



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

P-Channel Silicon MOSFET

MCH6321 — General-Purpose Switching Device Applications

Features

- 1.8V drive
- Protection diode in

Specifications

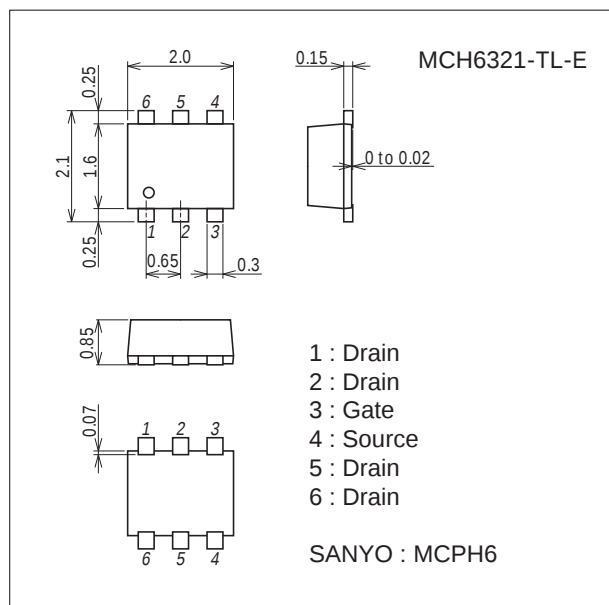
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DS}		-20	V
Gate-to-Source Voltage	V_{GS}		±10	V
Drain Current (DC)	I_D		-4	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu s$, duty cycle $\leq 1\%$	-16	A
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (1200mm ² ×0.8mm)	1.5	W
Channel Temperature	T_{ch}		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

Package Dimensions

unit : mm (typ)

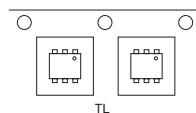
7022A-009



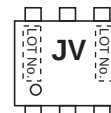
Product & Package Information

- Package : MCHP6
- JEITA, JEDEC : SC-88, SC-70-6, SOT-363
- Minimum Packing Quantity : 3,000 pcs./reel

