



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

P-Channel Silicon MOSFET

MCH3382 — Low Votage Drive Switching Device Applications

Features

- ON-resistance $R_{DS(on)1}=152m\Omega$ (typ.)
- 1.2V drive
- Halogen free compliance

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}		± 9	V
Drain Current (DC)	I_D		-2	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	-8	A
Allowable Power Dissipation	P_D	When mounted on ceramic substrate ($900\text{mm}^2 \times 0.8\text{mm}$)	0.8	W
Channel Temperature	T_{ch}		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

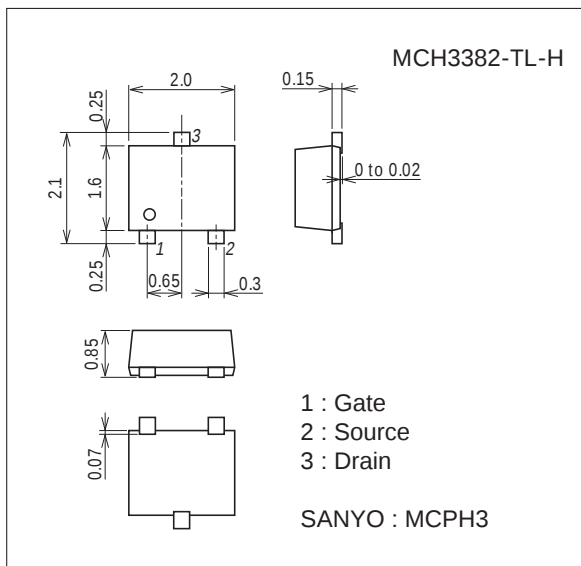
This product is designed to "ESD immunity < 200V*", so please take care when handling.

* Machine Model

Package Dimensions

unit : mm (typ)

