



SANYO Semiconductors

## DATA SHEET

An ON Semiconductor Company

P-Channel Silicon MOSFET

# MCH3383 — Low Voltage Drive Switching Device Applications

## Features

- ON-resistance  $R_{DS(on)1}=57m\Omega$  (typ.)
- 0.9V drive
- Halogen free compliance
- Protection diode in

## Specifications

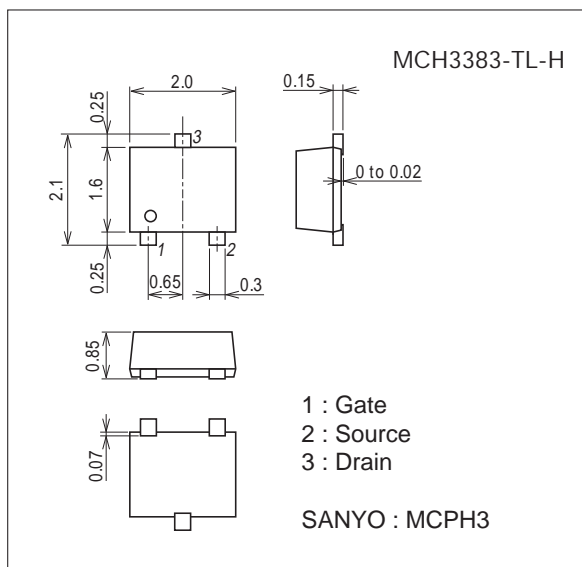
Absolute Maximum Ratings at  $T_a=25^\circ\text{C}$ 

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		-12	V
Gate-to-Source Voltage	$V_{GSS}$		$\pm 5$	V
Drain Current (DC)	$I_D$		-3.5	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu\text{s}$ , duty cycle $\leq 1\%$	-14	A
Allowable Power Dissipation	$P_D$	When mounted on ceramic substrate (900mm <sup>2</sup> ×0.8mm)	1.0	W
Channel Temperature	$T_{ch}$		150	$^\circ\text{C}$
Operating Temperature	$T_{opr}$		-5 to +150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

## Package Dimensions

unit : mm (typ)

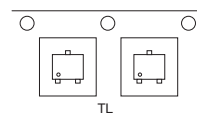
7019A-003



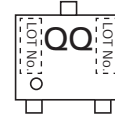
## Product & Package Information

- Package : MCPH3
- JEITA, JEDEC : SC-70, SOT-323
- Minimum Packing Quantity : 3,000 pcs./reel

