



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

MCH6320 — P-Channel Silicon MOSFET General-Purpose Switching Device Applications

Features

- Ultrahigh-speed switching
- 1.8V drive

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		-12	V
Gate-to-Source Voltage	V _{GSS}		±10	V
Drain Current (DC)	I _D		-3.5	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	-14	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

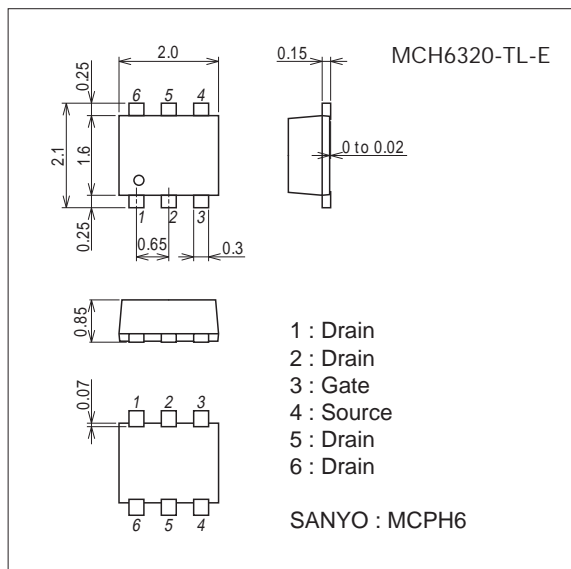
This product is designed to "ESD immunity < 200V"", so please take care when handling.

* Machine Model

Package Dimensions

unit : mm (typ)

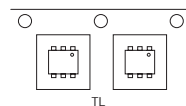
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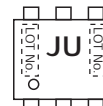
Product & Package Information