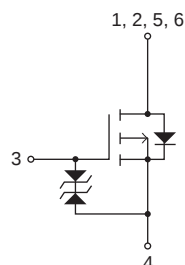
Packing Type : TL



Marking



Electrical Connection

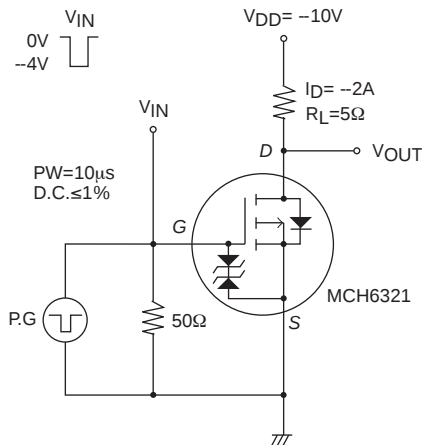


MCH6321

Electrical Characteristics at Ta=25°C

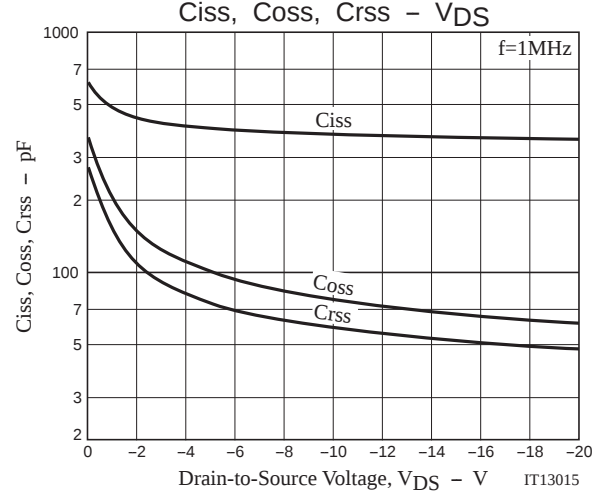
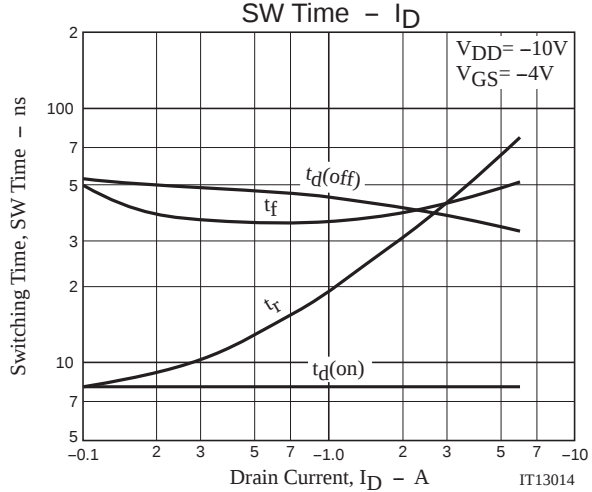
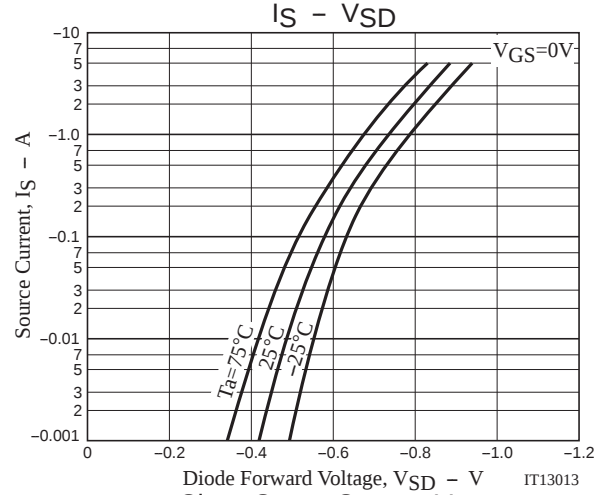
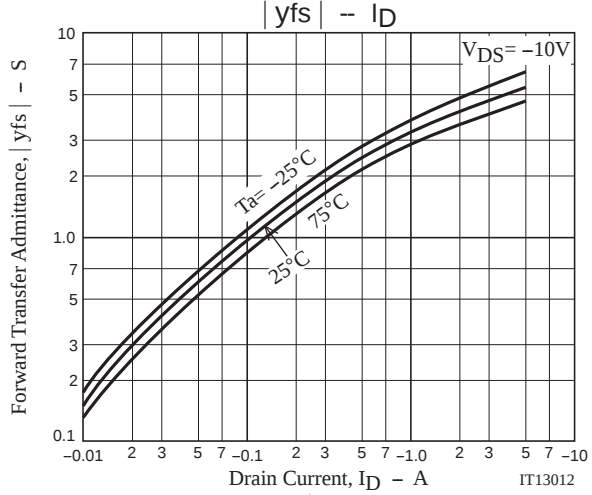
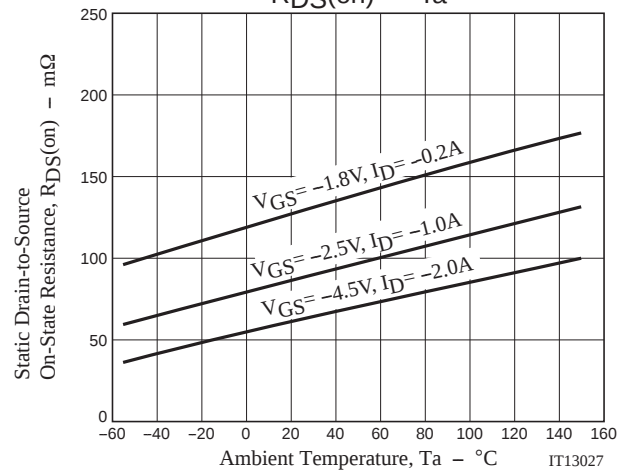
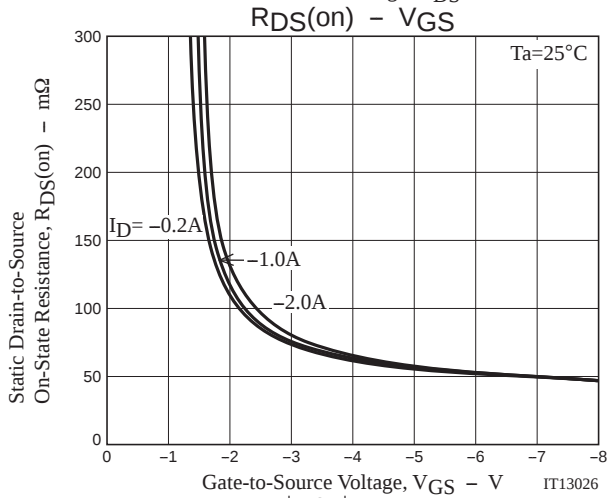
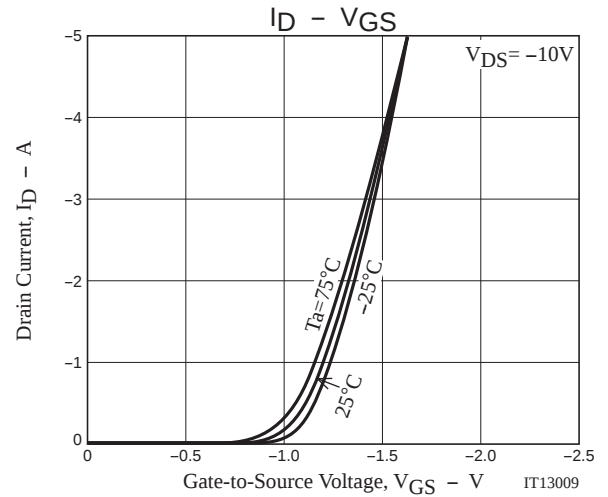
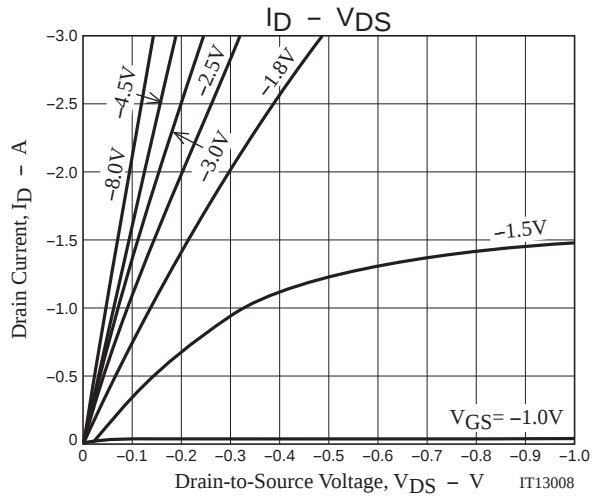
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1mA, V_{GS} = 0V$	-20			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -20V, V_{GS} = 0V$			-1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 8V, V_{DS} = 0V$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -10V, I_D = -1mA$	-0.4		-1.3	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -10V, I_D = -2A$	2.5	4.3		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = -2A, V_{GS} = -4.5V$		63	83	m Ω
	$R_{DS(on)2}$	$I_D = -1A, V_{GS} = -2.5V$		88	125	m Ω
	$R_{DS(on)3}$	$I_D = -0.2A, V_{GS} = -1.8V$		130	200	m Ω
Input Capacitance	C_{iss}	$V_{DS} = -10V, f = 1MHz$		375		pF
Output Capacitance	C_{oss}			77		pF
Reverse Transfer Capacitance	C_{rss}			58		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		8.1		ns
Rise Time	t_r			31		ns
Turn-OFF Delay Time	$t_d(off)$			40		ns
Fall Time	t_f			39		ns
Total Gate Charge	Q_g	$V_{DS} = -10V, V_{GS} = -4.5V, I_D = -4A$		4.6		nC
Gate-to-Source Charge	Q_{gs}			0.8		nC
Gate-to-Drain "Miller" Charge	Q_{gd}			1.3		nC
Diode Forward Voltage	V_{SD}	$I_S = -4A, V_{GS} = 0V$		-0.86	-1.2	V