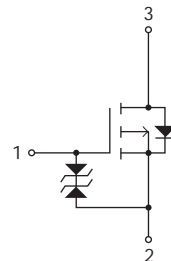
## Packing Type : TL



## Marking



## Electrical Connection

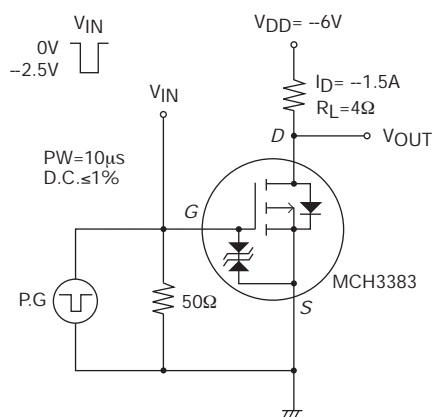


# MCH3383

## Electrical Characteristics at Ta=25°C

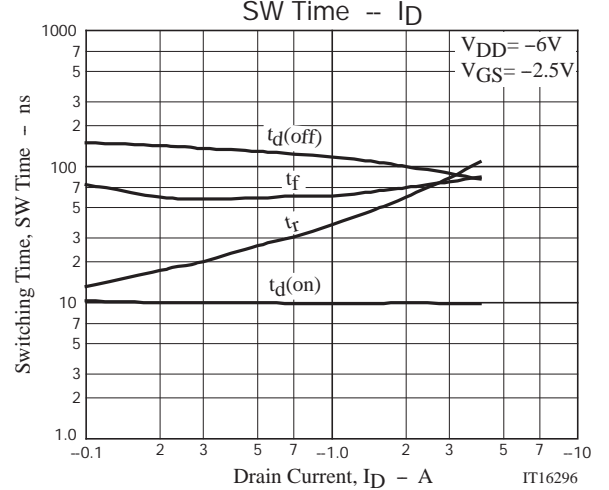
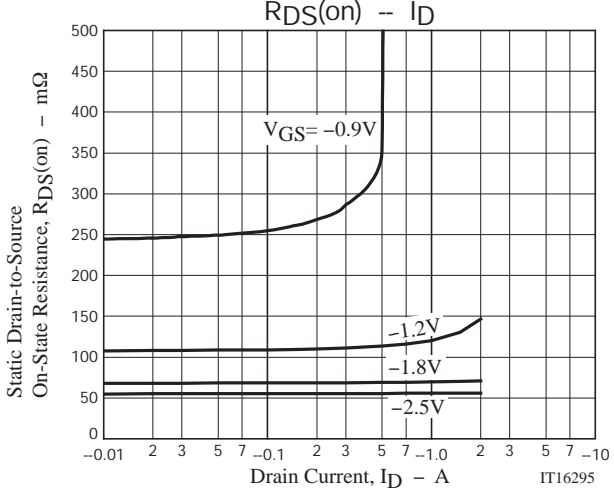
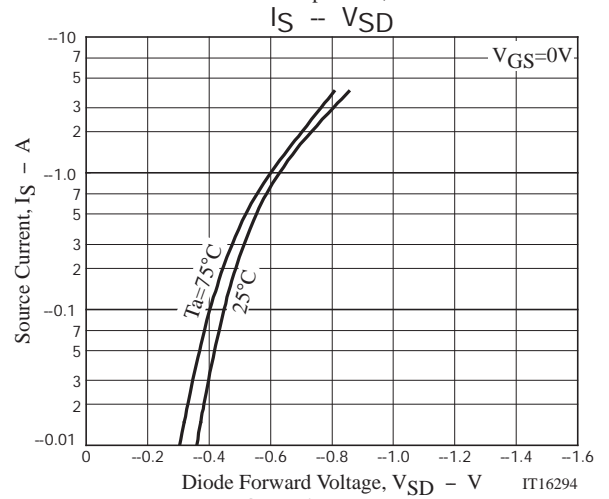
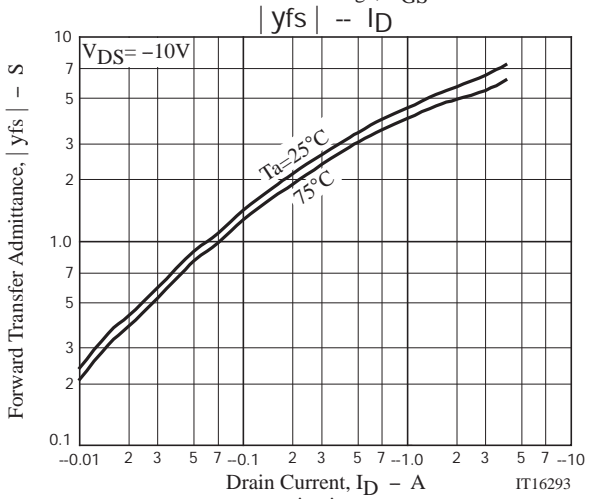
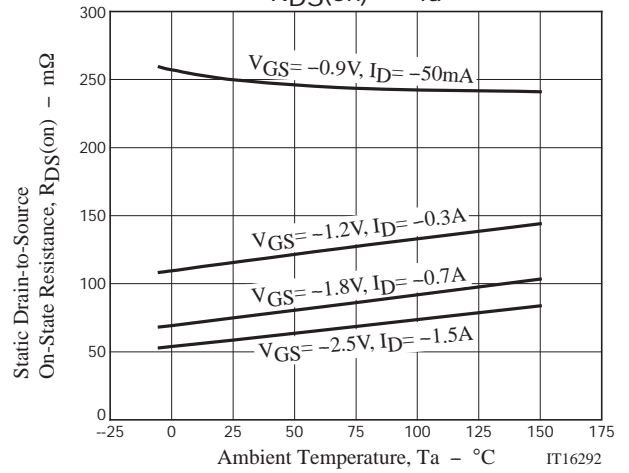
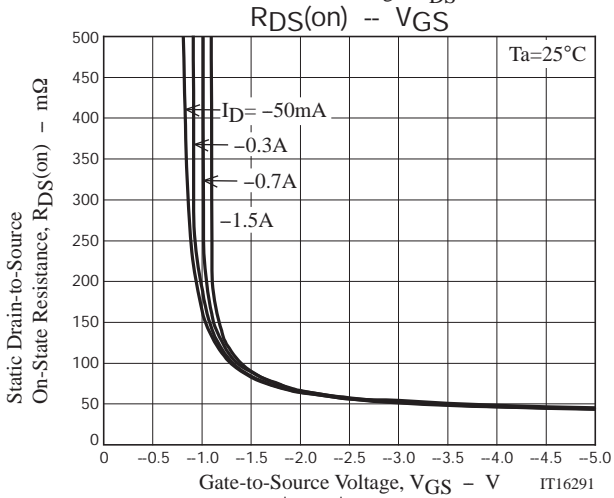
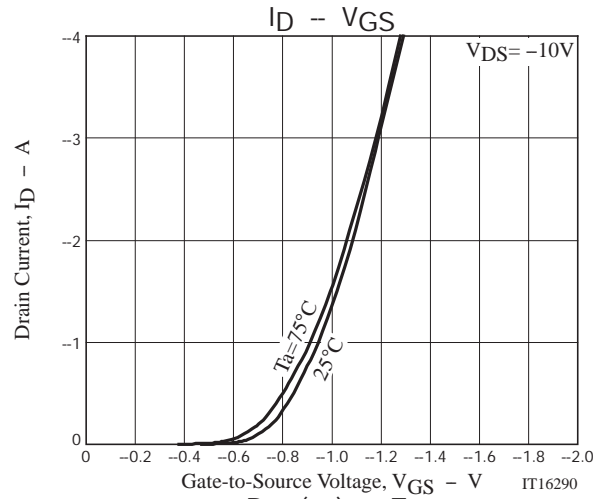
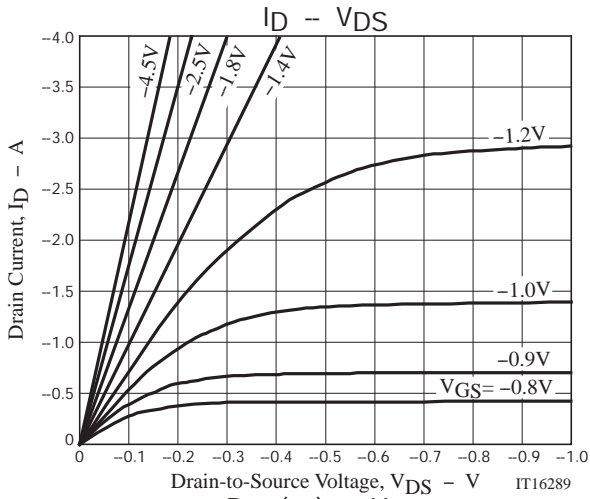
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V(BR)DSS	I <sub>D</sub> =-1mA, V <sub>GS</sub> =0V	-12			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-12V, V <sub>GS</sub> =0V			-10	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±4V, V <sub>DS</sub> =0V			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =-6V, I <sub>D</sub> =-1mA	-0.3		-0.8	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =-6V, I <sub>D</sub> =-1.5A		5.3		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =-1.5A, V <sub>GS</sub> =-2.5V		57	69	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =-0.7A, V <sub>GS</sub> =-1.8V		75	98	mΩ
