



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

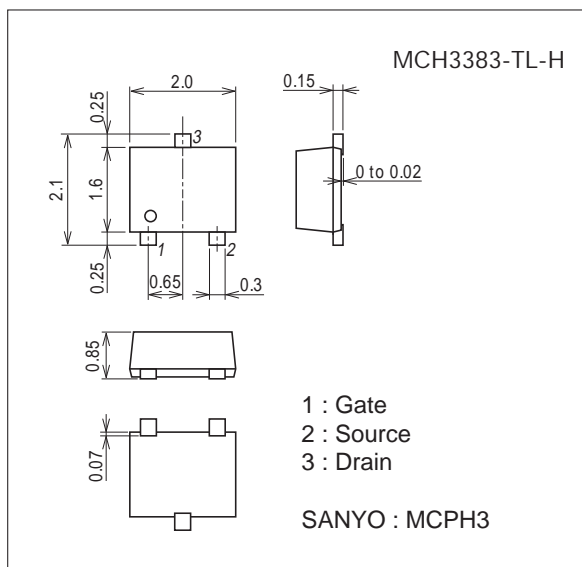
Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		-12	V
Gate-to-Source Voltage	V_{GSS}		± 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 ² ×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)

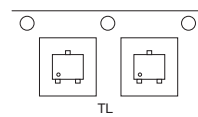
7019A-003



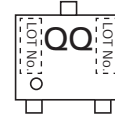
Product & Package Information

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

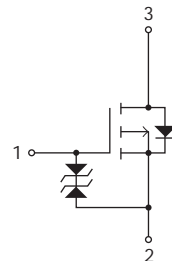
Packing Type : TL



Marking



Electrical Connection

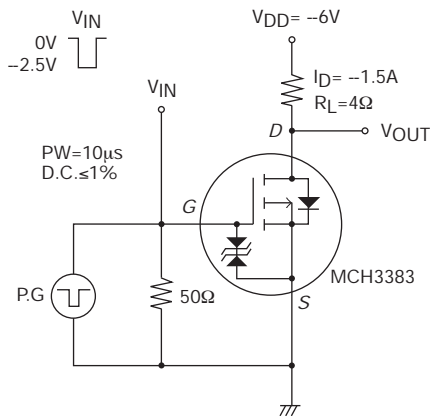


MCH3383

Electrical Characteristics at Ta=25°C