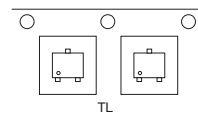
7019A-003



Product & Package Information

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

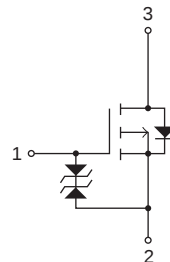
Packing Type : TL



Marking



Electrical Connection

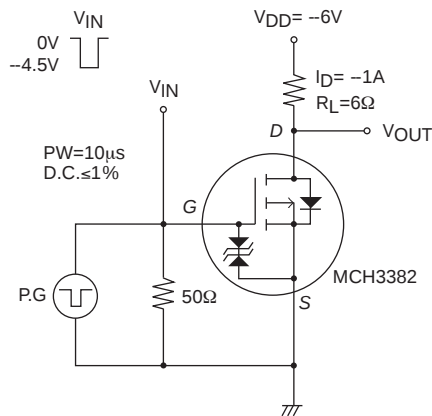


MCH3382

Electrical Characteristics at Ta=25°C

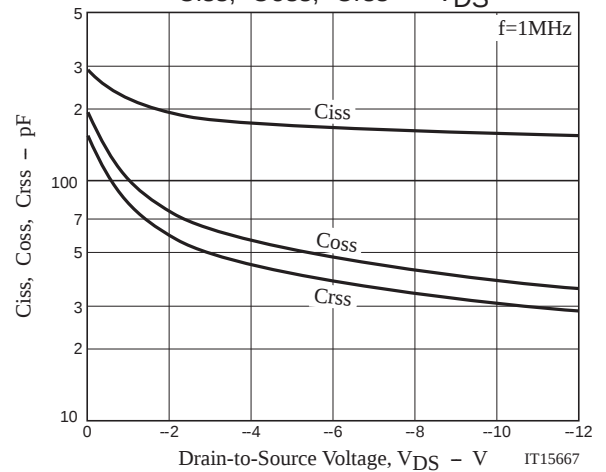
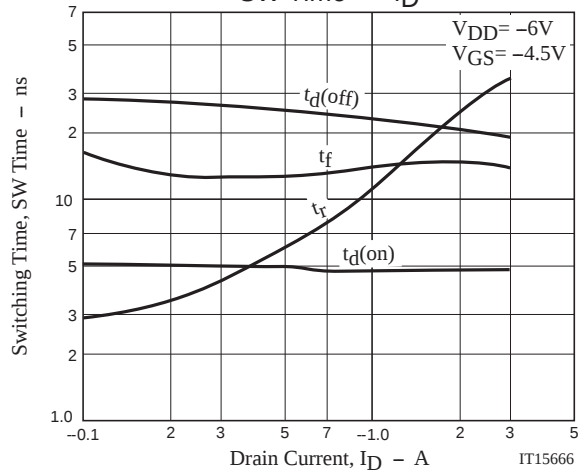
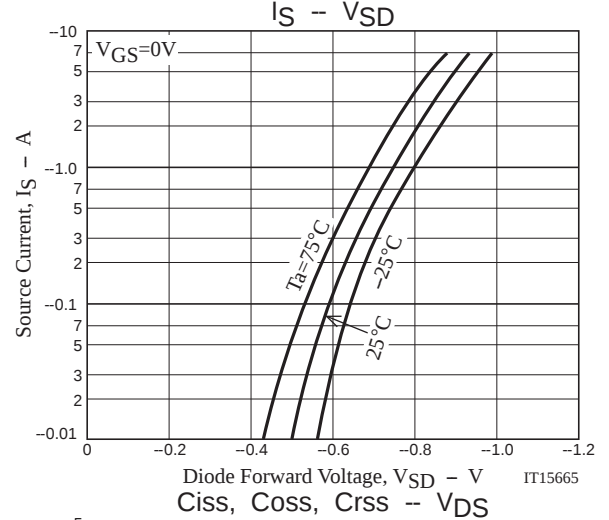
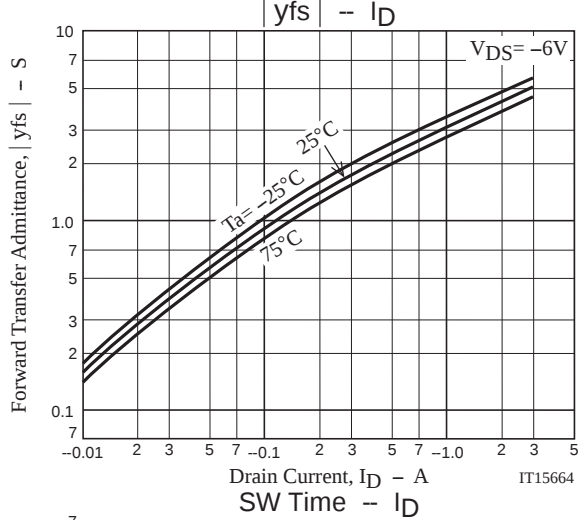
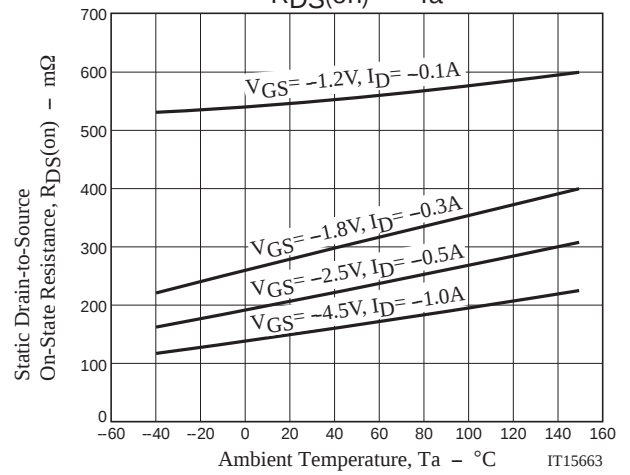
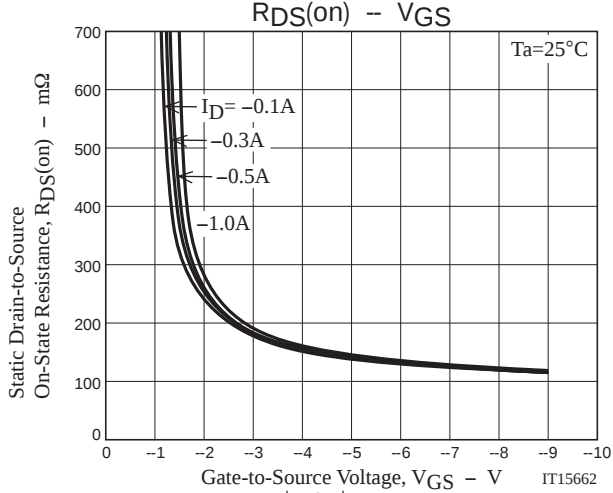
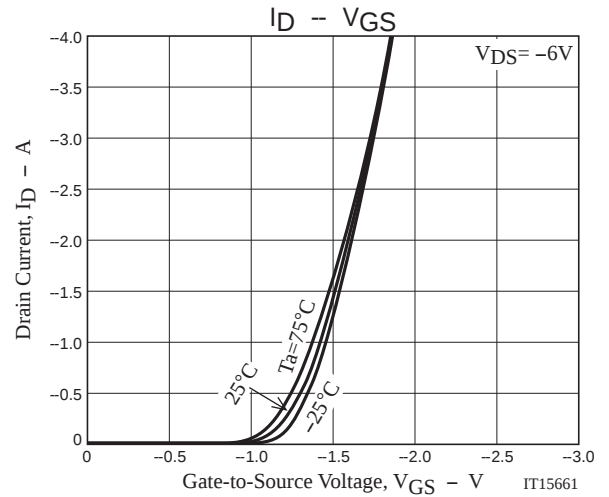
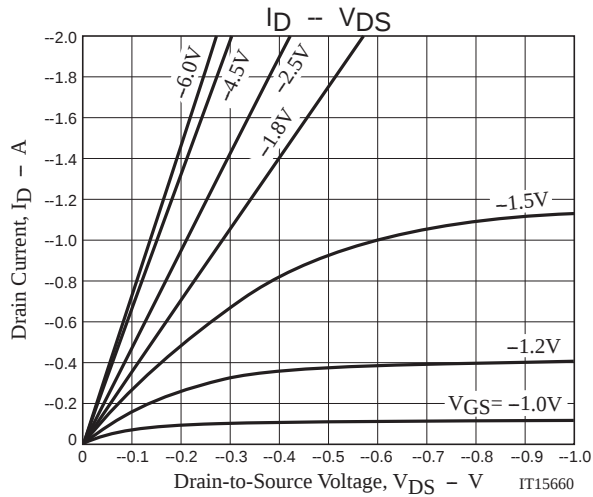
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1mA, V_{GS} = 0V$	-12			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -12V, V_{GS} = 0V$			-10	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 7.2V, V_{DS} = 