	R <sub>DS(on)3</sub>	I <sub>D</sub> =-0.3A, V <sub>GS</sub> =-1.2V		115	173	mΩ
	R <sub>DS(on)4</sub>	I <sub>D</sub> =-50mA, V <sub>GS</sub> =-0.9V		250	500	mΩ
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-6V, f=1MHz		1010		pF
Output Capacitance	C <sub>oss</sub>	V <sub>DS</sub> =-6V, f=1MHz		130		pF
Reverse Transfer Capacitance	C <sub>rss</sub>	V <sub>DS</sub> =-6V, f=1MHz		85		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See specified Test Circuit.		9.9		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit.		49		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>	See specified Test Circuit.		109		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit.		65		ns
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =-6V, V <sub>GS</sub> =-2.5V, I <sub>D</sub> =-3.5A		6.2		nC
Gate-to-Source Charge	Q <sub>gs</sub>	V <sub>DS</sub> =-6V, V <sub>GS</sub> =-2.5V, I <sub>D</sub> =-3.5A		1.6		nC
Gate-to-Drain "Miller" Charge	Q <sub>gd</sub>	V <sub>DS</sub> =-6V, V <sub>GS</sub> =-2.5V, I <sub>D</sub> =-3.5A		1.1		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-3.5A, V <sub>GS</sub> =0V		-0.83	-1.2	V