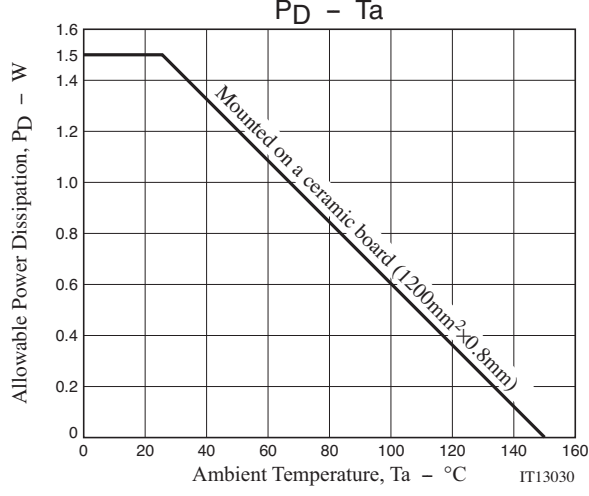
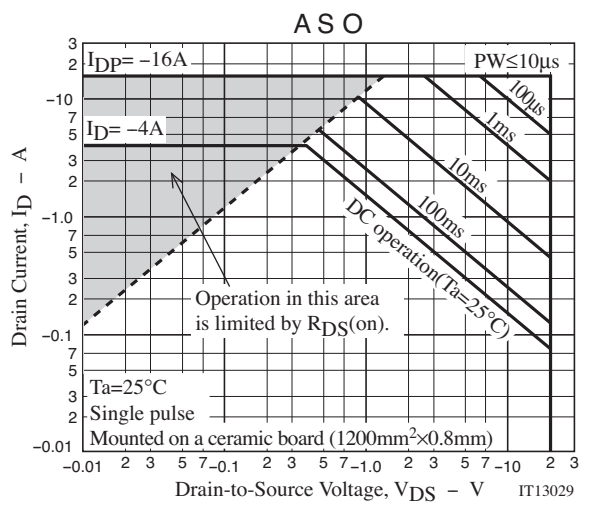
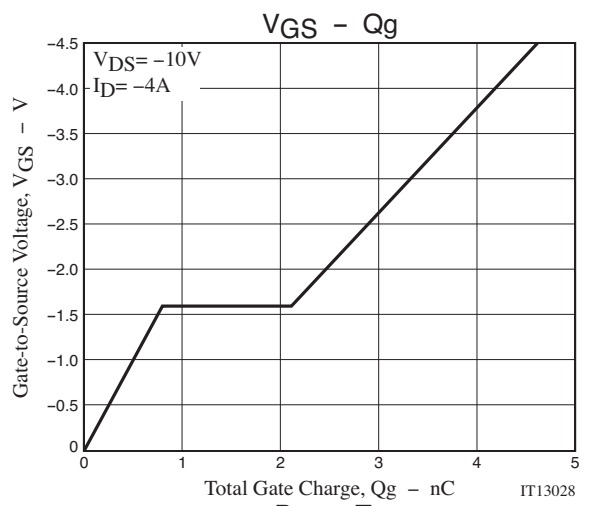
Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
MCH6321-TL-E	MCPH6	3,000pcs./reel	Pb Free





