



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

P-Channel Silicon MOSFET

MCH6603 — 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
- Halogen free compliance

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		-50	V
Gate-to-Source Voltage	V _{GSS}		±10	V
Drain Current (DC)	I _D		-0.14	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	-0.56	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

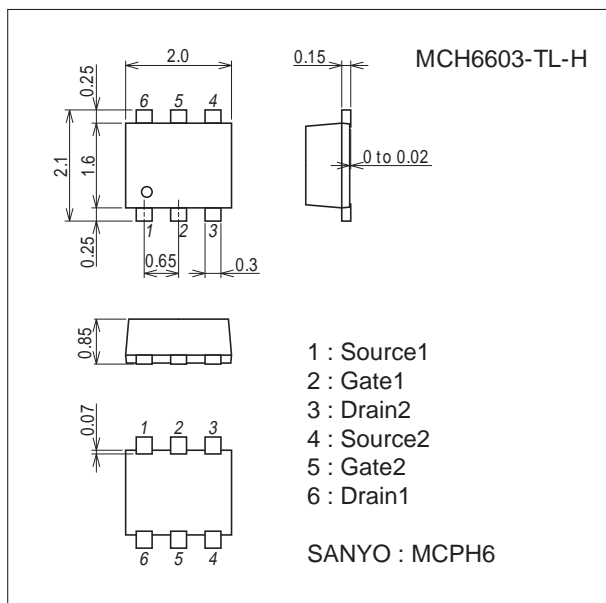
This product is designed to "ESD immunity < 200V**", so please take care when handling.

* Machine Model

Package Dimensions

unit : mm (typ)

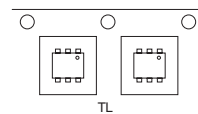
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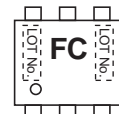
Product & Package Information

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

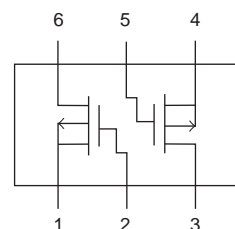
Packing Type : TL



Marking



Electrical Connection



SANYO Semiconductor Co., Ltd.