## Switching Time Test Circuit

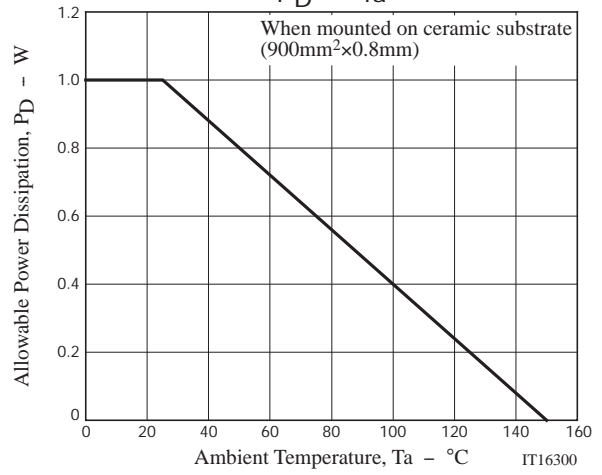
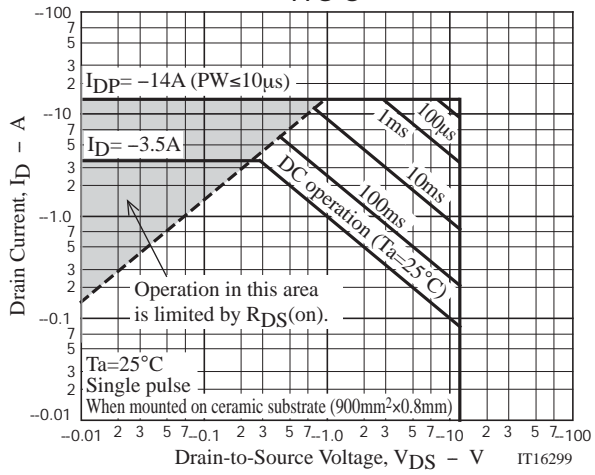
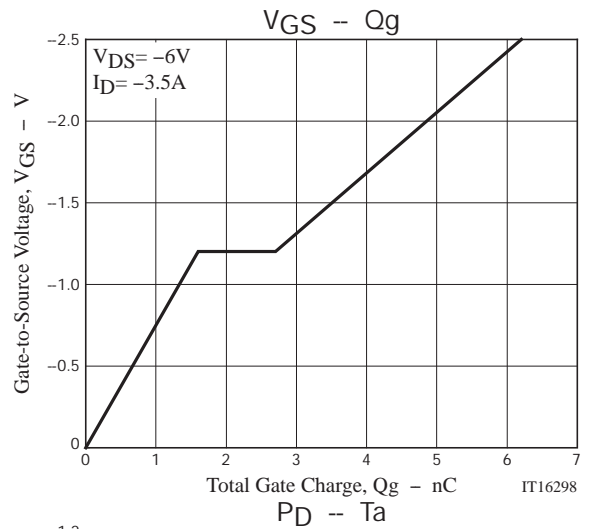
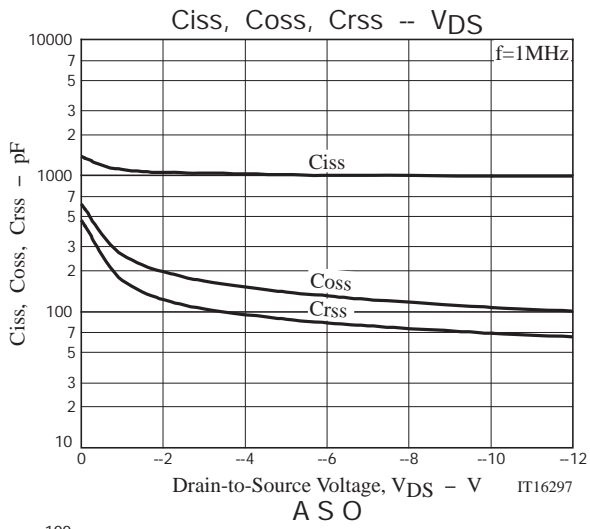


