



SANYO Semiconductors

# DATA SHEET

An ON Semiconductor Company

## MCH3382 — P-Channel Silicon MOSFET — Low Voltage 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  $T_a=25^\circ C$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		-12	V
Gate-to-Source Voltage	$V_{GSS}$		$\pm 9$	V
Drain Current (DC)	$I_D$		-2	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu s$ , duty cycle $\leq 1\%$	-8	A
Allowable Power Dissipation	$P_D$	When mounted on ceramic substrate (900mm <sup>2</sup> x 0.8mm)	0.8	W
Channel Temperature	$T_{ch}$		150	$^\circ C$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ C$

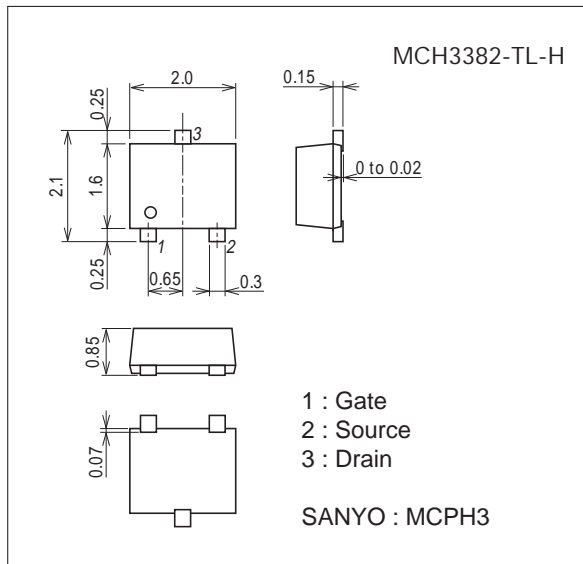
This product is designed to "ESD immunity < 200V\*\*", so please take care when handling.

\* Machine Model

### Package Dimensions

unit : mm (typ)

7019A-003

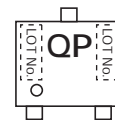
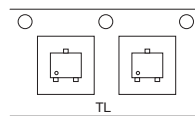


### Product & Package Information

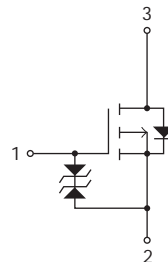
- Package : MCPH3
- JEITA, JEDEC : SC-70, SOT-323
- Minimum Packing Quantity : 3,000 pcs./reel

