



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

MCH6602 — N-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 _{DSS}		30	V
Gate-to-Source Voltage	V _{GSS}		±10	V
Drain Current (DC)	I _D		0.35	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycles≤1%	1.4	A
Allowable Power Dissipation	P _D	When mounted on ceramic substrate (900mm ² ×0.8mm) 1unit	0.8	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

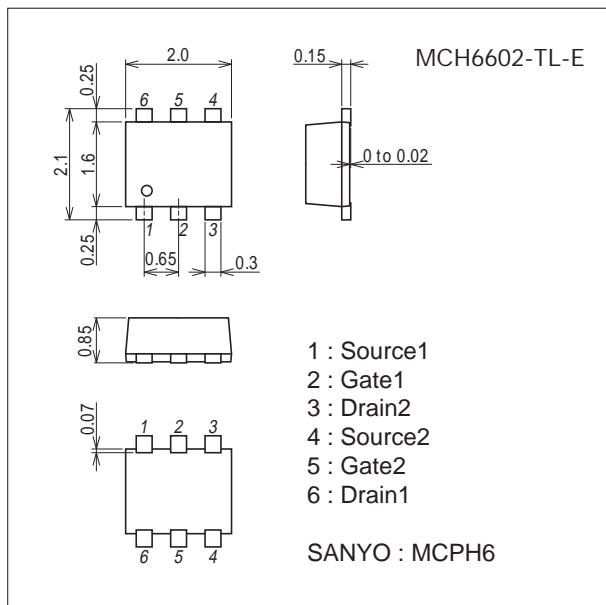
This product is designed to "ESD immunity < 200V**", so please take care when handling.

* Machine Model

Package Dimensions

unit : mm (typ)

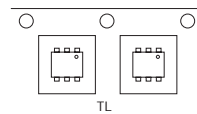
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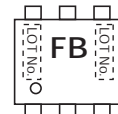
Product & Package Information