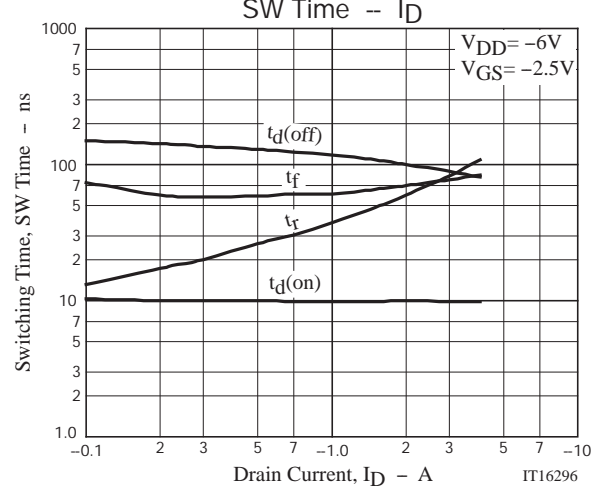
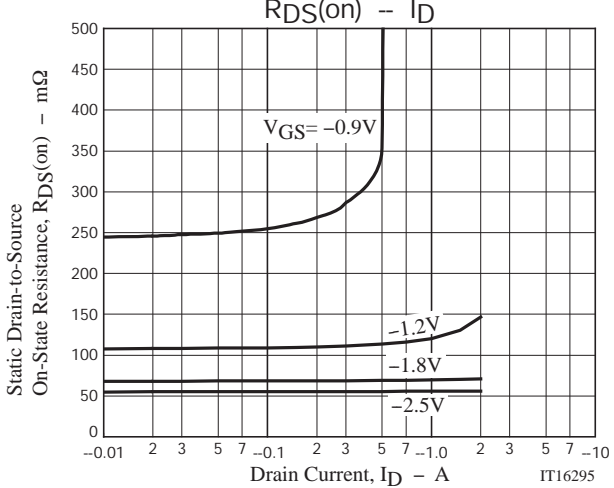
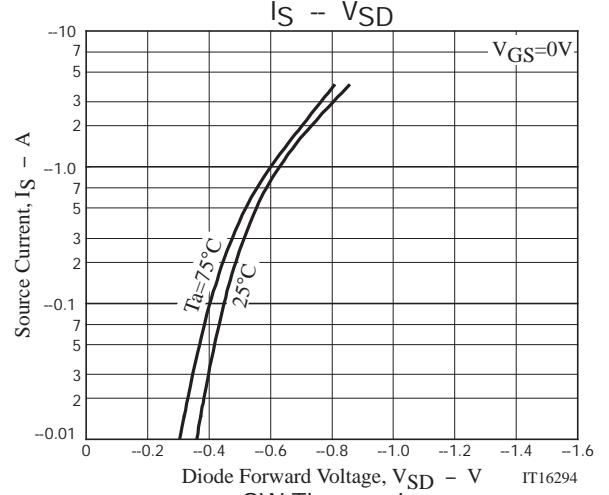
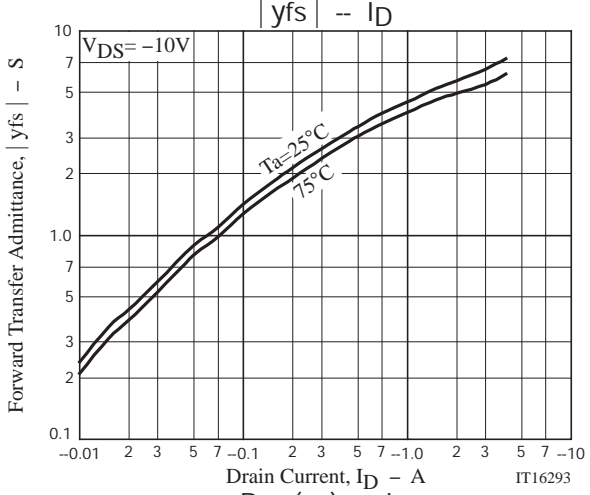
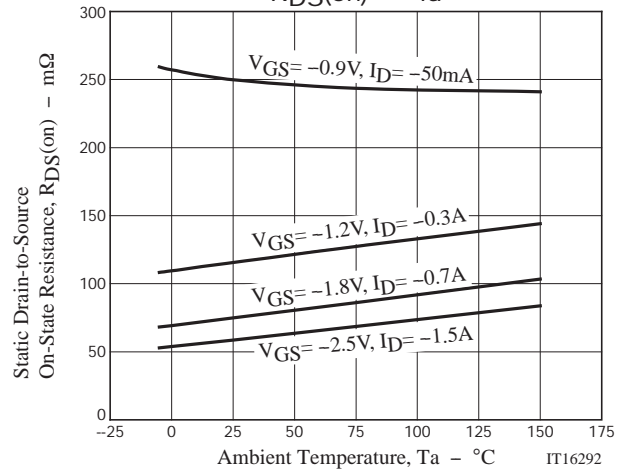
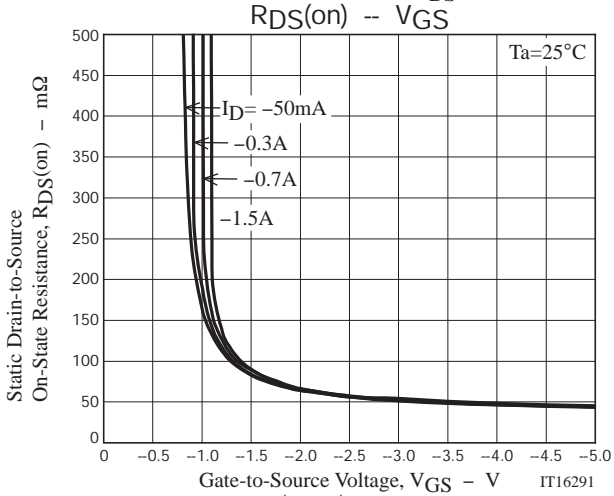
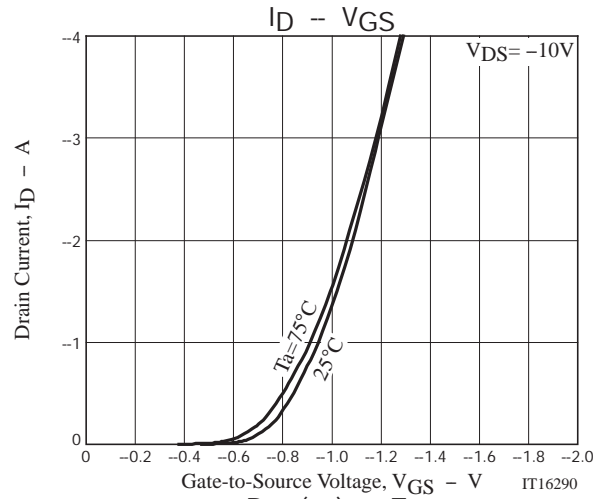
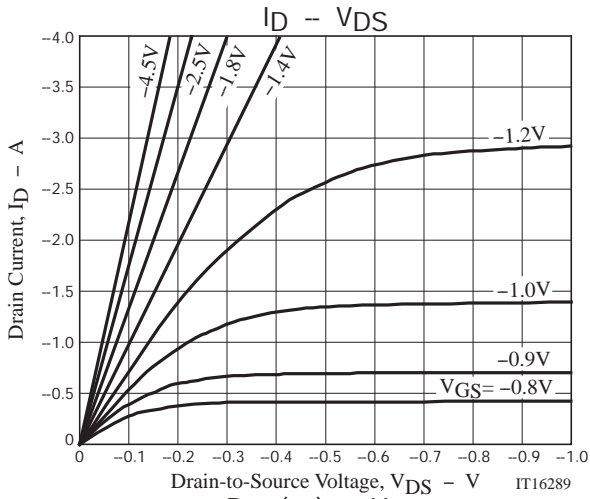
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V(BR)DSS	I _D =-1mA, V _{GS} =0V	-12			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =-12V, V _{GS} =0V			-10	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±4V, V _{DS} =0V			±10	μA
Cutoff Voltage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