0V$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -6V, I_D = -1mA$	-0.3		-0.9	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -6V, I_D = -1A$		3		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = -1A, V_{GS} = -4.5V$		152	198	m Ω
	$R_{DS(on)2}$	$I_D = -0.5A, V_{GS} = -2.5V$		212	297	m Ω
	$R_{DS(on)3}$	$I_D = -0.3A, V_{GS} = -1.8V$		286	429	m Ω
	$R_{DS(on)4}$	$I_D = -0.1A, V_{GS} = -1.2V$		520	1040	m Ω
Input Capacitance	C_{iss}	$V_{DS} = -6V, f = 1MHz$		170		pF
Output Capacitance	C_{oss}			50		pF
Reverse Transfer Capacitance	C_{rss}			40		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		4.8		ns
Rise Time	t_r			11		ns
Turn-OFF Delay Time	$t_{d(off)}$			23		ns
Fall Time	t_f			14		ns
Total Gate Charge	Q_g	$V_{DS} = -6V, V_{GS} = -4.5V, I_D = -2A$		2.3		nC
Gate-to-Source Charge	Q_{gs}			0.40		nC
Gate-to-Drain "Miller" Charge	Q_{gd}			0.46		nC
Diode Forward Voltage	V_{SD}	$I_S = -2A, V_{GS} = 0V$		-0.85	-1.2	V