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

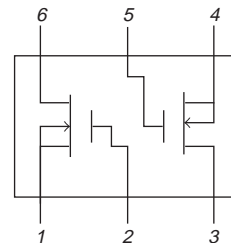
Packing Type : TL



Marking



Electrical Connection

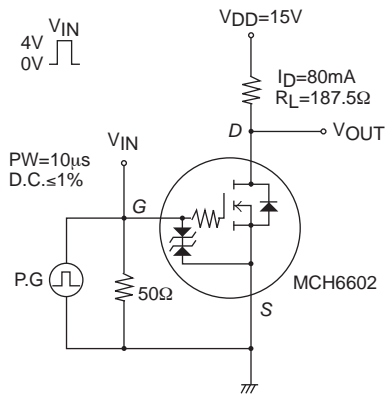


MCH6602

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

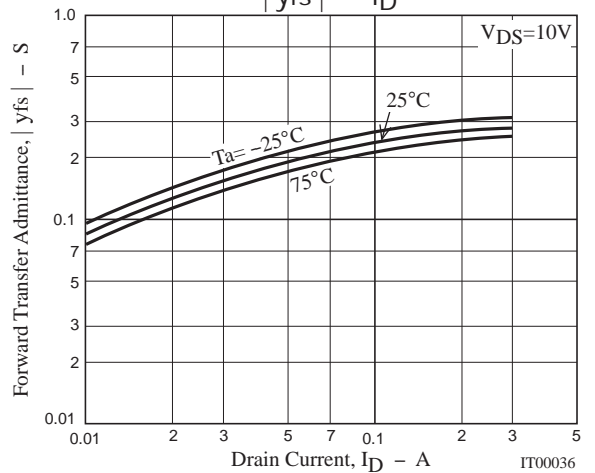
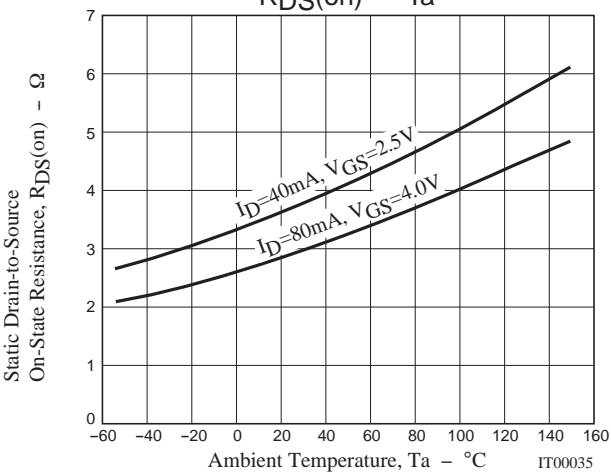
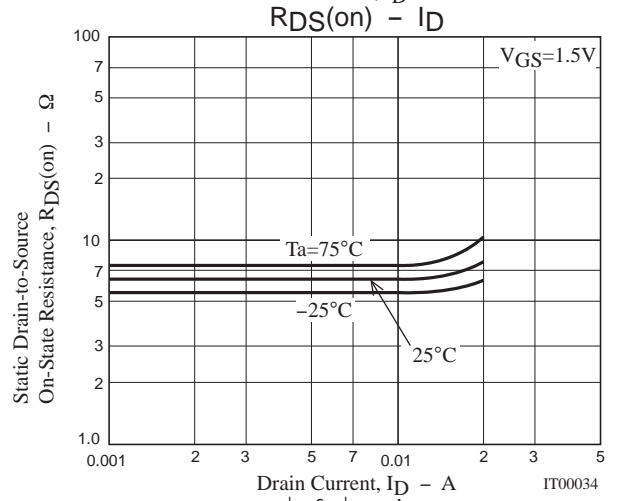
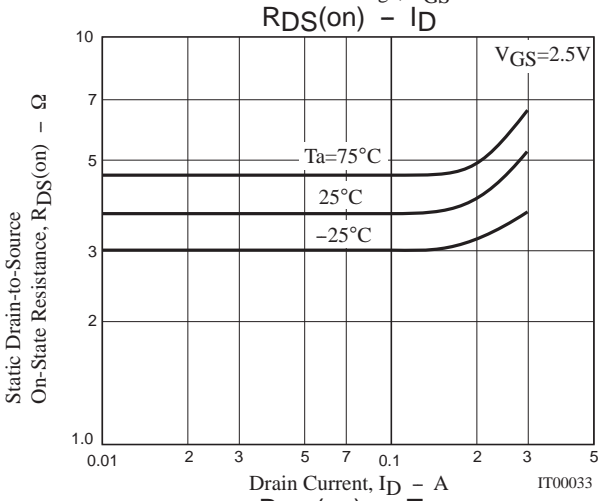
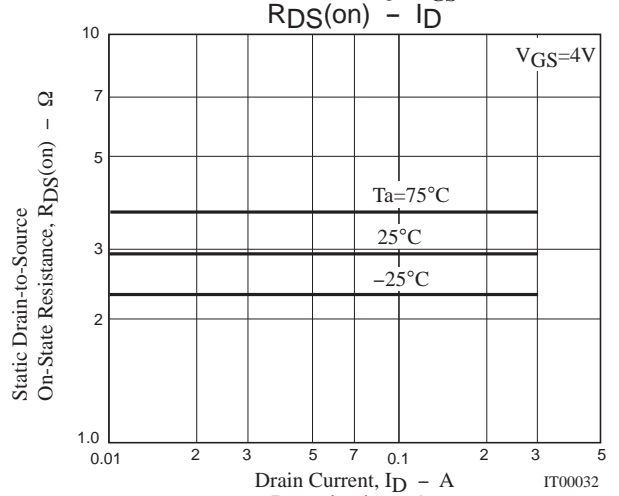
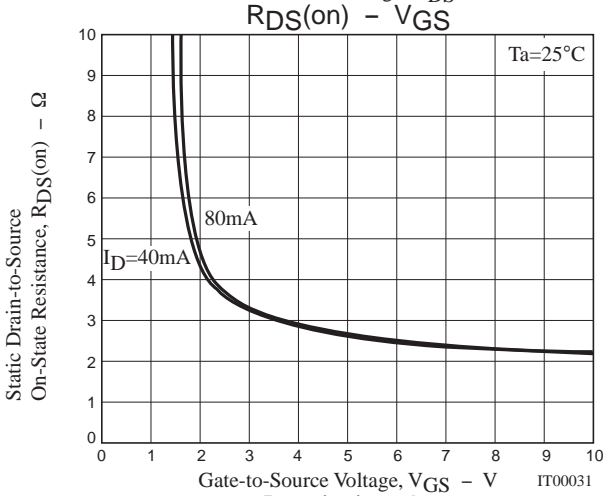
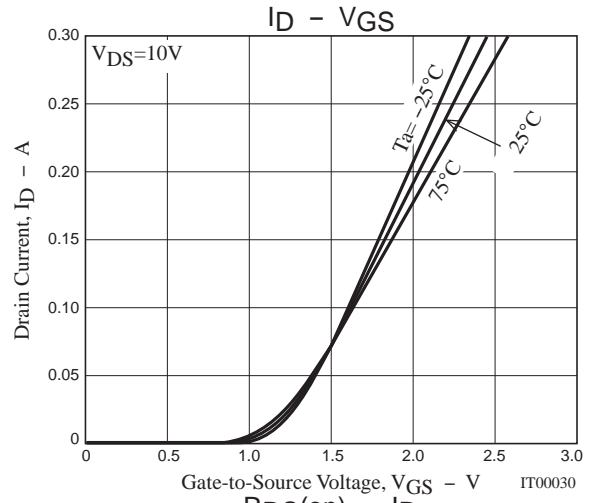
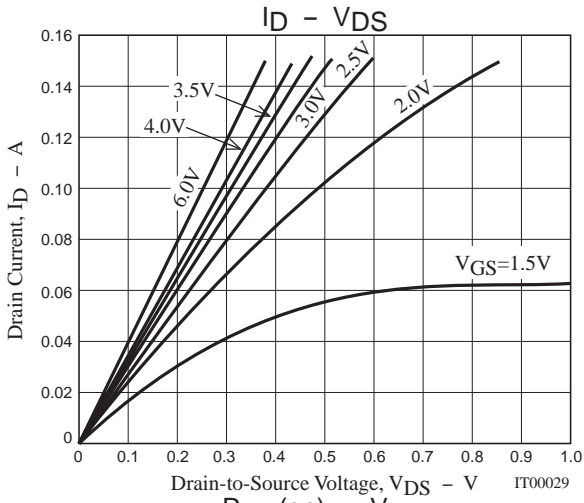
Parameter	Symbol	Conditions	Ratings			Unit	
			min	typ	max		
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1\text{mA}, V_{GS}=0\text{V}$	30			V	
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30\text{V}, V_{GS}=0\text{V}$			1	μA	
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 8\text{V}, V_{DS}=0\text{V}$			± 10	μA	
