



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

MCH3376 — P-Channel Silicon MOSFET — General-Purpose Switching Device Applications

Features

- Low ON-resistance
- 1.8V drive
- Protection diode in

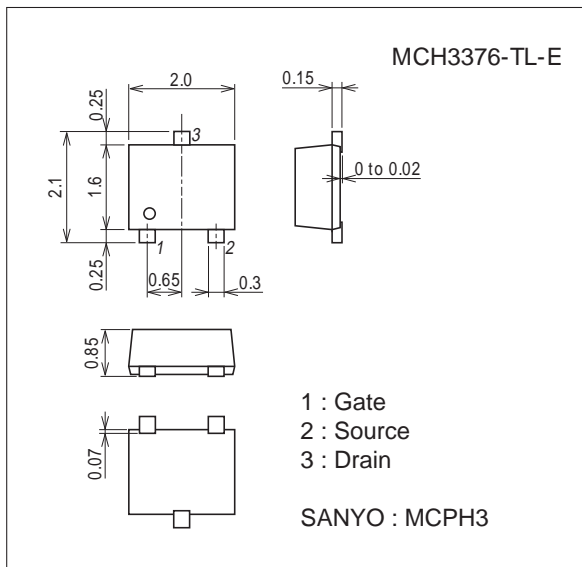
Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		-20	V
Gate-to-Source Voltage	V _{GSS}		±10	V
Drain Current (DC)	I _D		-1.5	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	-6	A
Allowable Power Dissipation	P _D	When mounted on ceramic substrate (900mm ² ×0.8mm)	0.8	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