Packing Type : TL

Marking



### Electrical Connection

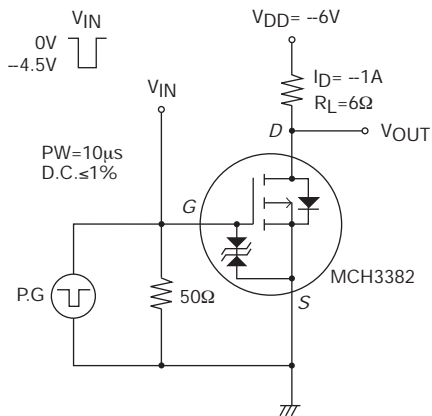


# MCH3382

## Electrical Characteristics at Ta=25°C

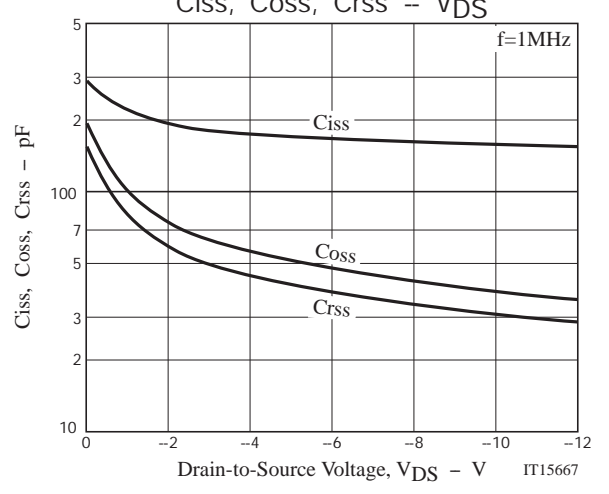
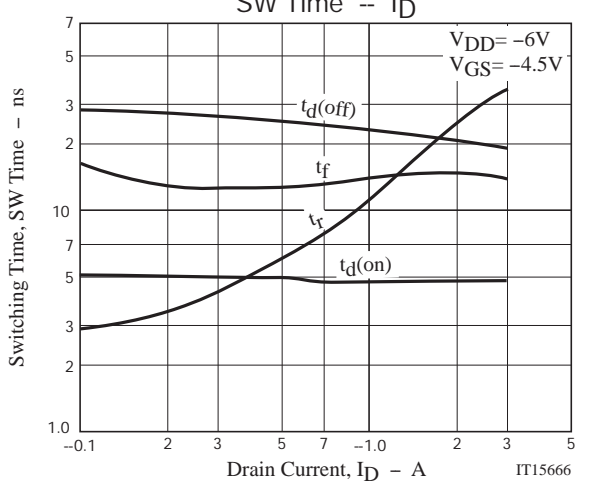
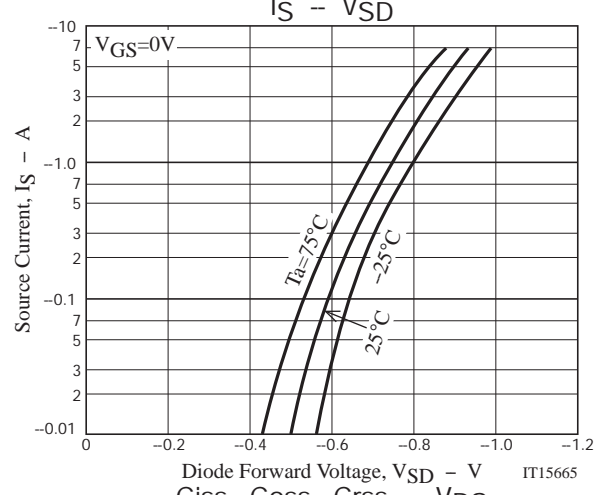
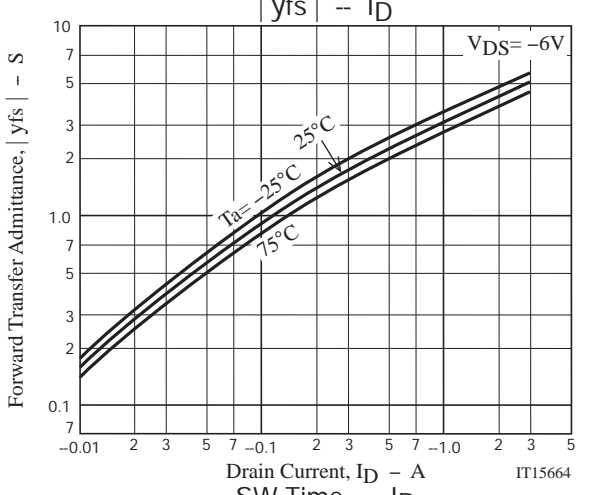
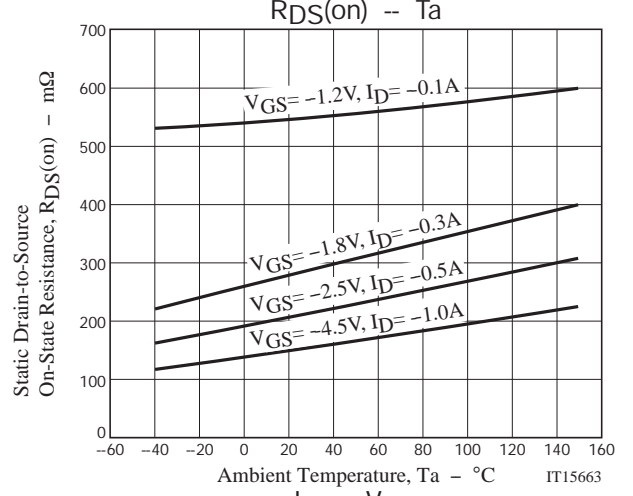
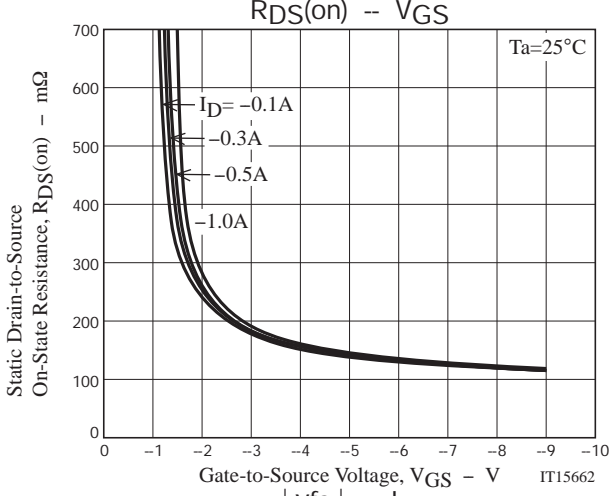
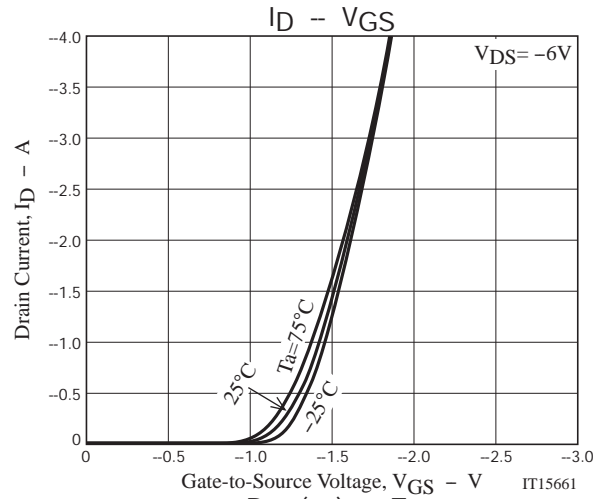
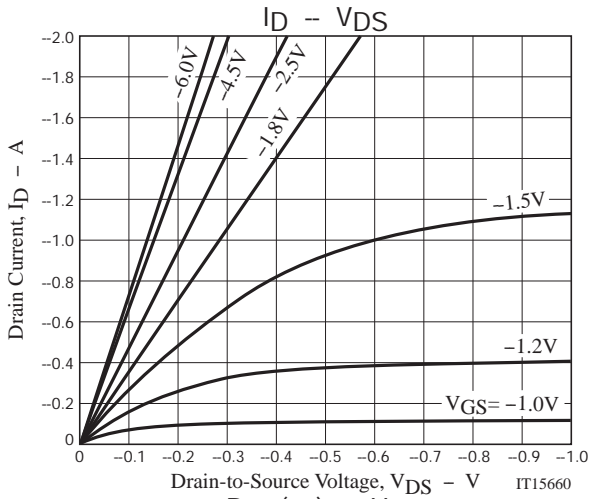
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V(BR)DSS	I <sub>D</sub> =-1mA, V <sub>GS</sub> =0V	-12			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-12V, V <sub>GS</sub> =0V			-10	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±7.2V, 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		-0.9	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =-6V, I <sub>D</sub> =-1A		3		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =-1A, V <sub>GS</sub> =-4.5V		152	198	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =-0.5A, V <sub>GS</sub> =-2.5V		212	297	mΩ
	R <sub>DS(on)3</sub>	I <sub>D</sub> =-0.3A, V <sub>GS</sub> =-1.8V		286	429	mΩ
	R <sub>DS(on)4</sub>	I <sub>D</sub> =-0.1A, V <sub>GS</sub> =-1.2V		520	1040	mΩ
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-6V, f=1MHz		170		pF
Output Capacitance	C <sub>oss</sub>			50		pF
Reverse Transfer Capacitance	C <sub>rss</sub>			40		pF
Turn-ON Delay Time	t <sub>d(on)</sub>			4.8		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit.		11		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>			23		ns
Fall Time	t <sub>f</sub>			14		ns
Total Gate Charge	Q <sub>g</sub>		V <sub>DS</sub> =-6V, V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-2A		2.3	
Gate-to-Source Charge	Q <sub>gs</sub>			0.40		nC
Gate-to-Drain "Miller" Charge	Q <sub>gd</sub>			0.46		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-2A, V <sub>GS</sub> =0V			-0.85	-1.2