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

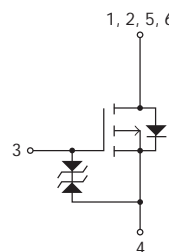
Packing Type : TL



Marking



Electrical Connection

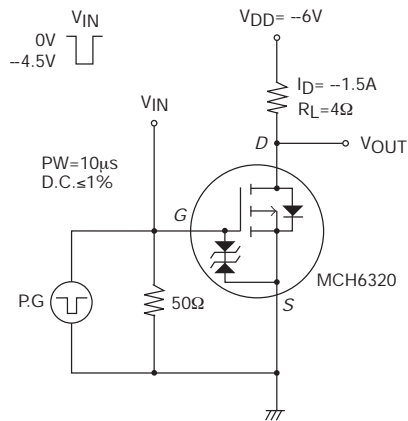


MCH6320

Electrical Characteristics at Ta=25°C

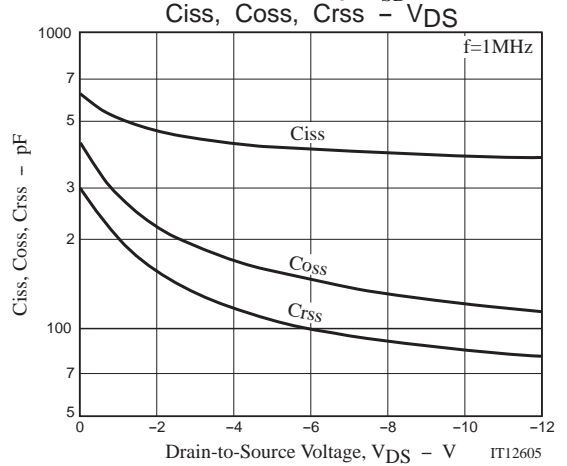
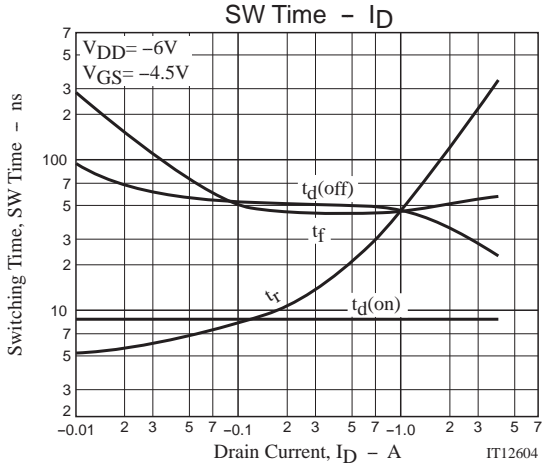
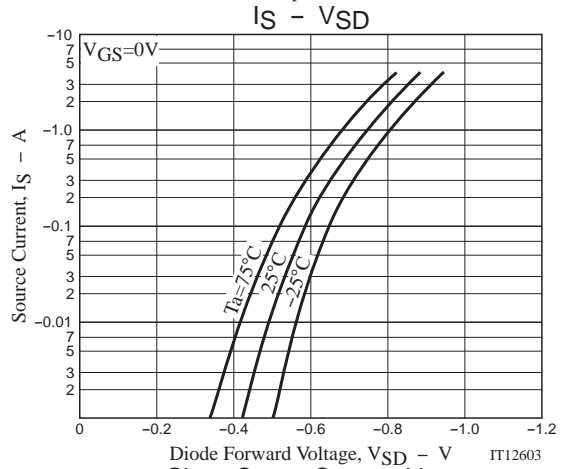
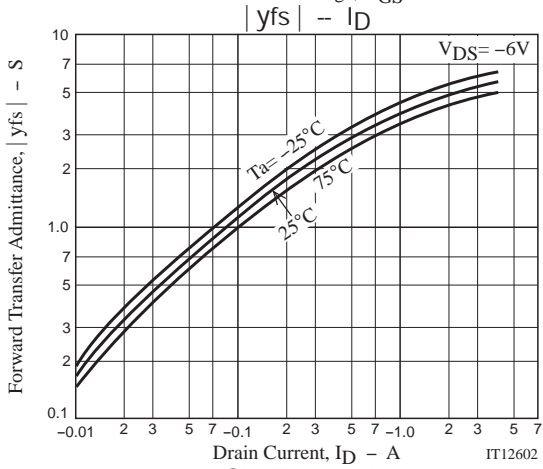
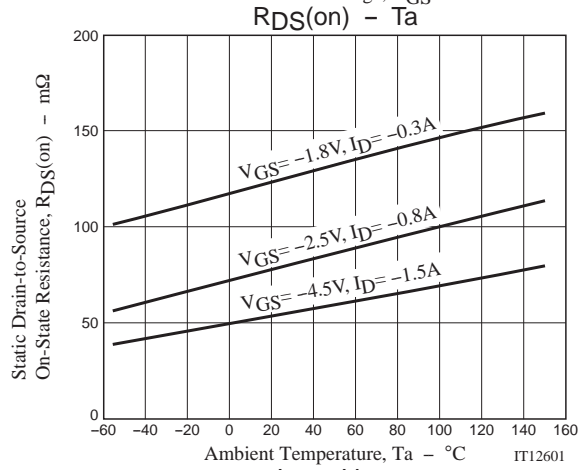
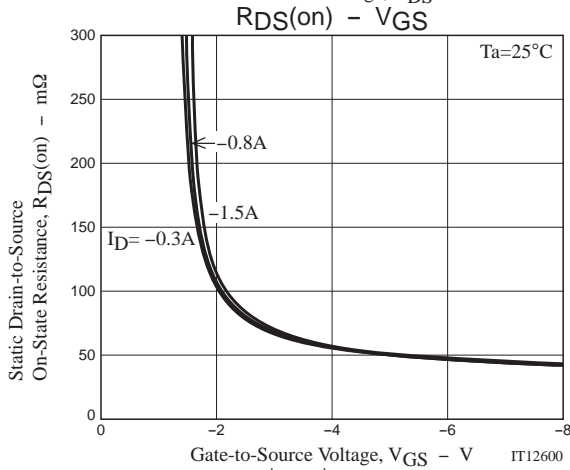
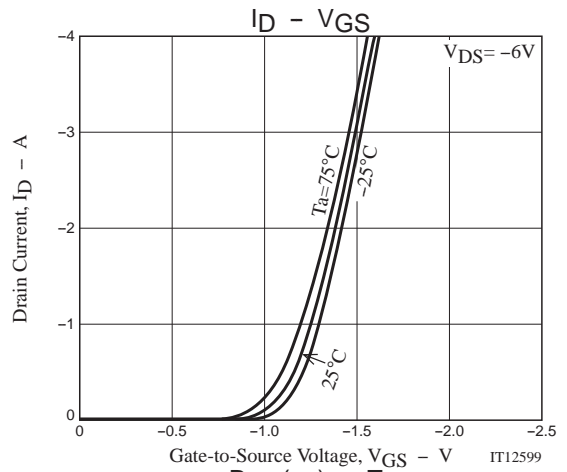
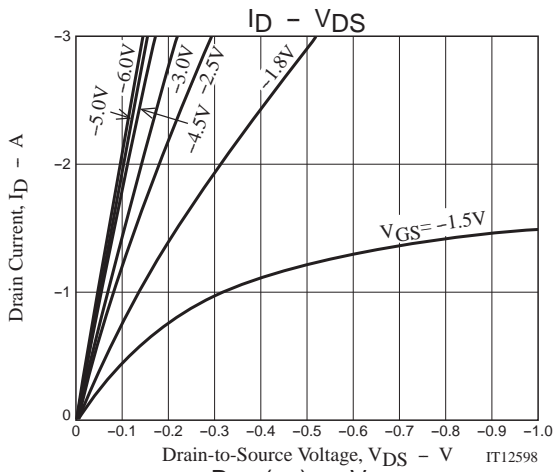
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1\text{mA}$, $V_{GS} = 0\text{V}$	-12			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -12\text{V}$, $V_{GS} = 0\text{V}$			-10	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 8\text{V}$, $V_{DS} = 0\text{V}$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -6\text{V}$, $I_D = -1\text{mA}$	-0.4		