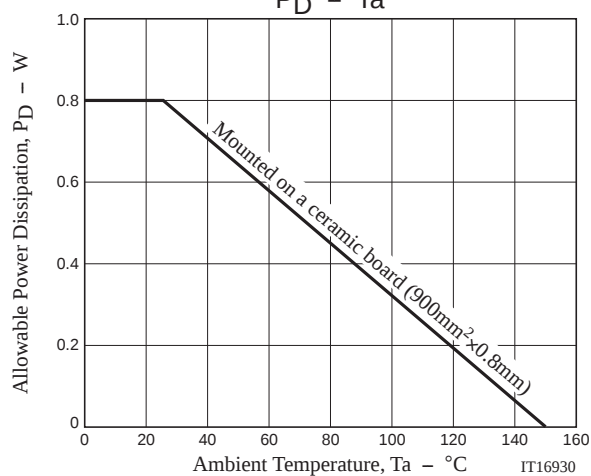
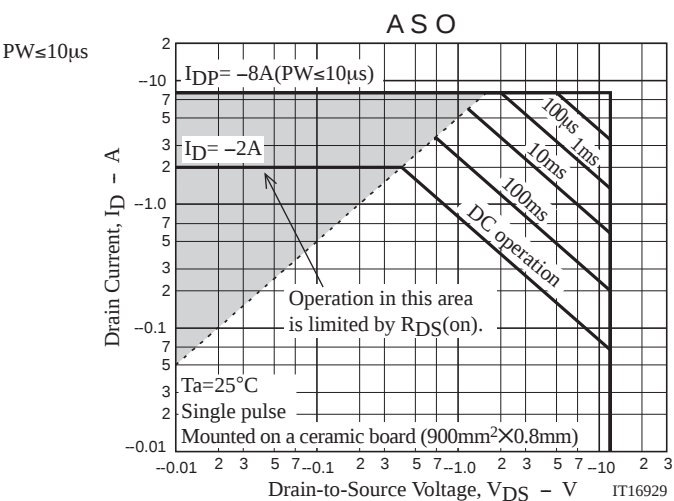
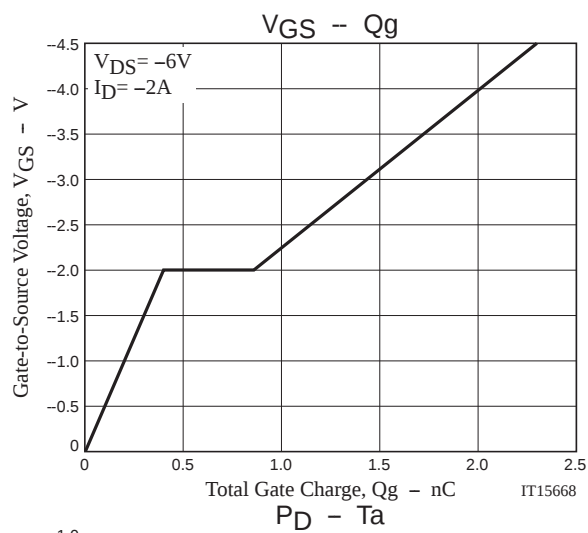
Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
MCH3382-TL-H	MCPH3	3,000pcs./reel	Pb Free and Halogen Free