Package Dimensions

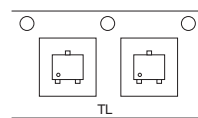
unit : mm (typ)
7019A-003



Product & Package Information

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

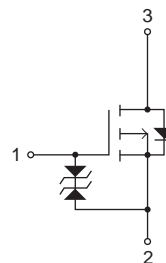
Packing Type: TL



Marking



Electrical Connection

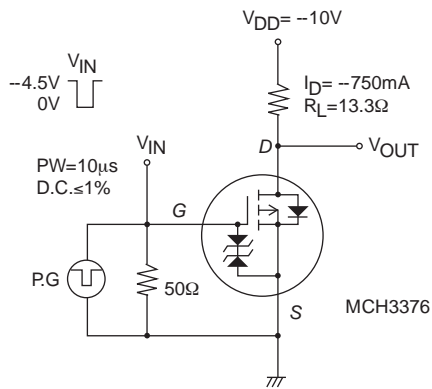


MCH3376

Electrical Characteristics at $T_a=25^\circ\text{C}$

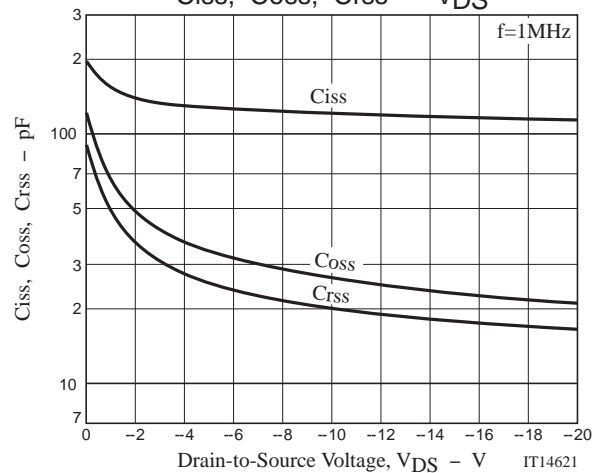
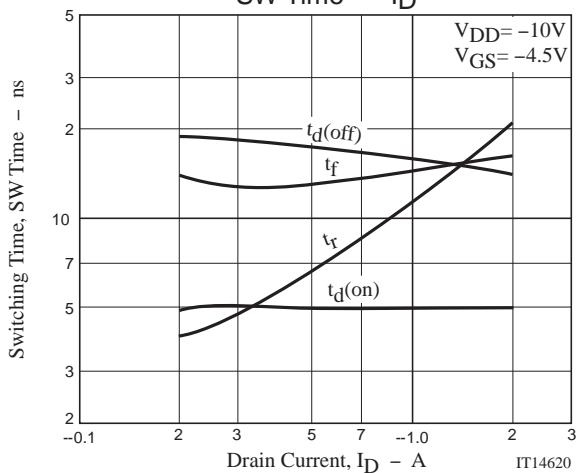
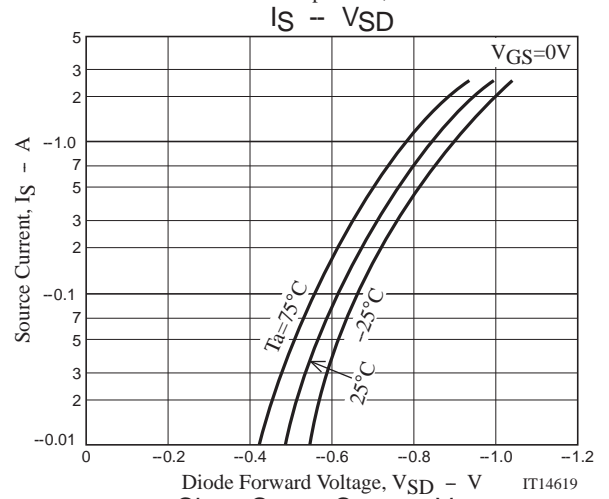
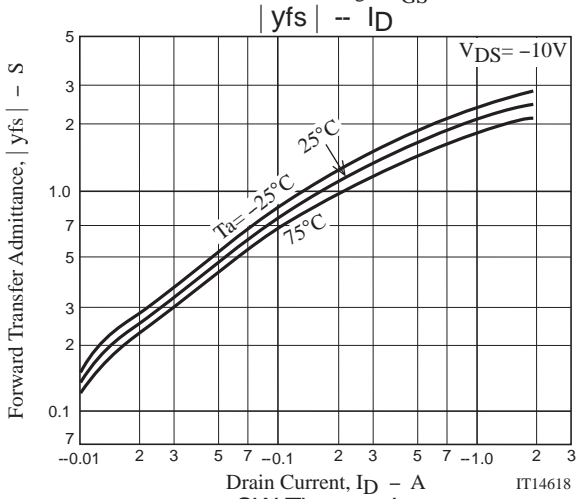
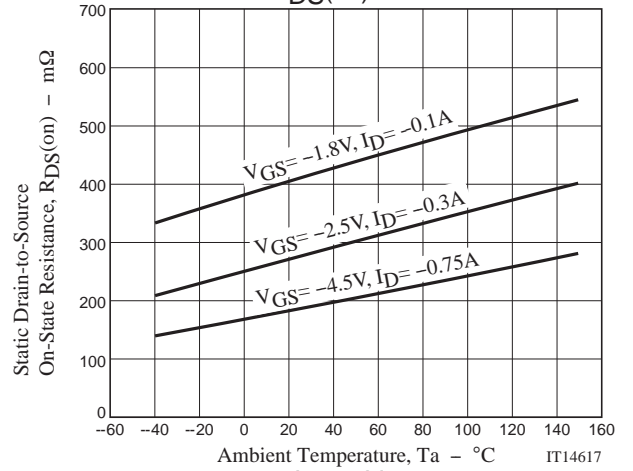
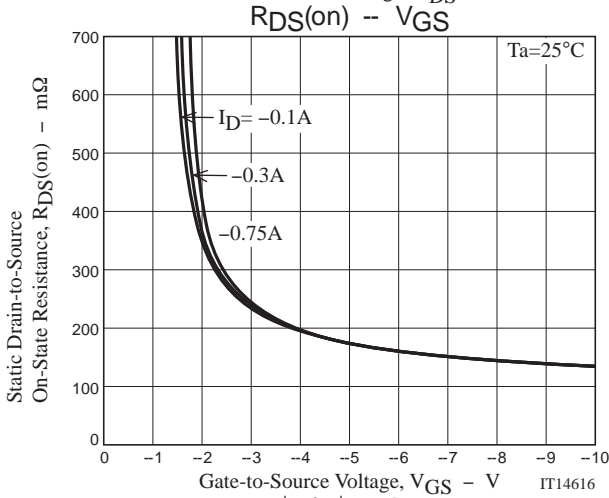
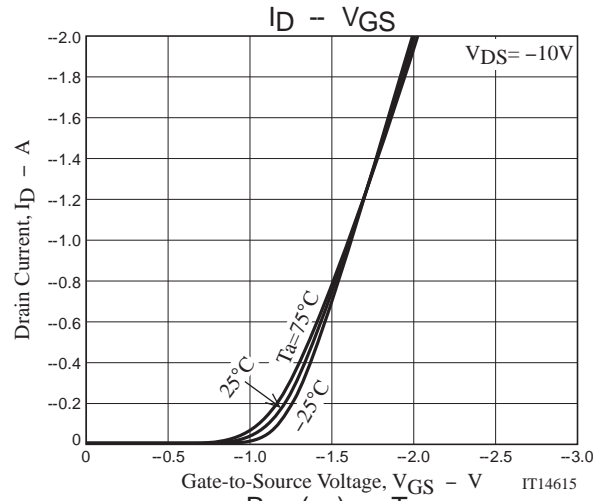
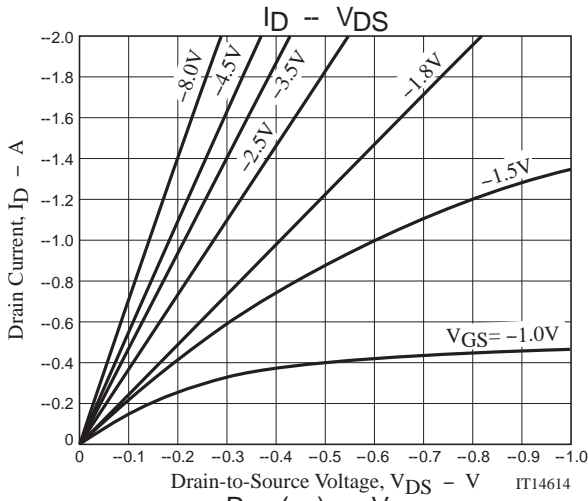
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=-1\text{mA}, V_{GS}=0\text{V}$	-30			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-30\text{V}, V_{GS}=0\text{V}$			-1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 16\text{V}, V_{DS}=0\text{V}$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=-10\text{V}, I_D=-1\text{mA}$	-1.2		-2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=-10\text{V}, I_D=-0.8\text{A}$		1.3		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=-0.8\text{A}, V_{GS}=-10\text{V}$		227	295	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D=-0.4\text{A}, V_{GS}=-4.5\text{V}$		374	523	$\text{m}\Omega$
	$R_{DS(on)3}$	$I_D=-0.4\text{A}, V_{GS}=-4\text{V}$		435	609	$\text{m}\Omega$
Input Capacitance	C_{iss}			82		pF
Output Capacitance	C_{oss}	$V_{DS}=-10\text{V}, f=1\text{MHz}$		22		pF
Reverse Transfer Capacitance	C_{rss}			16		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		4.0		ns
Rise Time	t_r			3.3		ns
Turn-OFF Delay Time	$t_d(off)$			12		ns
Fall Time	t_f			5.4		ns
Total Gate Charge	Q_g				2.2	
Gate-to-Source Charge	Q_{gs}	$V_{DS}=-15\text{V}, V_{GS}=-10\text{V}, I_D=-1.6\text{A}$		0.36		nC
Gate-to-Drain "Miller" Charge	Q_{gd}			0.49		nC
Diode Forward Voltage	V_{SD}	$I_S=-1.6\text{A}, V_{GS}=0\text{V}$		-0.9	-1.5	V