-1.4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -6\text{V}$, $I_D = -1.5\text{A}$	2.7	4.5		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = -1.5\text{A}$, $V_{GS} = -4.5\text{V}$		54	70	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D = -0.8\text{A}$, $V_{GS} = -2.5\text{V}$		80	115	$\text{m}\Omega$
	$R_{DS(on)3}$	$I_D = -0.3\text{A}$, $V_{GS} = -1.8\text{V}$		125	215	$\text{m}\Omega$
Input Capacitance	C_{iss}	$V_{DS} = -6\text{V}$, $f = 1\text{MHz}$		405		pF
Output Capacitance	C_{oss}			145		pF
Reverse Transfer Capacitance	C_{rss}			100		pF
Turn-ON Delay Time	$t_{d(on)}$		See specified Test Circuit.		8.8	
Rise Time	t_r			80		ns
Turn-OFF Delay Time	$t_{d(off)}$			41		ns
Fall Time	t_f			50		ns
Total Gate Charge	Q_g	$V_{DS} = -6\text{V}$, $V_{GS} = -4.5\text{V}$, $I_D = -3.5\text{A}$			5.6	
Gate-to-Source Charge	Q_{gs}			0.7		nC
Gate-to-Drain "Miller" Charge	Q_{gd}			1.6		nC
Diode Forward Voltage	V_{SD}	$I_S = -3.5\text{A}$, $V_{GS} = 0\text{V}$		-0.86	-1.2	V