## Ordering Information

Device	Package	Shipping	memo
MCH3383-TL-H	MCPH3	3,000pcs./reel	Pb Free and Halogen Free



# MCH3383



Taping Specification

MCH3383-TL-H

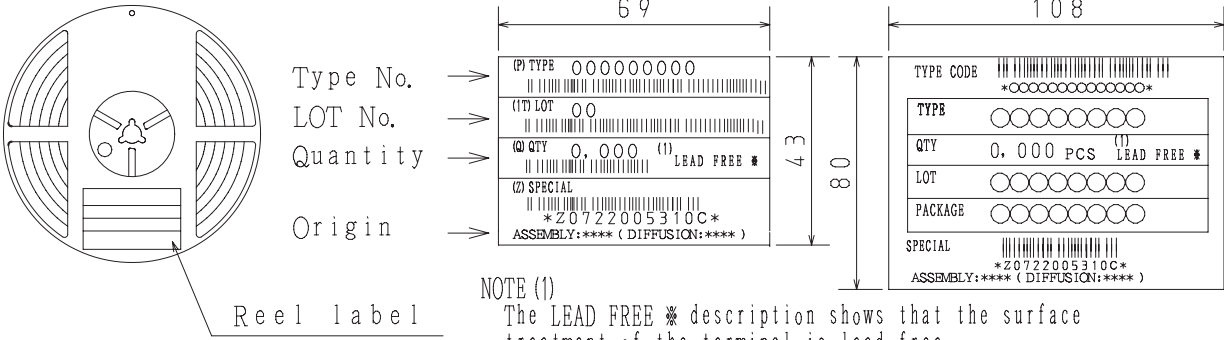
1. Packing Format

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)
MCPH3	MCPH3	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, Inner box label (unit:mm)      Outer box label

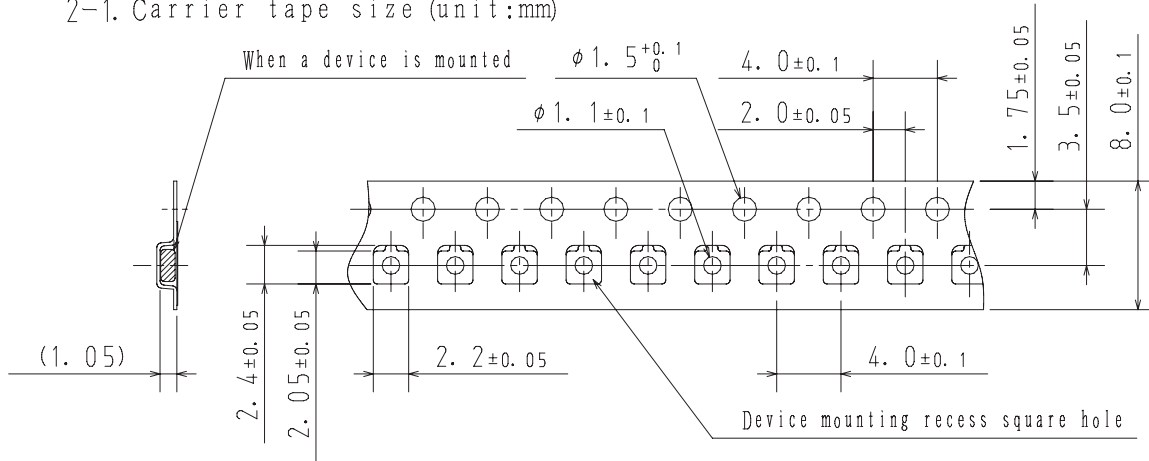
It is a label at the time of factory shipments.  
The form of a label may change in physical distribution process.