## Switching Time Test Circuit

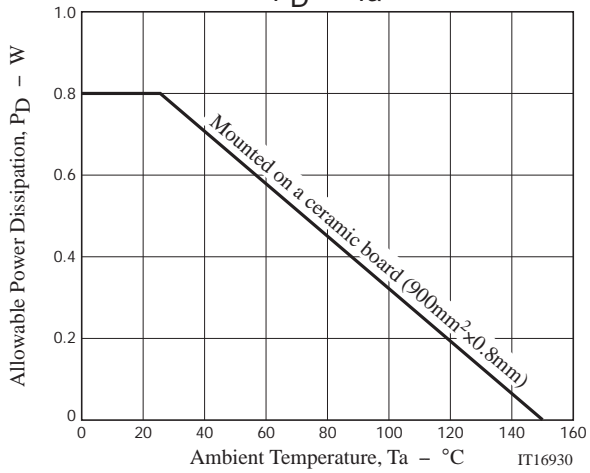
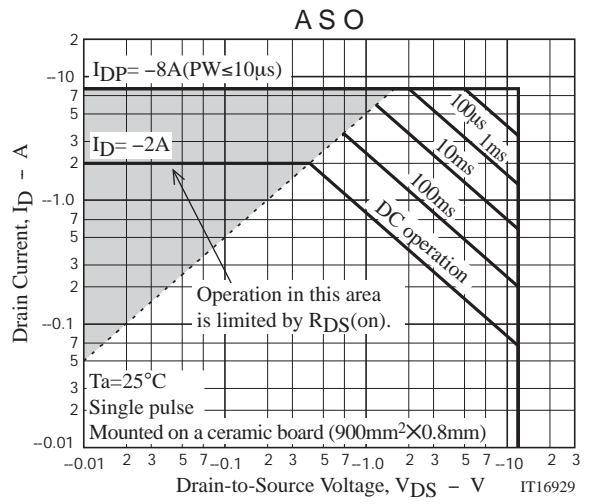
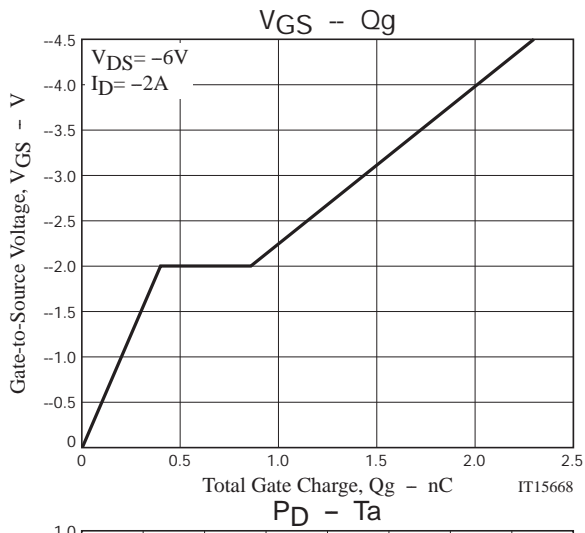