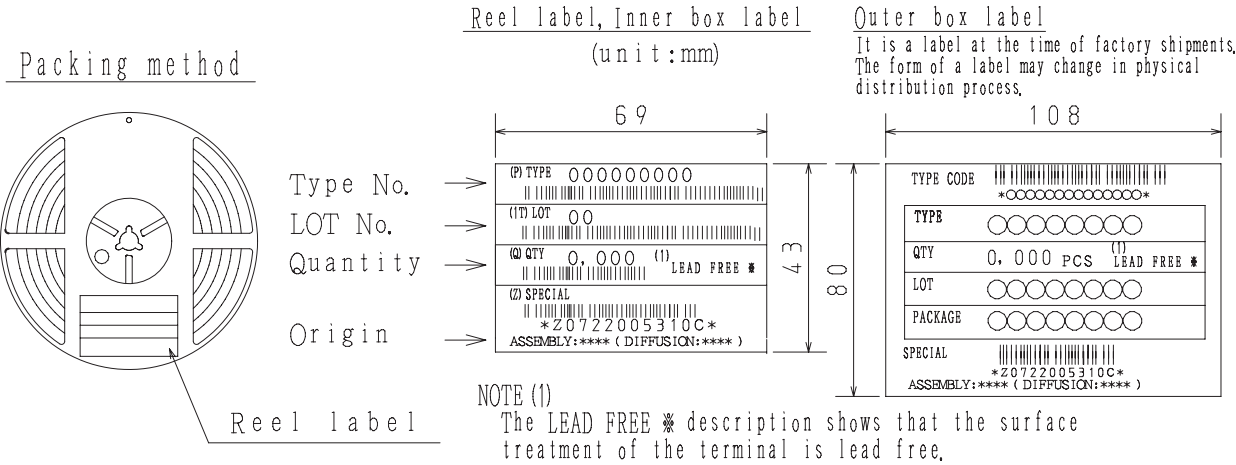


Taping Specification

MCH3382-TL-H

1. Packing Format

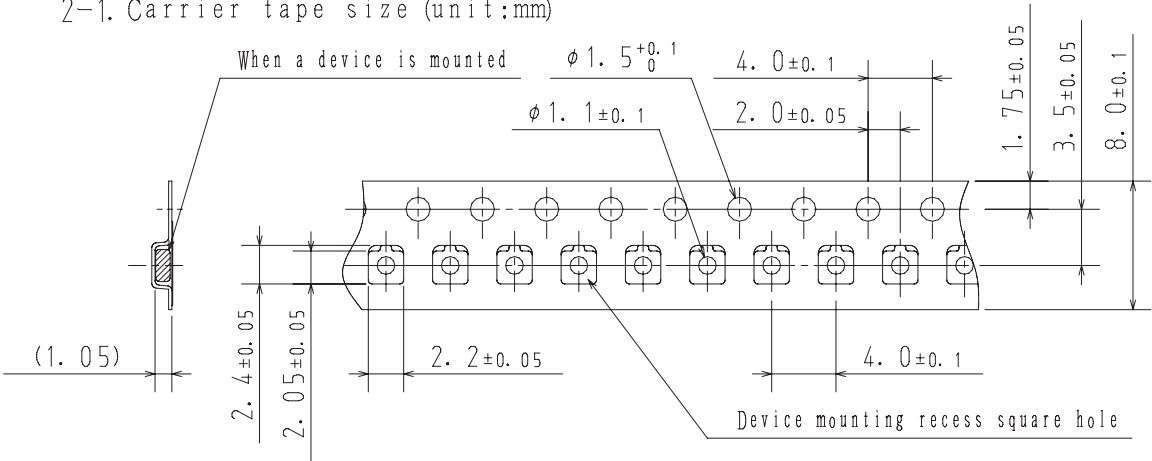
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
MCPH3	MCPH3	3,000	15,000	90,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210



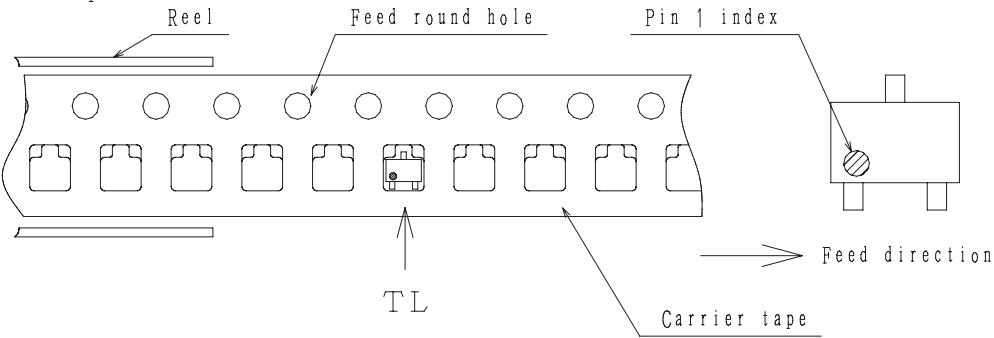
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