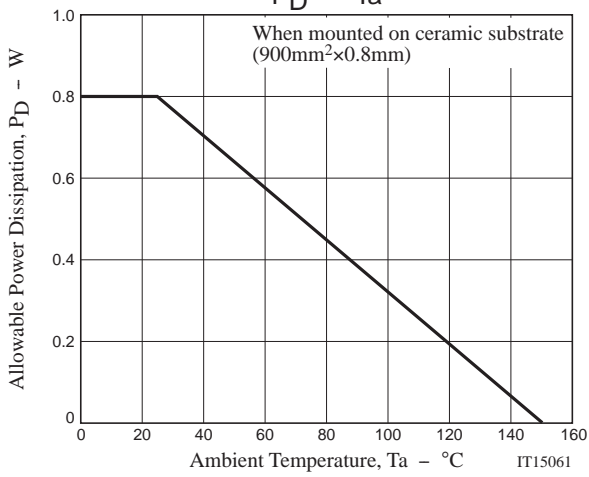
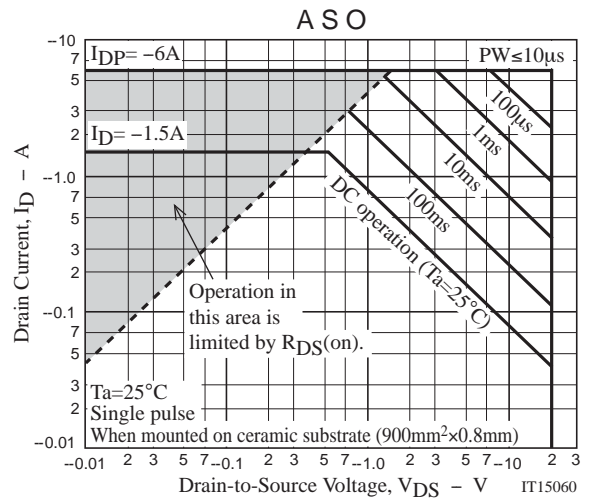
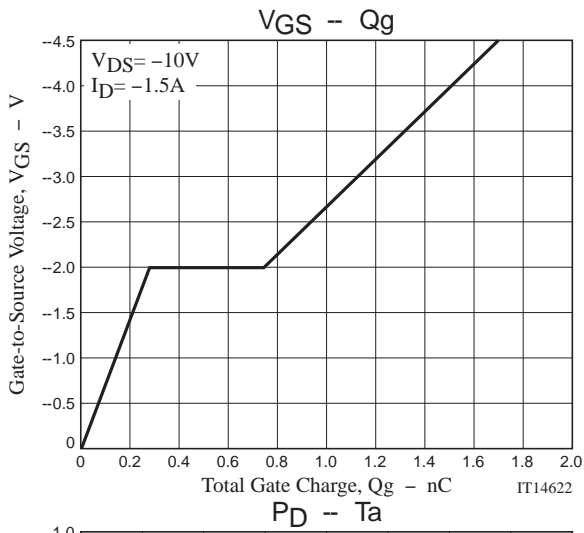
Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
MCH3376-TL-E	MCPH3	3,000pcs./reel	Pb Free