## Ordering Information

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



# MCH3382



Taping Specification

MCH3382-TL-H

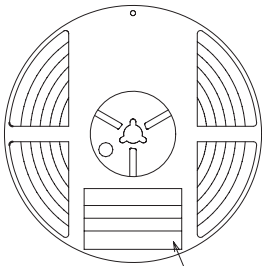
1. Packing Format

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

Reel label, Inner box label  
(unit: mm)

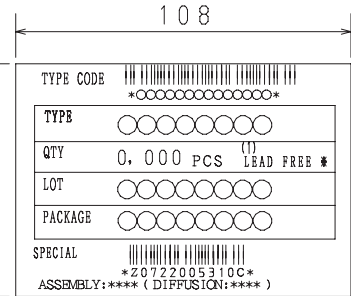
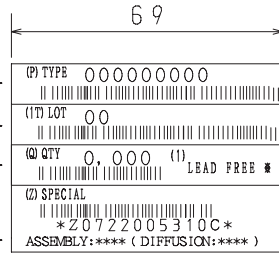
Outer box label  
It is a label at the time of factory shipments.  
The form of a label may change in physical distribution process.

Packing method



Type No.  
LOT No.  
Quantity  
Origin

Reel label



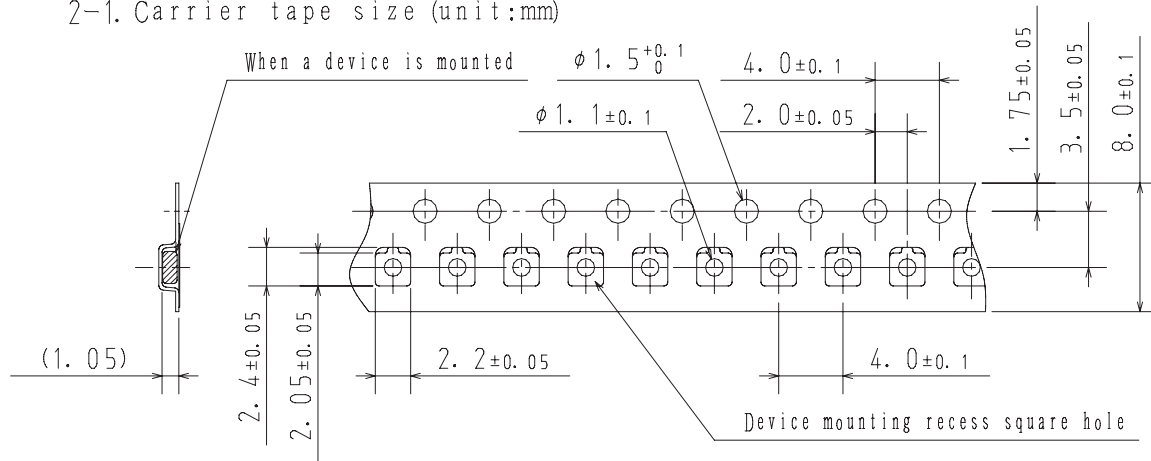
NOTE (1)

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

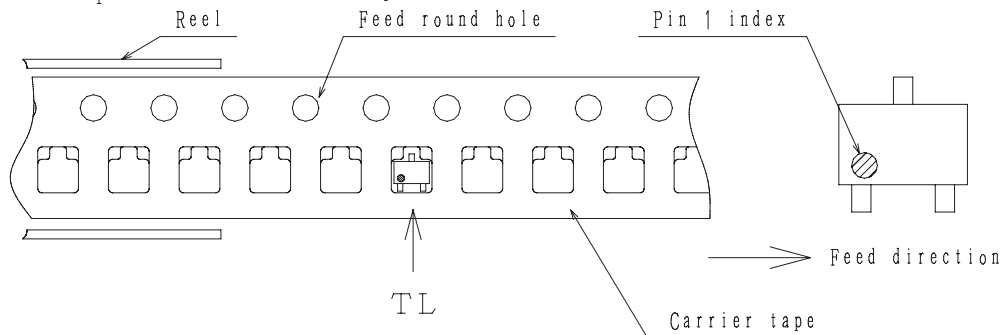
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



