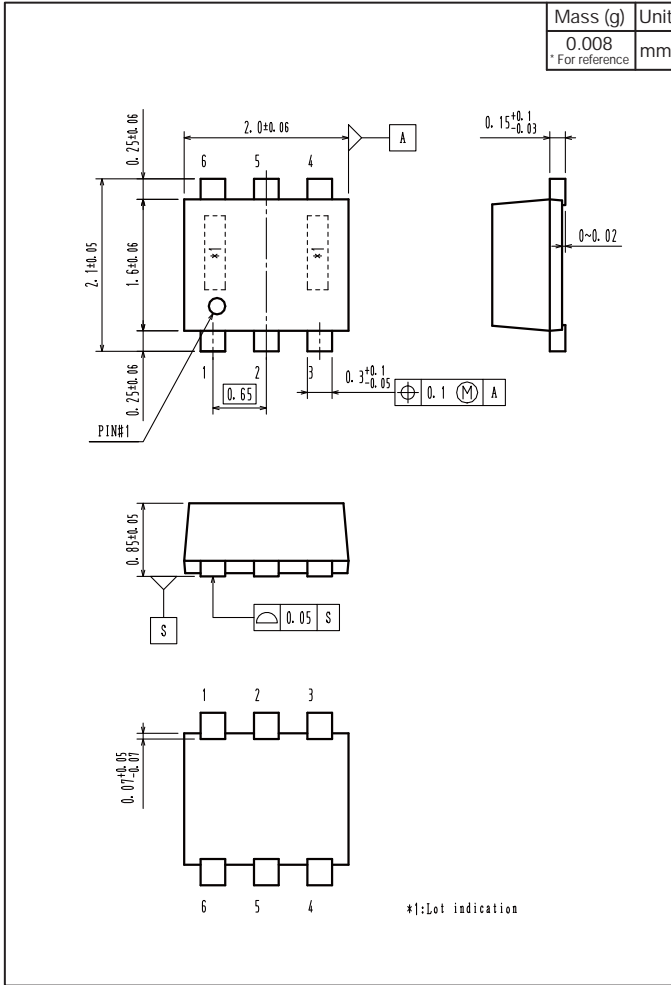
2-2. Device placement direction



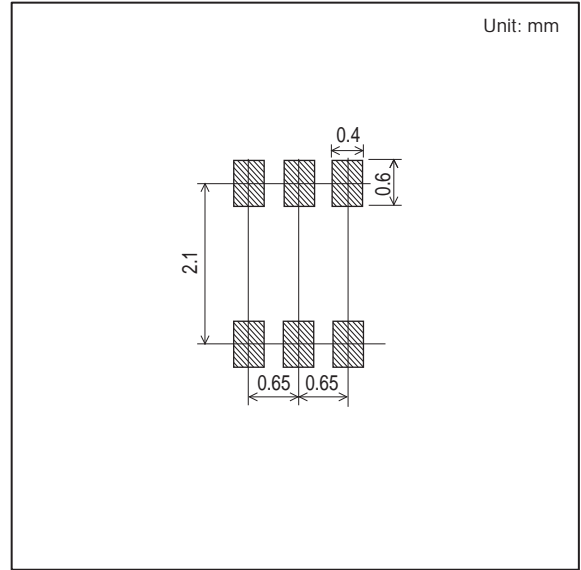
Those with pin | index on the feed hole side.....TL

# MCH6601

## Outline Drawing MCH6601-TL-E



## Land Pattern Example



Note on usage : Since the MCH6601 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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