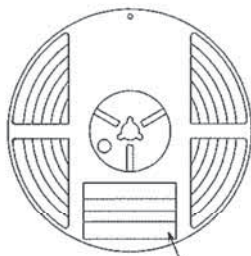
Taping Specification

MCH6321-TL-E

1. Packing Format

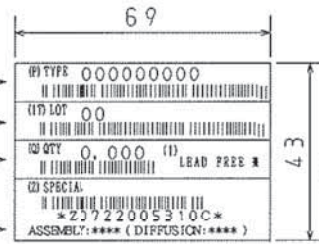
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
MCPH6	MCP4	3,000	15,000	90,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

Packing method



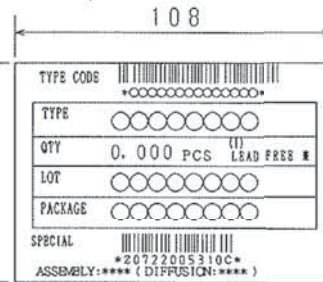
Reel label

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.



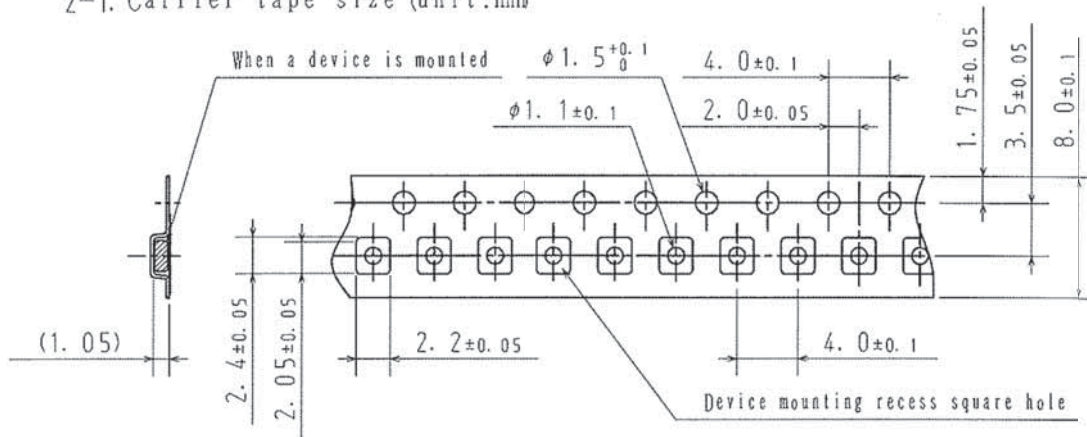
NOTE (1)