Switching Time Test Circuit

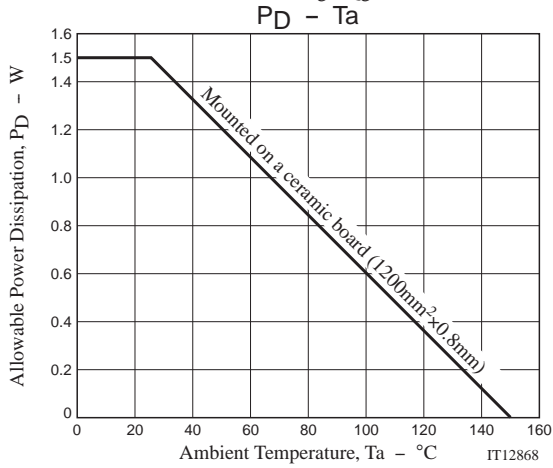
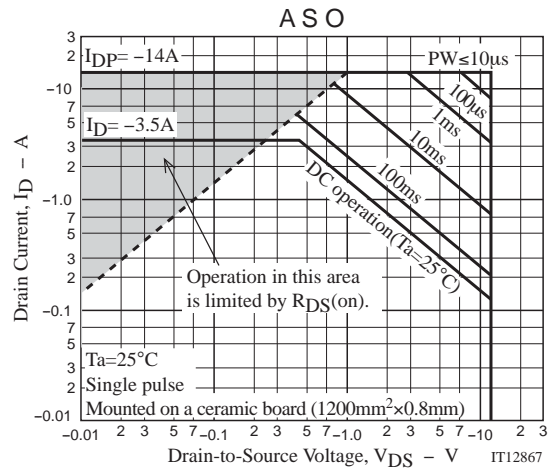
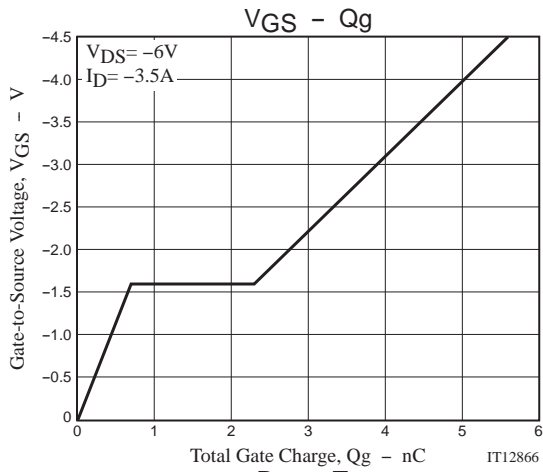