MCH3376

Taping Specification

MCH3376-TL-E

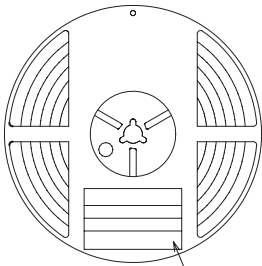
1. Packing Format

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)

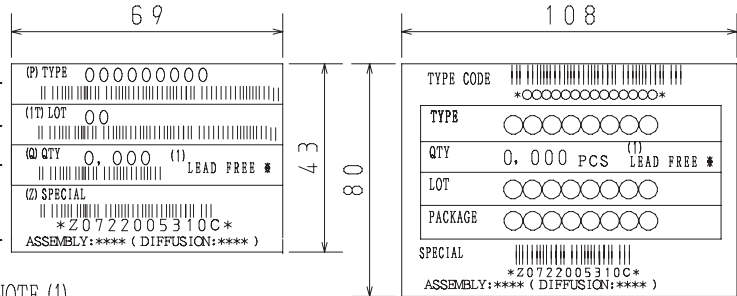
Outer box label
It is a label at the time of factory shipments.
The form of a label may change in physical distribution process.

Packing method



Type No.
LOT No.
Quantity
Origin

Reel label



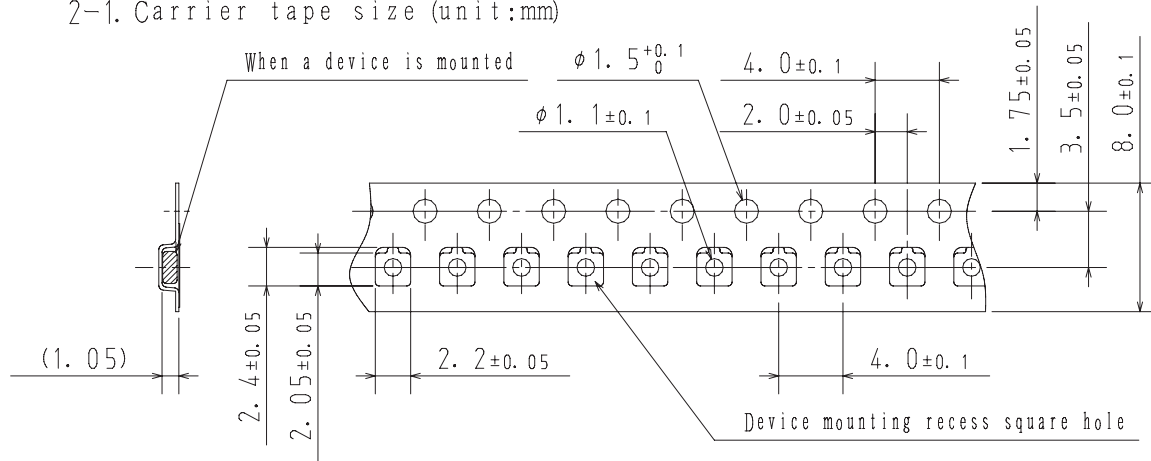
NOTE (1)