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10\text{V}, I_D=100\mu\text{A}$	0.4		1.3	V	
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10\text{V}, I_D=80\text{mA}$	0.15	0.22		S	
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=80\text{mA}, V_{GS}=4\text{V}$		2.9	3.7	Ω	
	$R_{DS(on)2}$	$I_D=40\text{mA}, V_{GS}=2.5\text{V}$		3.7	5.2	Ω	
	$R_{DS(on)3}$	$I_D=10\text{mA}, V_{GS}=1.5\text{V}$		6.4	12.8	Ω	
Input Capacitance	C_{iss}	See specified Test Circuit.		7.0		pF	
Output Capacitance	C_{oss}		$V_{DS}=10\text{V}, f=1\text{MHz}$		5.9		pF
Reverse Transfer Capacitance	C_{rss}				2.3		pF
Turn-ON Delay Time	$t_{d(on)}$				19		ns
Rise Time	t_r			65		ns	
Turn-OFF Delay Time	$t_{d(off)}$			155		ns	
Fall Time	t_f			120		ns	
Total Gate Charge	Q_g	$V_{DS}=10\text{V}, V_{GS}=10\text{V}, I_D=150\text{mA}$		1.58		nC	
Gate-to-Source Charge	Q_{gs}			0.26		nC	
Gate-to-Drain "Miller" Charge	Q_{gd}			0.31		nC	
Diode Forward Voltage	V_{SD}		$I_S=150\text{mA}, V_{GS}=0\text{V}$		0.87	1.2	V