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

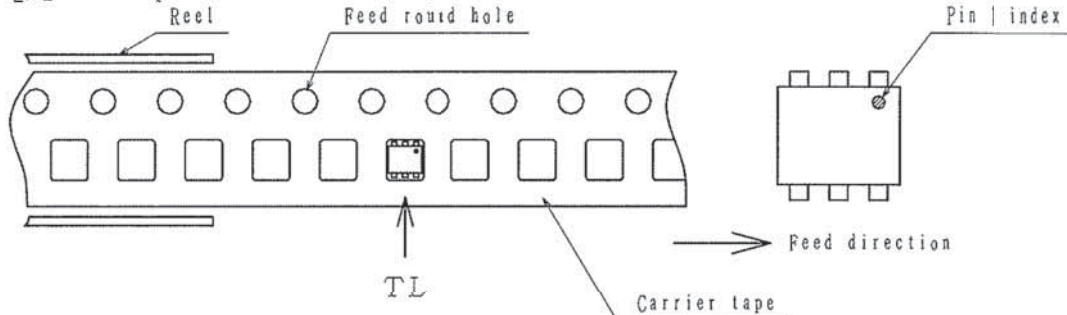
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



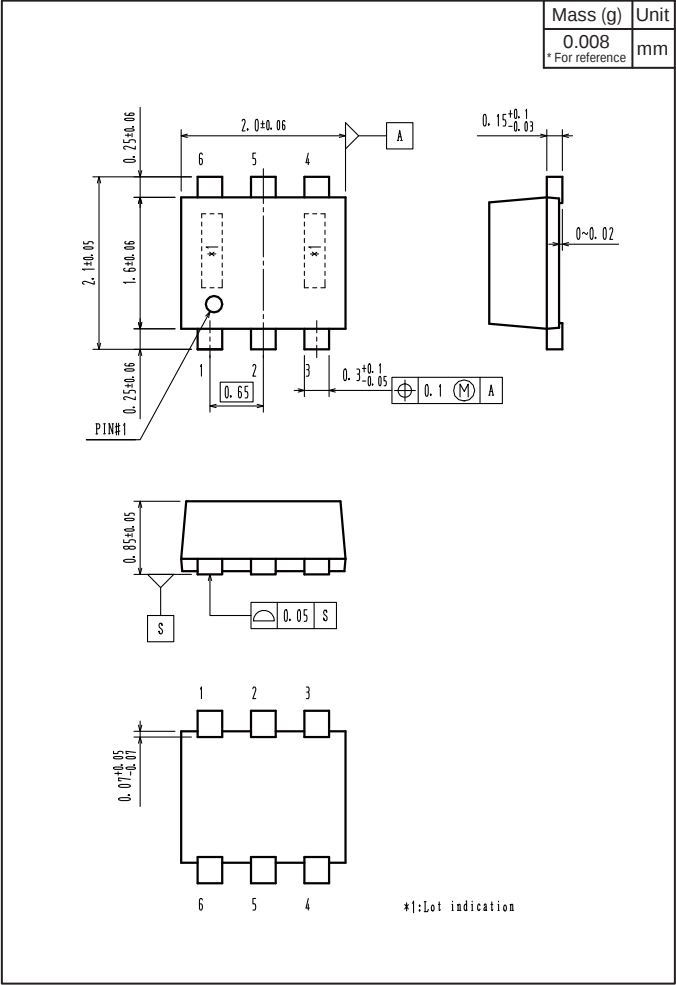
2-2. Device placement direction



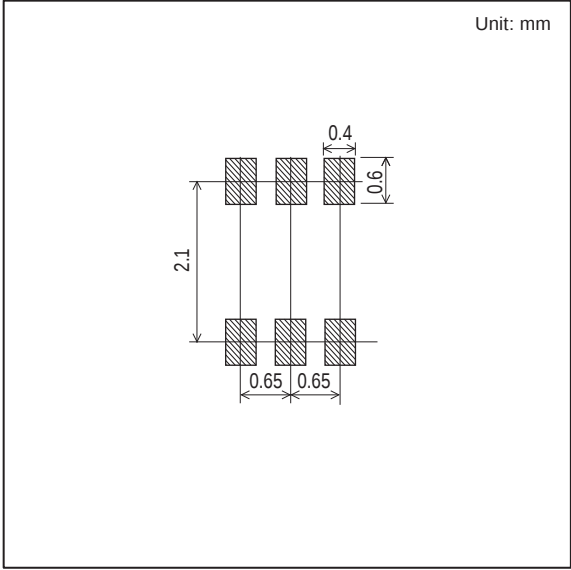
Those with pin 1 index on the feed hole side.....TL

MCH6321

Outline Drawing
MCH6321-TL-E



Land Pattern Example



Note on usage : Since the MCH6321 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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