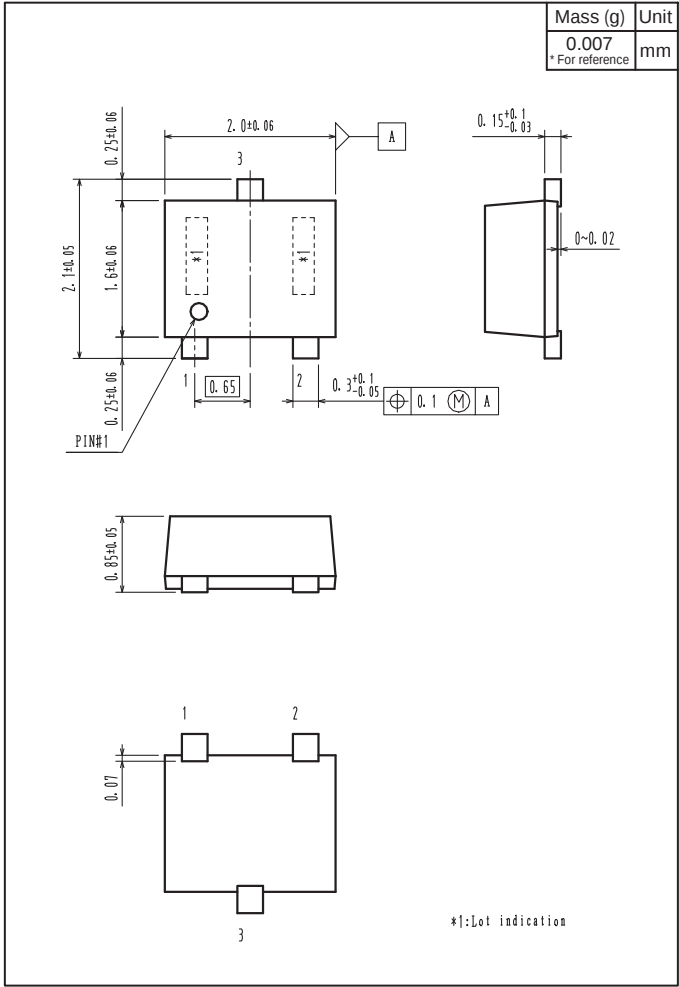
2-1. Carrier tape size (unit:mm)



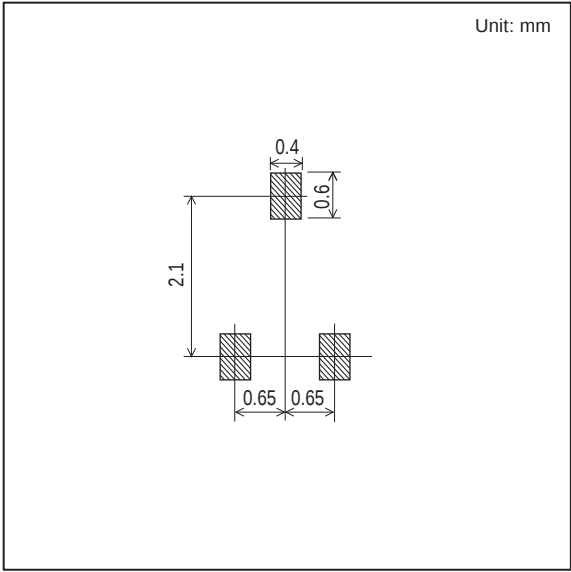
2-2. Device placement direction



Outline Drawing
MCH3382-TL-H



Land Pattern Example



Note on usage : Since the MCH3382 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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