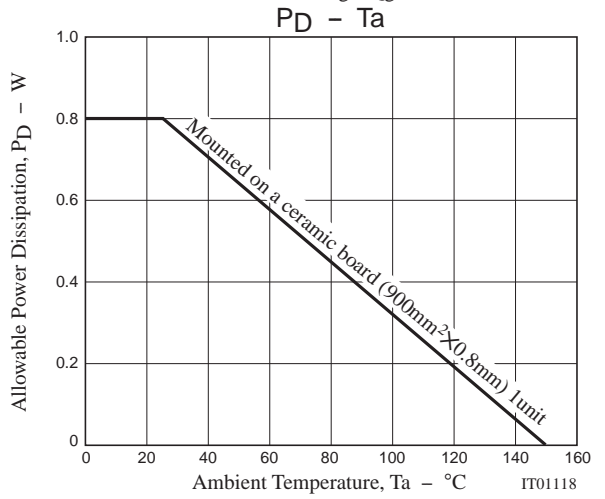
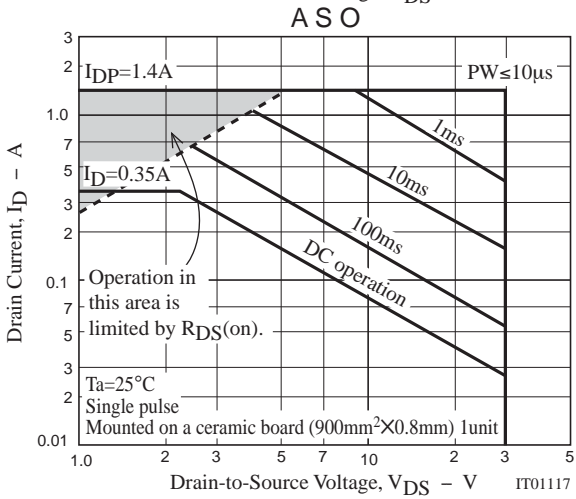
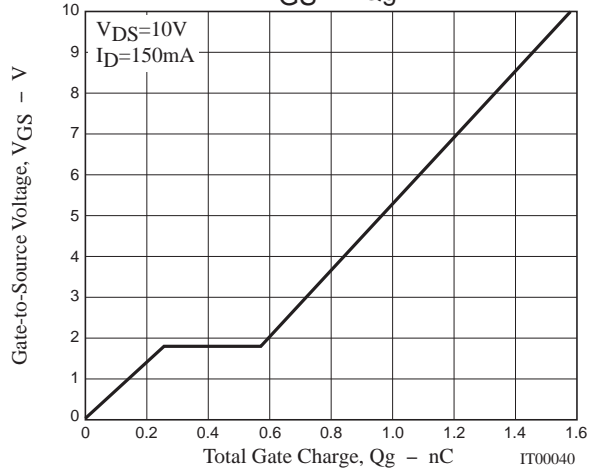
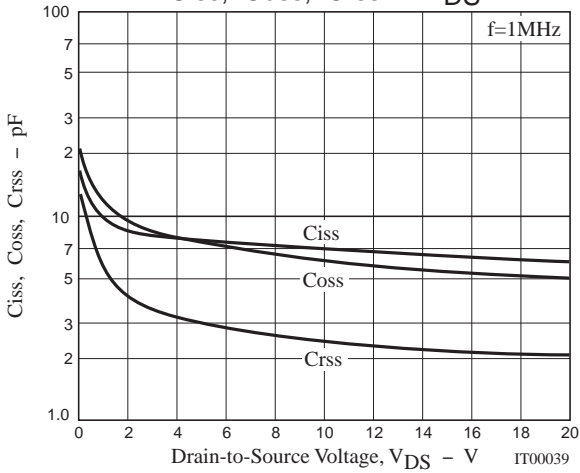
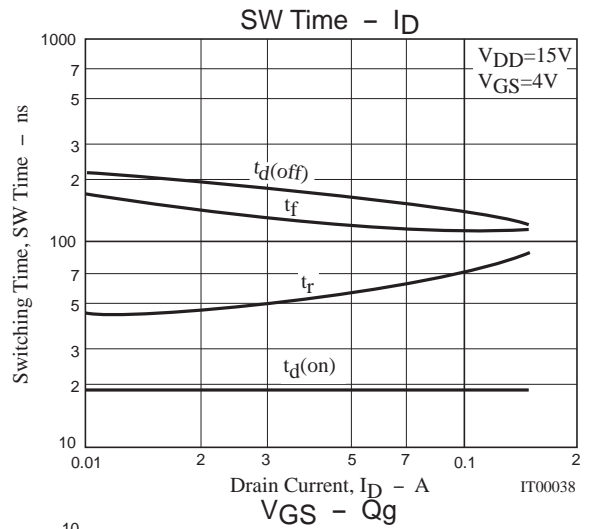
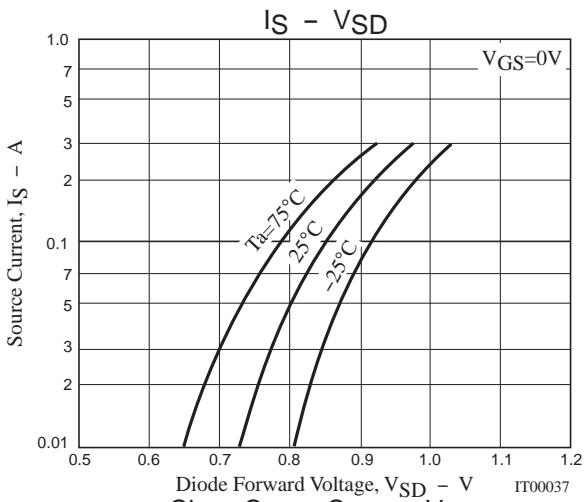
Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
MCH6602-TL-E	MCPH6	3,000pcs./reel	Pb Free