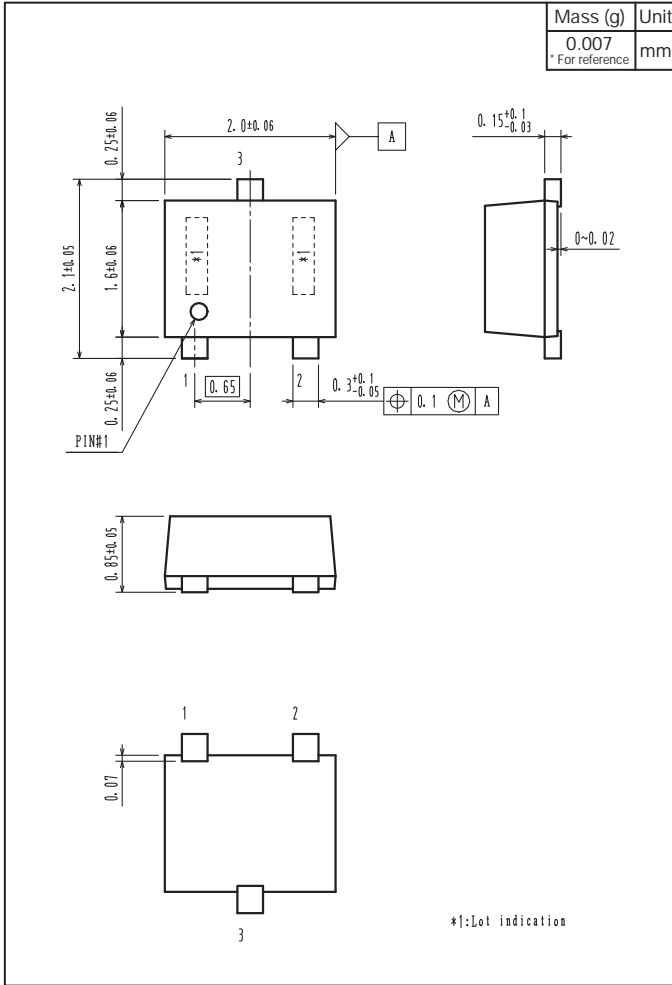
2-2. Device placement direction



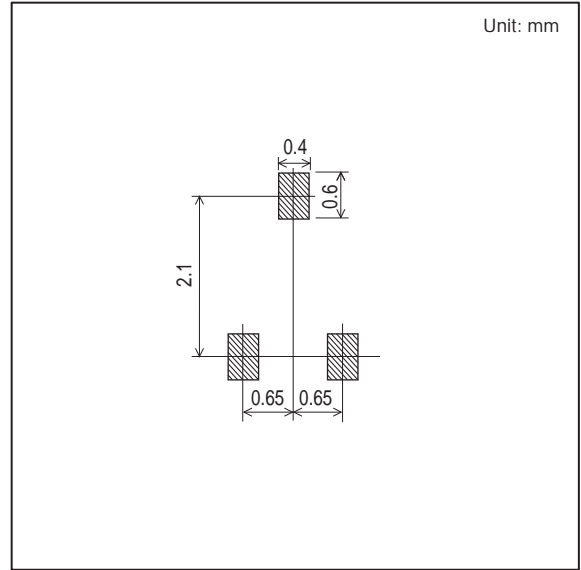
Those with pin 1 index on the feed hole side.....TL

# MCH3382

## 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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