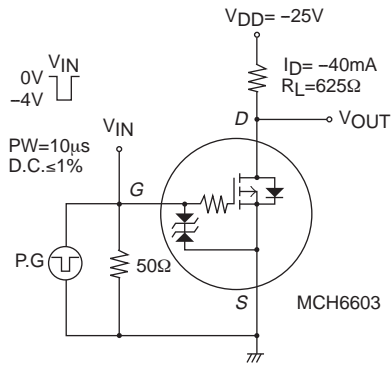
<http://semicon.sanyo.com/en/network>

MCH6603

Electrical Characteristics at Ta=25°C

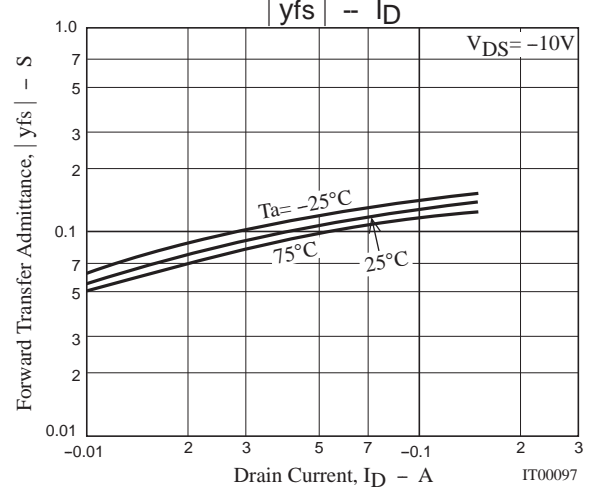
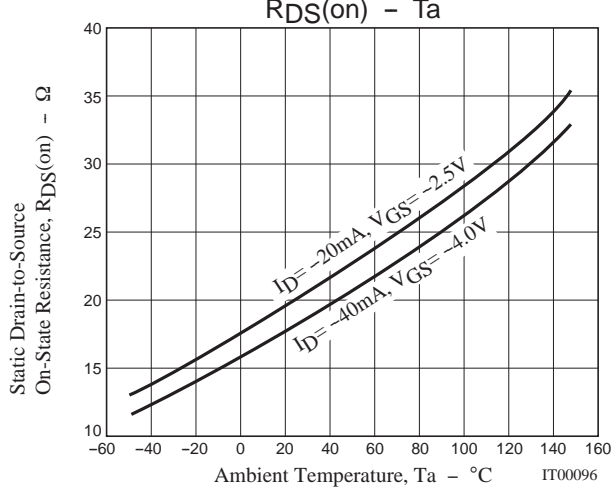
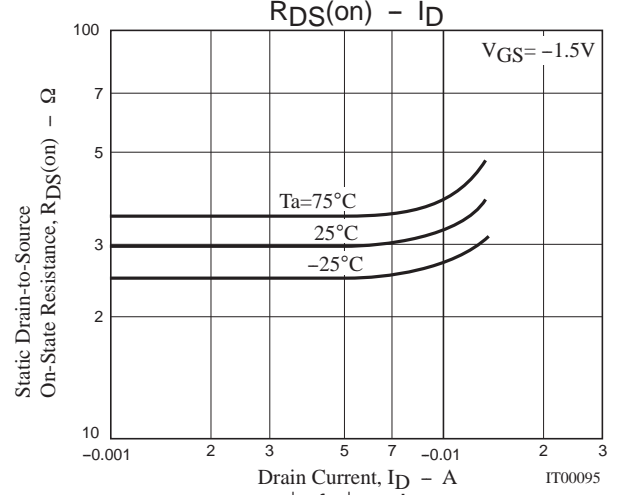
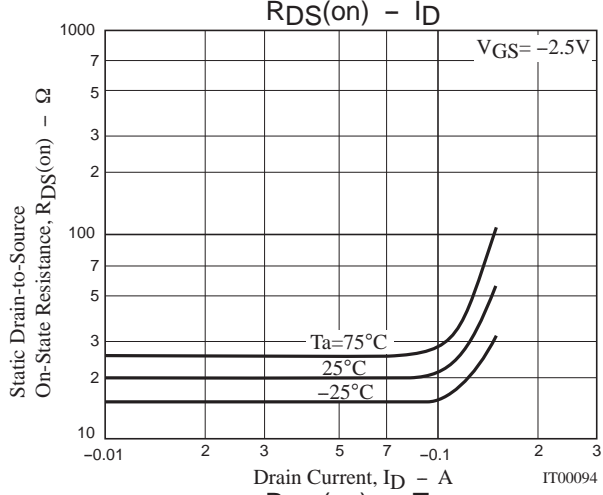
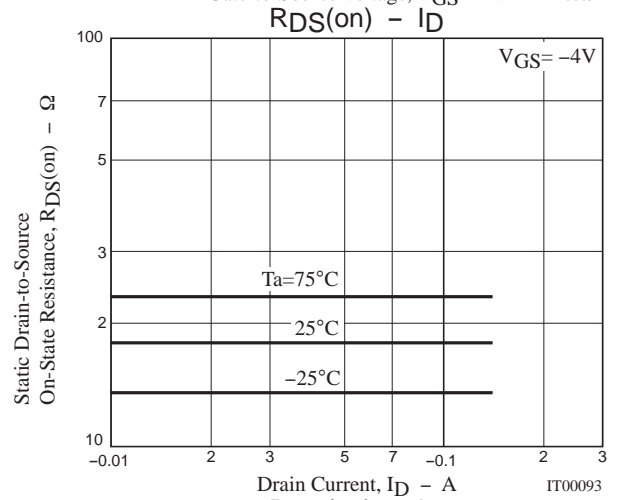
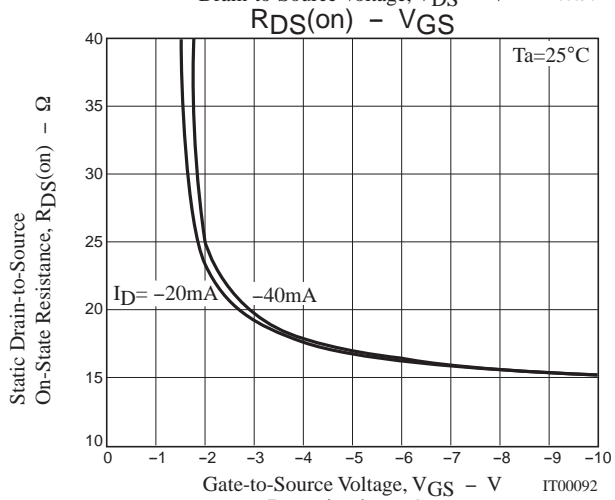
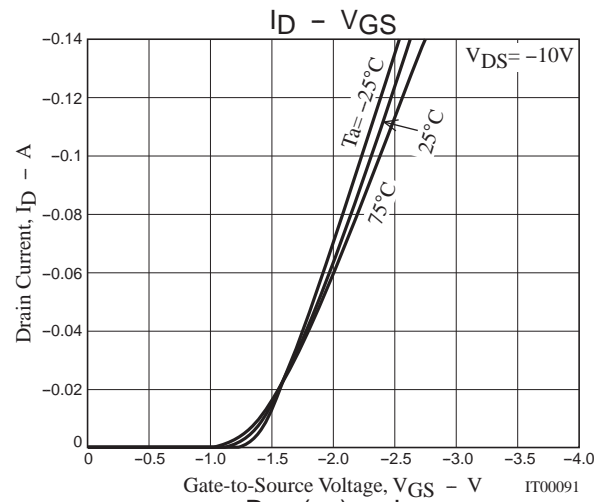
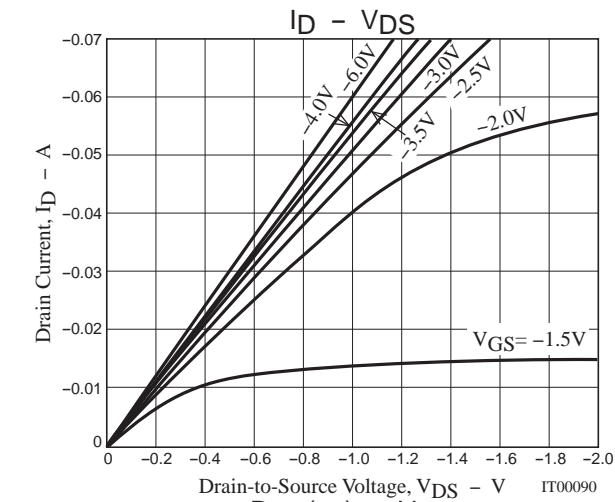
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1\text{mA}$, $V_{GS} = 0\text{V}$	-50			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -50\text{V}$, $V_{GS} = 0\text{V}$			-1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 8\text{V}$, $V_{DS} = 0\text{V}$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -10\text{V}$, $I_D = -100\mu\text{A}$	-0.4		-1.4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -10\text{V}$, $I_D = -40\text{mA}$	70	110		mS
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = -40\text{mA}$, $V_{GS} = -4\text{V}$		18	23	Ω
	$R_{DS(on)2}$	$I_D = -20\text{mA}$, $V_{GS} = -2.5\text{V}$		20	28	Ω
	$R_{DS(on)3}$	$I_D = -5\text{mA}$, $V_{GS} = -1.5\text{V}$		30	60	Ω
Input Capacitance	C_{iss}	$V_{DS} = -10\text{V}$, $f = 1\text{MHz}$		7.4		pF
Output Capacitance	C_{oss}			4.2		pF
Reverse Transfer Capacitance	C_{rss}			1.3		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		20		ns
Rise Time	t_r			35		ns
Turn-OFF Delay Time	$t_d(off)$			160		ns
Fall Time	t_f			150		ns
Total Gate Charge	Q_g	$V_{DS} = -10\text{V}$, $V_{GS} = -10\text{V}$, $I_D = -70\text{mA}$		1.40		nC
Gate-to-Source Charge	Q_{gs}			0.16		nC
Gate-to-Drain "Miller" Charge	Q_{gd}			0.23		nC
Diode Forward Voltage	V_{SD}	$I_S = -70\text{mA}$, $V_{GS} = 0\text{V}$		-0.85	-1.2	V