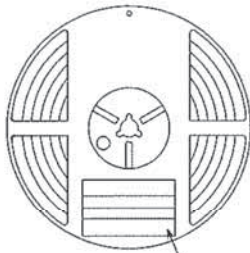
Taping Specification

MCH6602-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

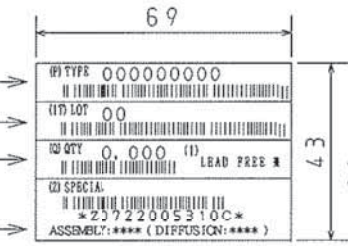
Packing method



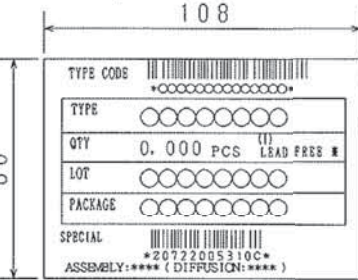
Type No.
LOT No.
Quantity
Origin

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.



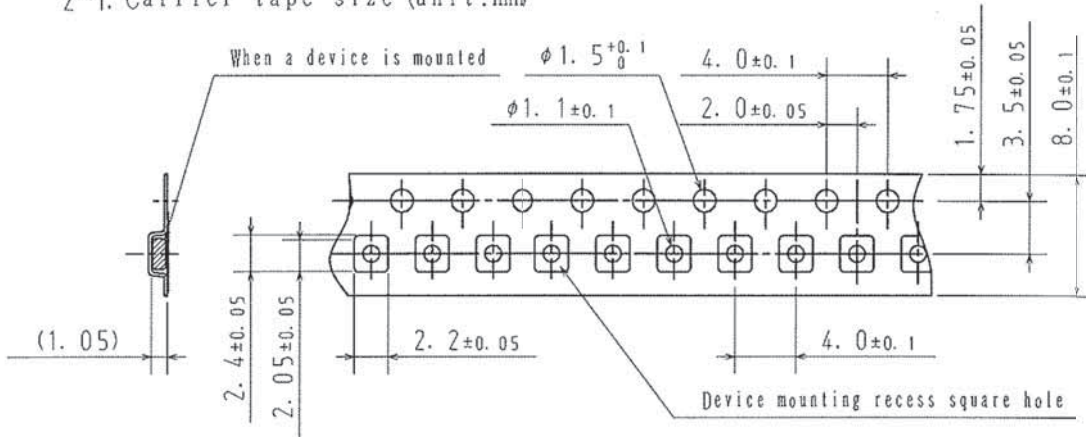
NOTE (1)