Switching Time Test Circuit

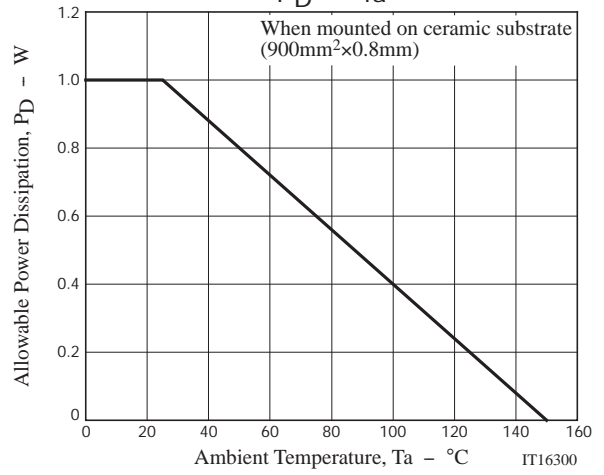
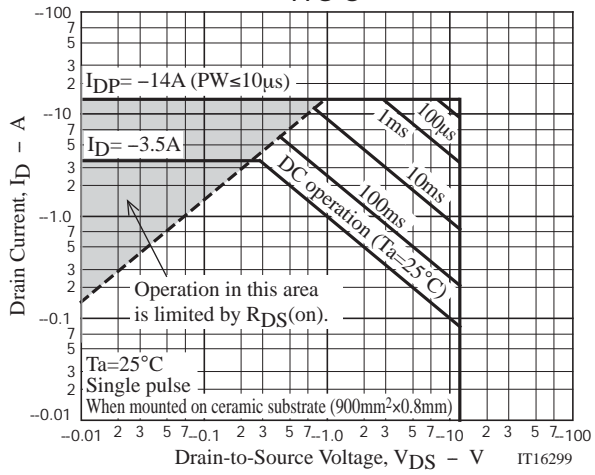
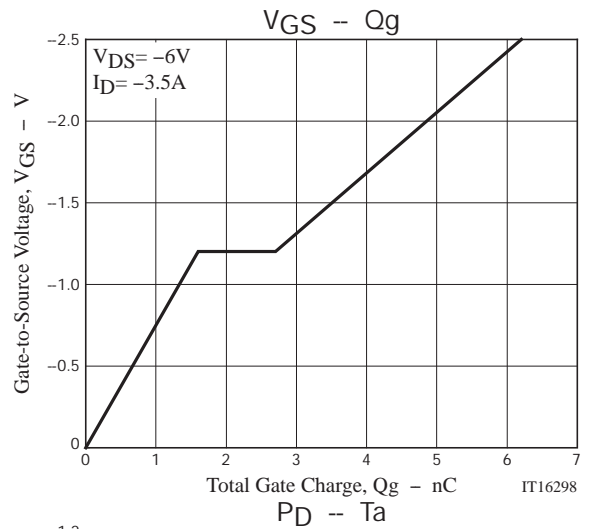
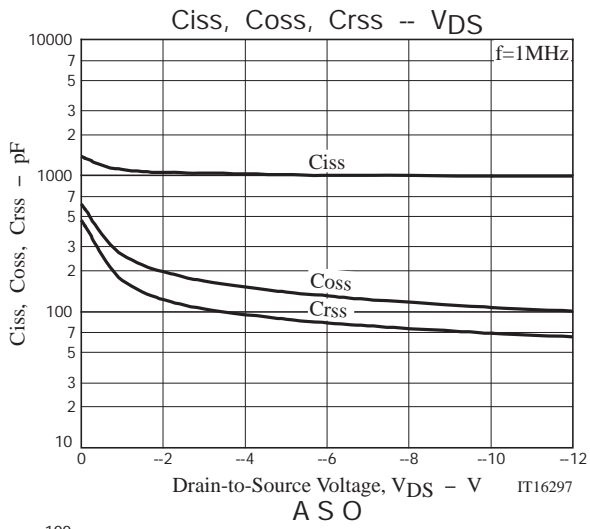