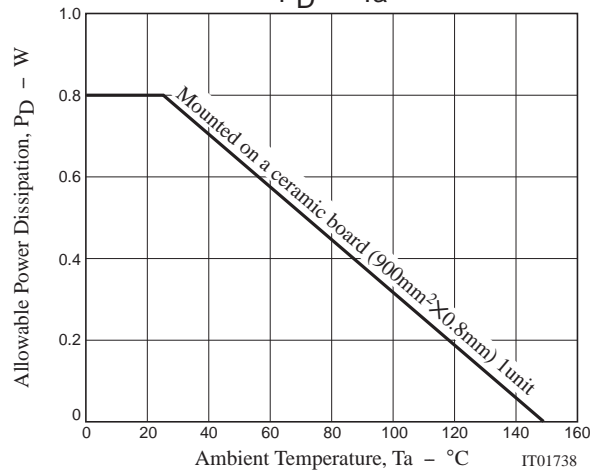
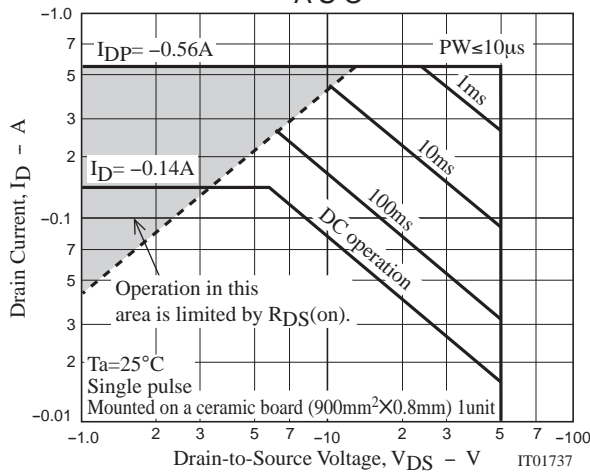
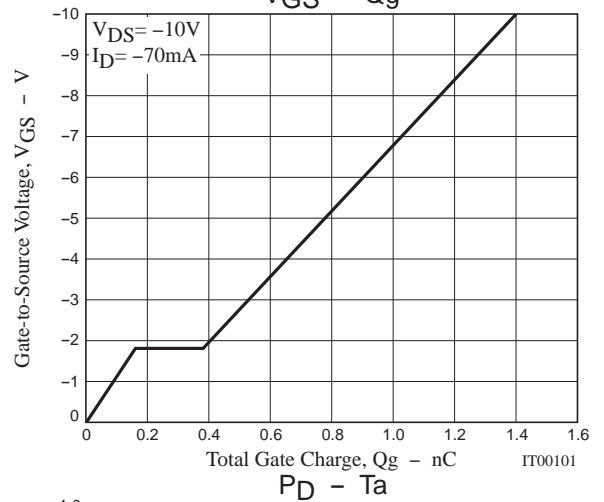
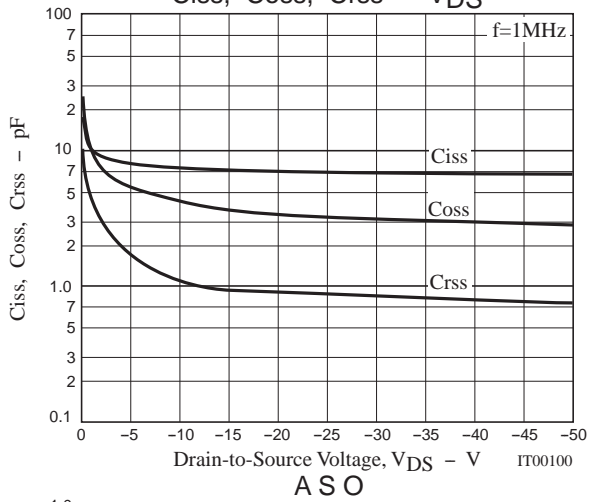
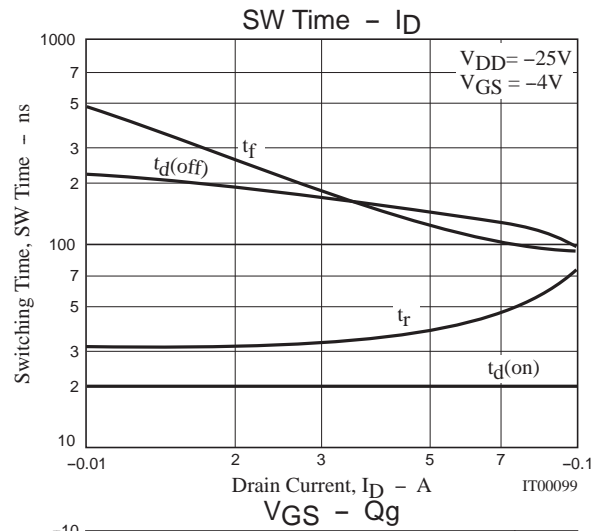
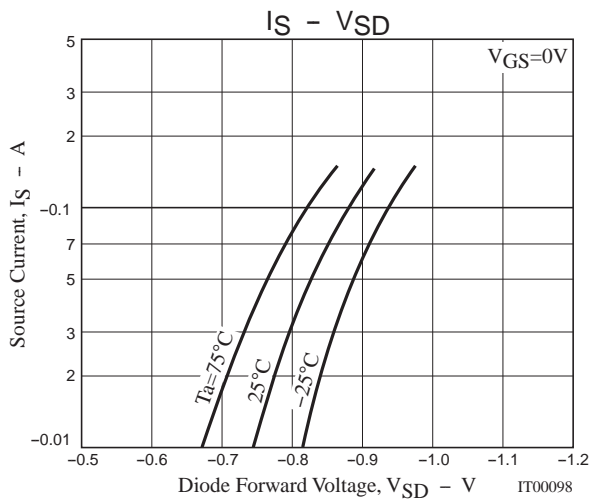
Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
MCH6603-TL-H	MCPH6	3,000pcs./reel	Pb Free and Halogen Free