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

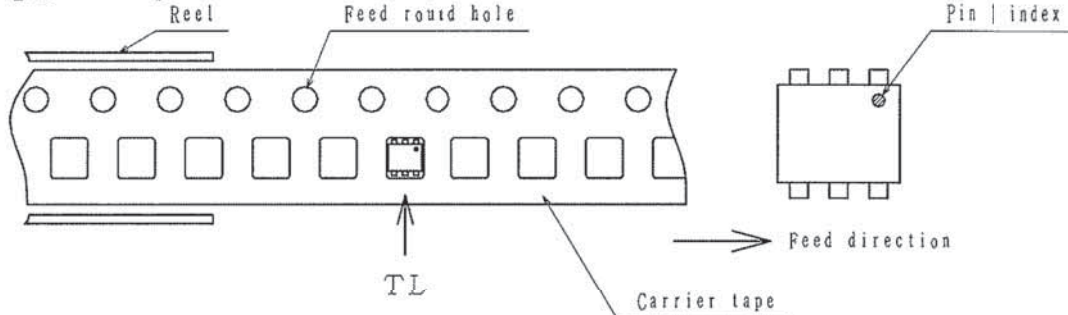
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



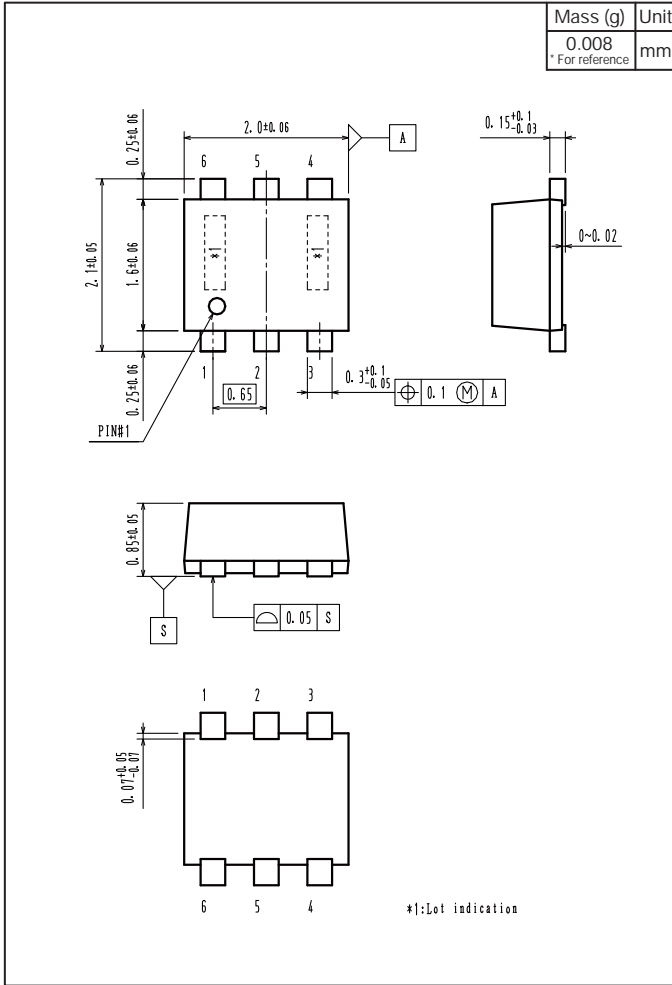
2-2. Device placement direction



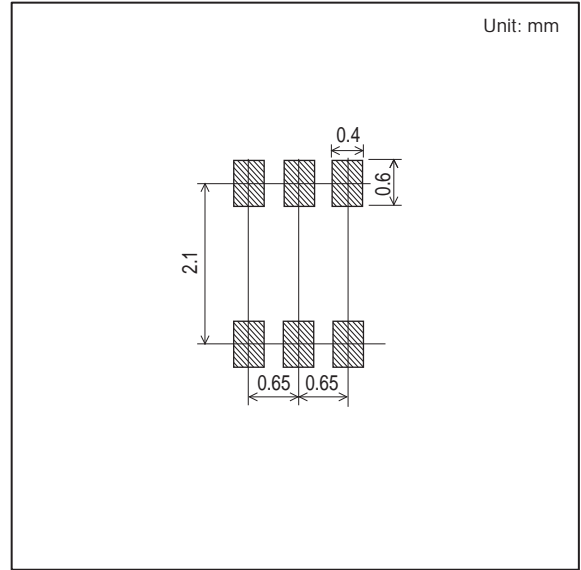
Those with pin | index on the feed hole side.....TL

MCH6602

Outline Drawing MCH6602-TL-E



Land Pattern Example



Note on usage : Since the MCH6602 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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