Ordering Information

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



MCH3383



Taping Specification

MCH3383-TL-H

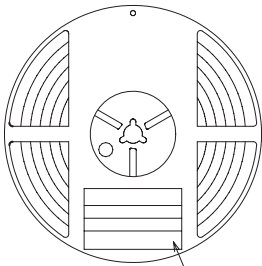
1. Packing Format

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

Reel label, Inner box label
(unit: mm)

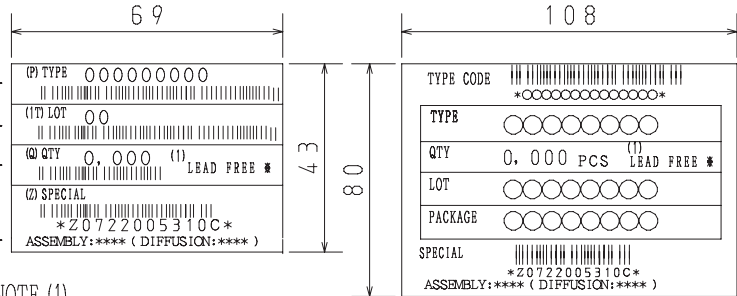
Outer box label
It is a label at the time of factory shipments.
The form of a label may change in physical distribution process.

Packing method



Type No.
LOT No.
Quantity
Origin

Reel label



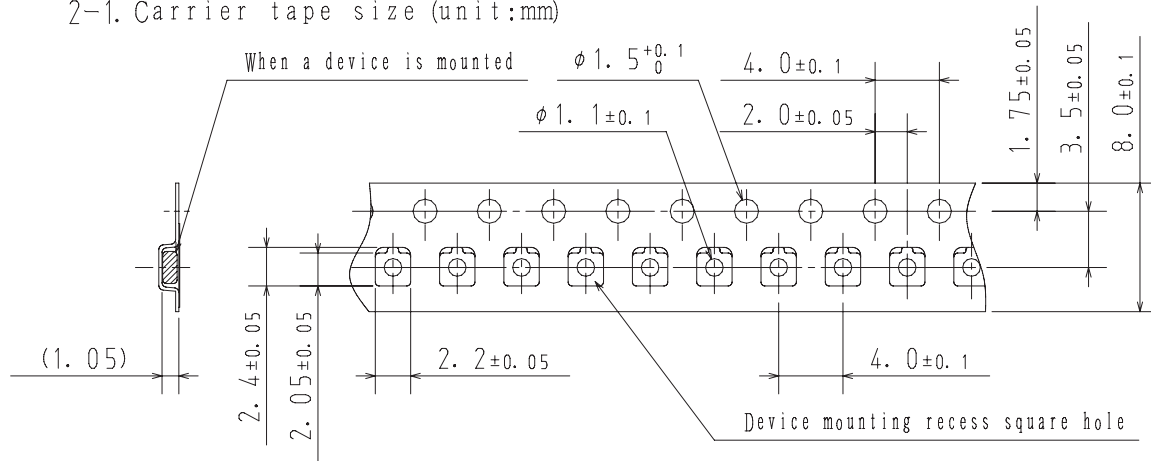
NOTE (1)