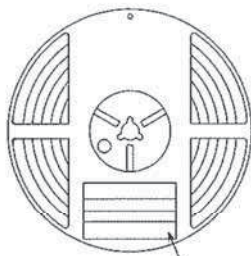
Taping Specification

MCH6603-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)
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

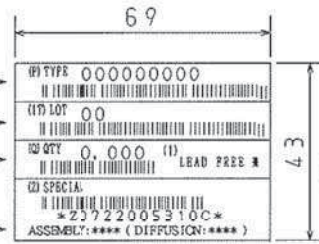
Packing method



Reel label

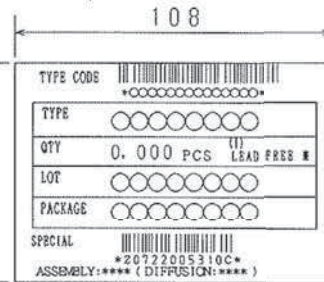
Type No.
LOT No.
Quantity
Origin

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.)



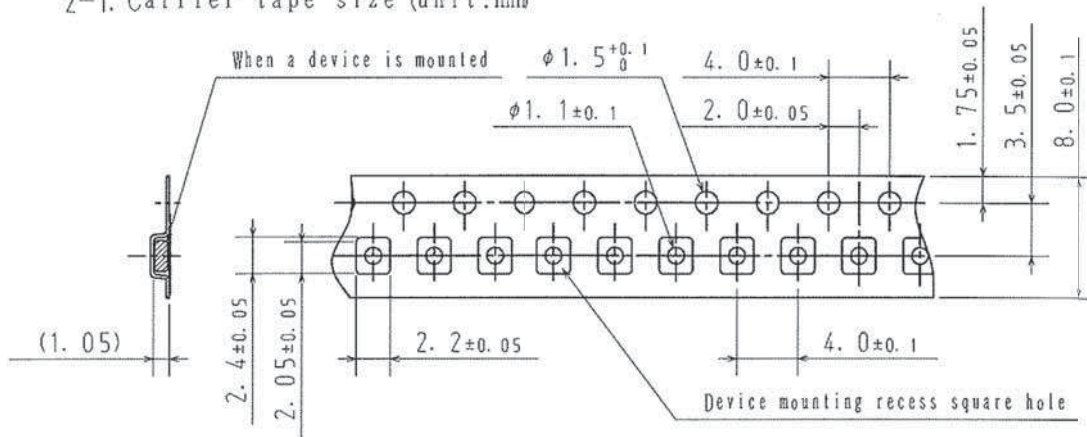
NOTE (1)