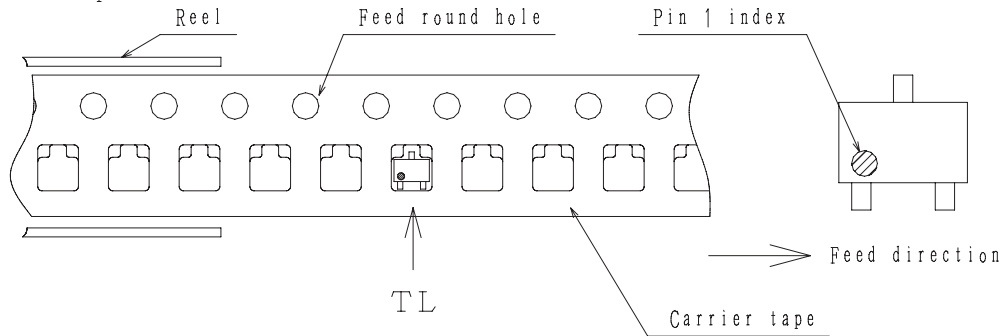
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



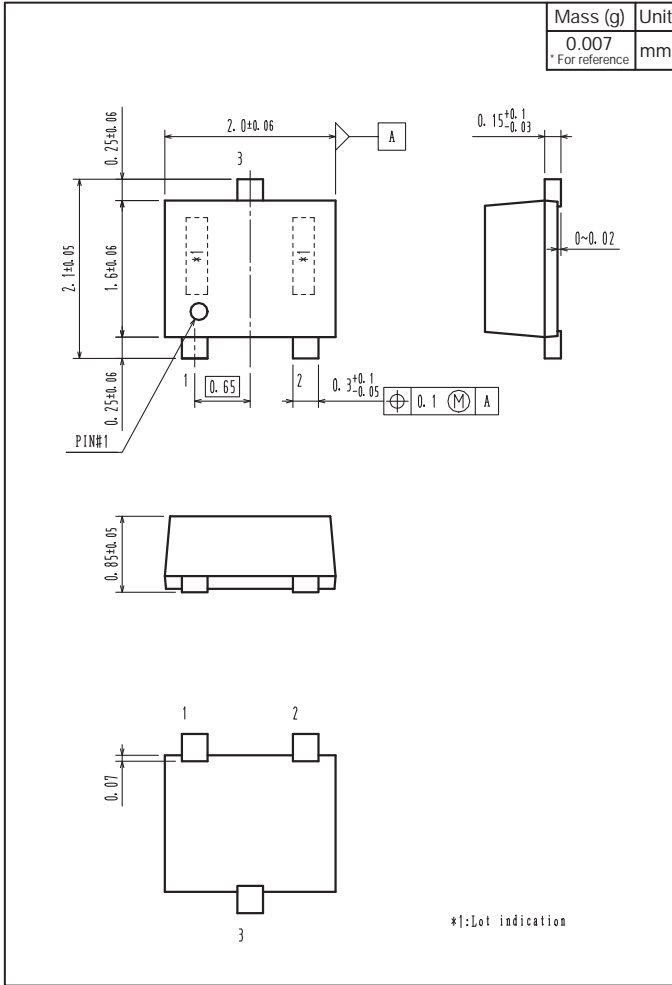
2-2. Device placement direction



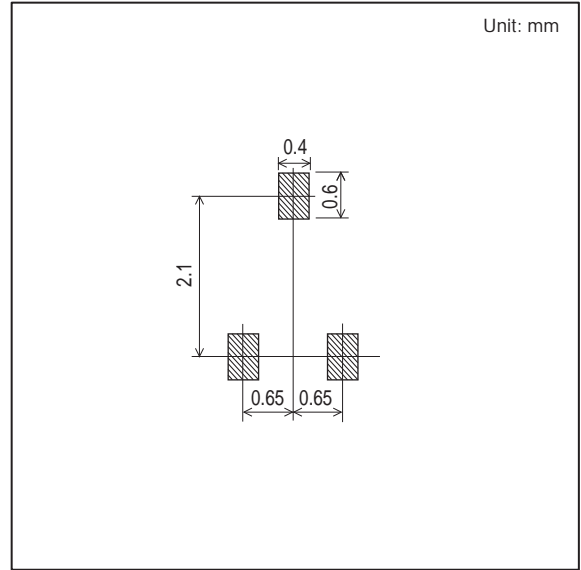
Those with pin 1 index on the feed hole side.....TL

# MCH3383

## Outline Drawing MCH3383-TL-H



## Land Pattern Example



Note on usage : Since the MCH3383 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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