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

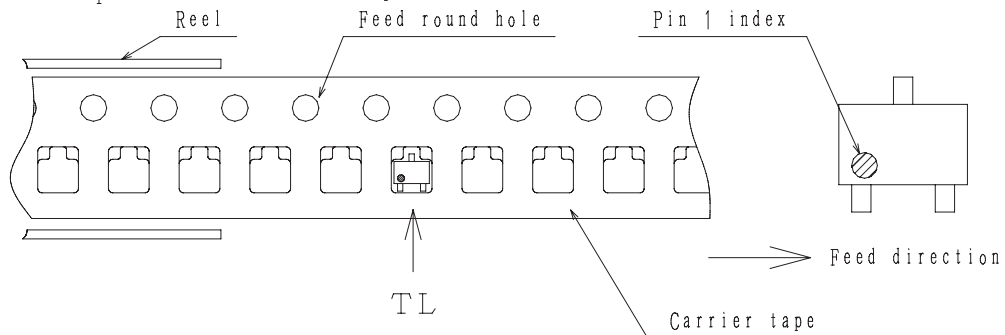
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



2-2. Device placement direction

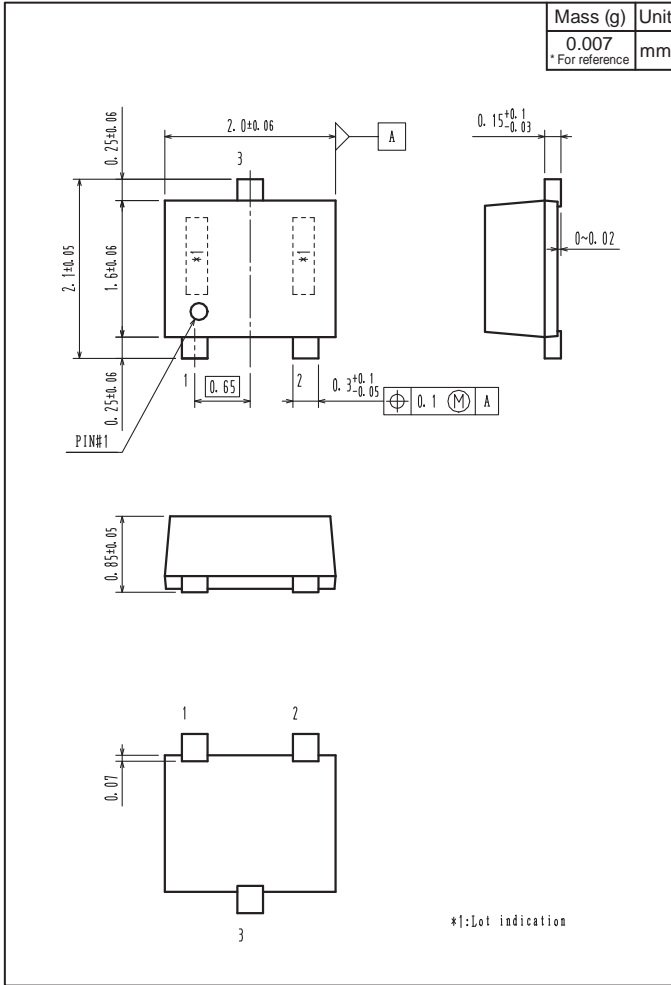


Those with pin 1 index on the feed hole side.....TL

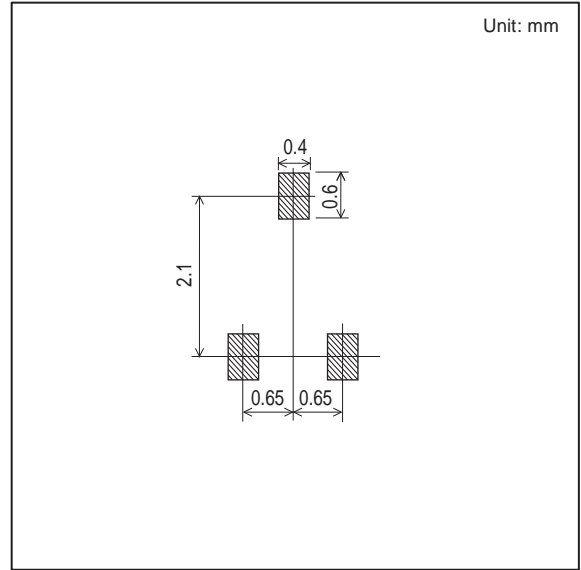
MCH3376

Outline Drawing

MCH3376-TL-E



Land Pattern Example



Note on usage : Since the MCH3376 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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