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

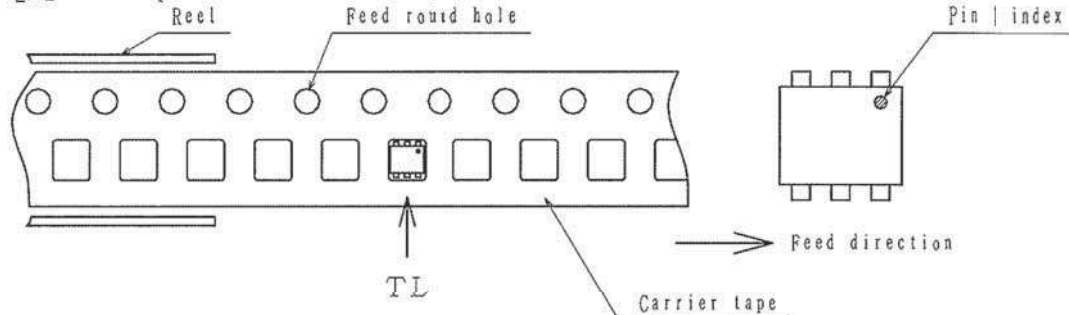
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



2-2. Device placement direction



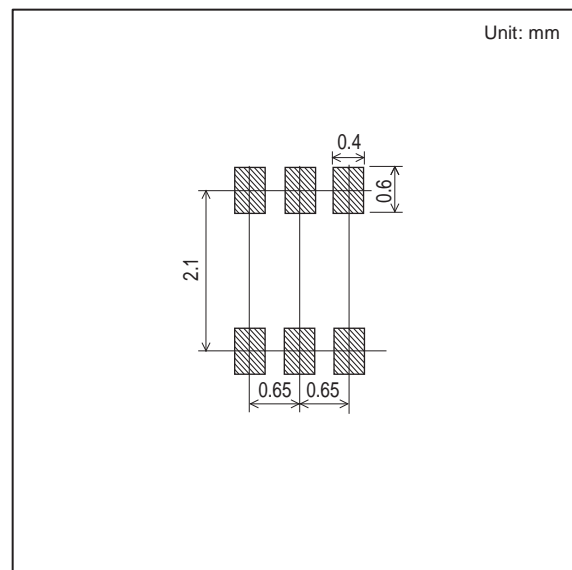
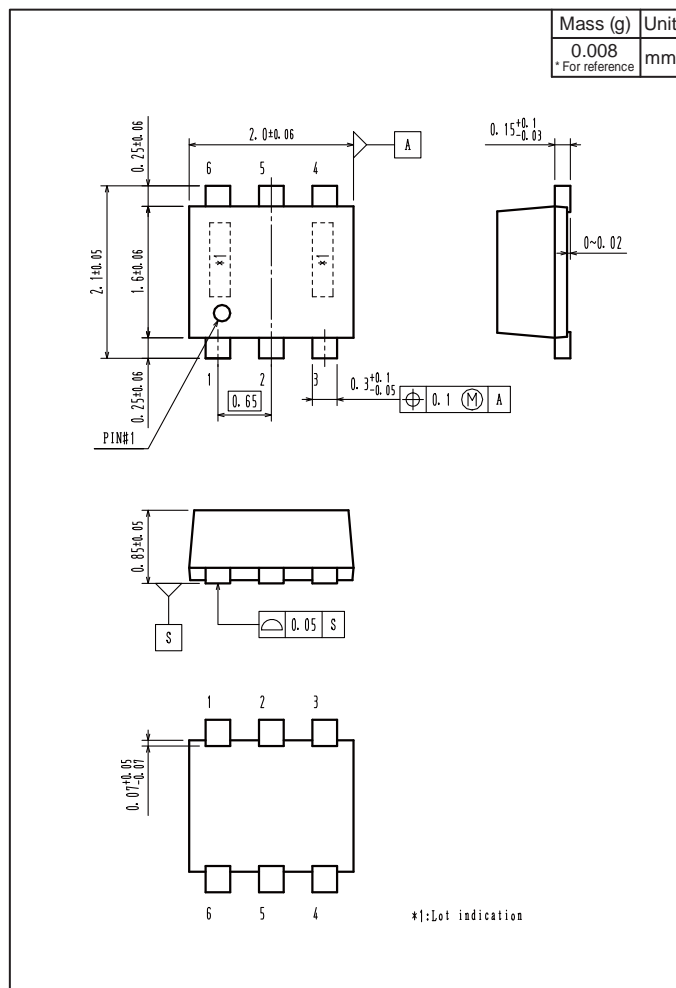
Those with pin 1 index on the feed hole side.....TL

MCH6603

Outline Drawing

MCH6603-TL-H

Land Pattern Example



Note on usage : Since the MCH6603 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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