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

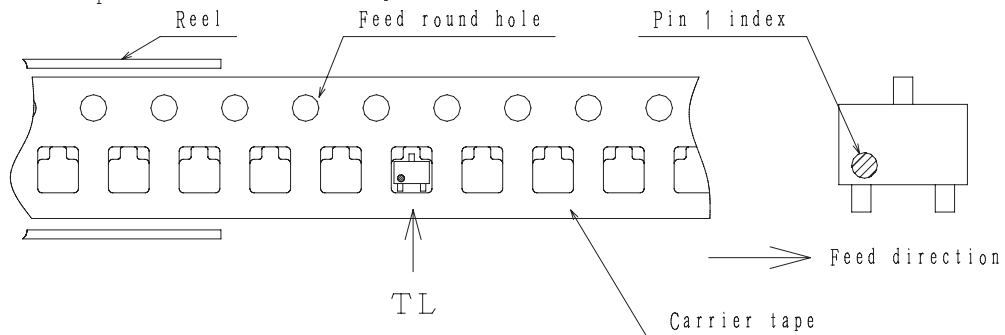
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



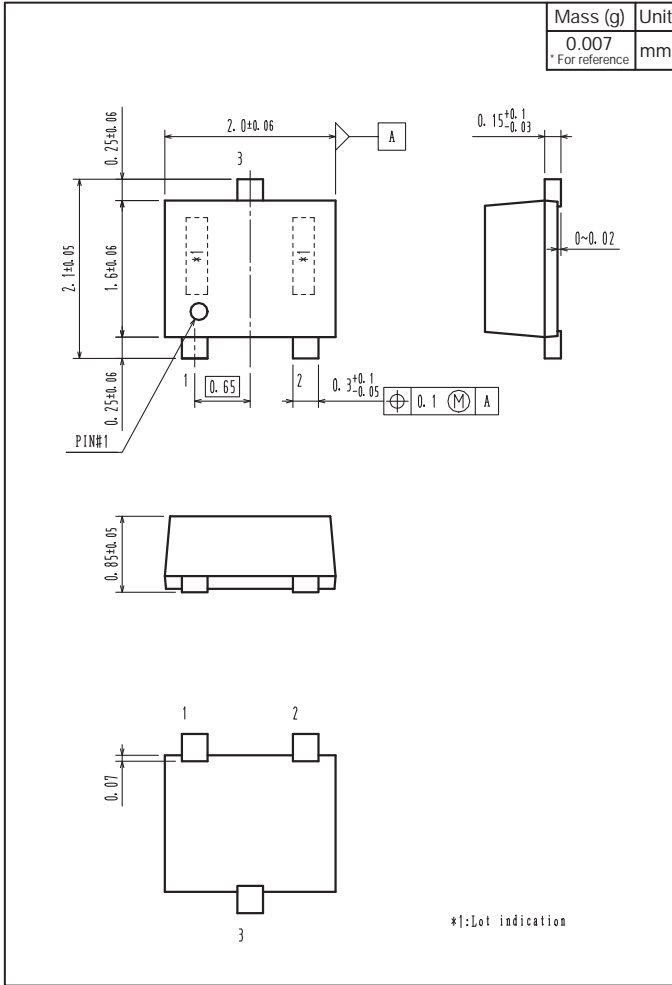
2-2. Device placement direction



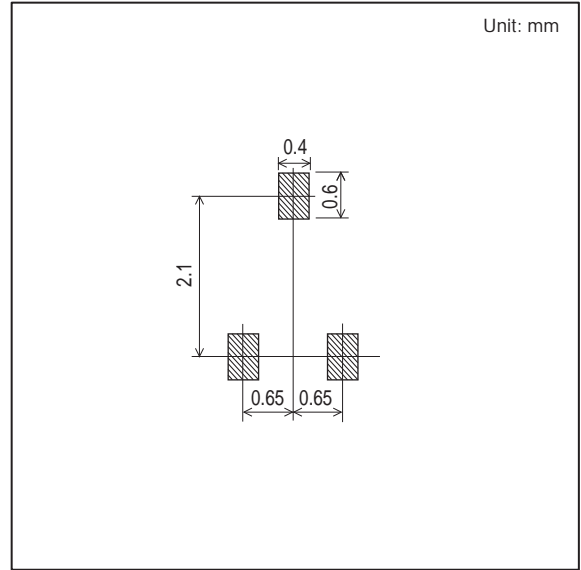
Those with pin 1 index on the feed hole side.....TL

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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