Ordering Information

Device	Package	Shipping	memo
MCH6320-TL-E	MCPH6	3,000pcs./reel	Pb Free



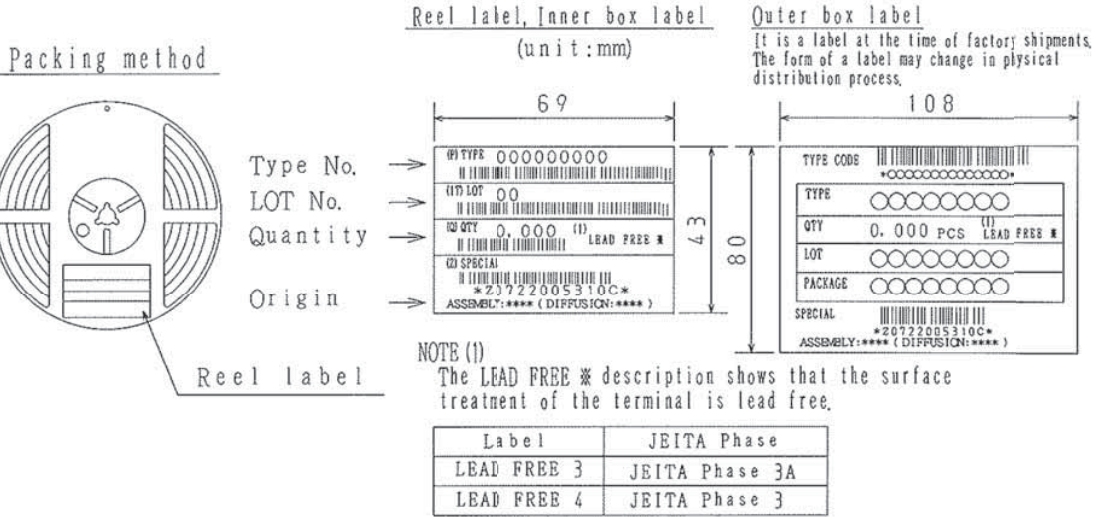
MCH6320



Taping Specification
MCH6320-TL-E

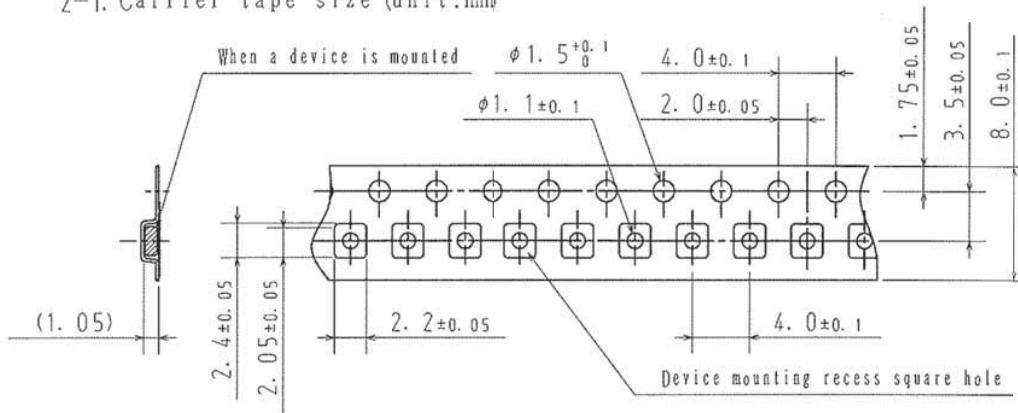
1. Packing Format

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

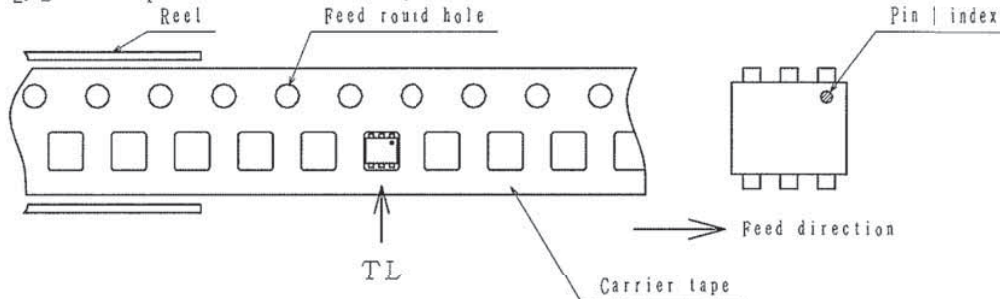


2. Taping configuration

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



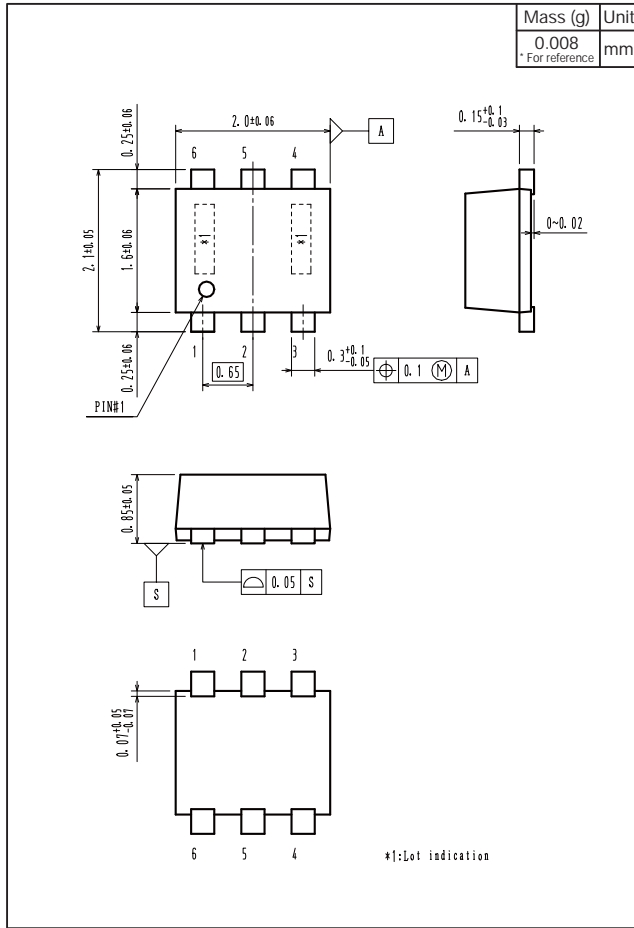
2-2. Device placement direction



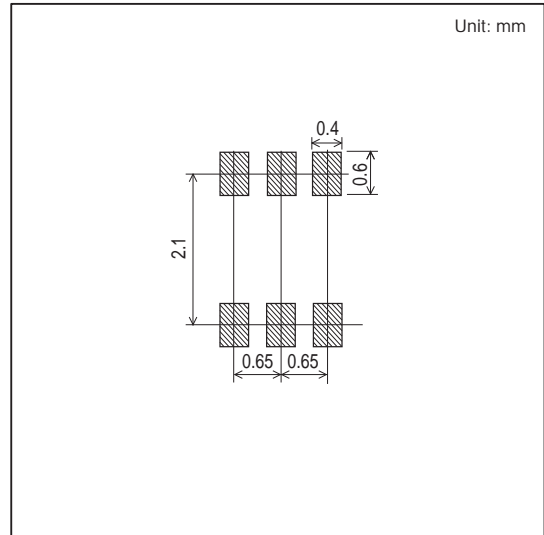
Those with pin | index on the feed hole side.....TL

MCH6320

Outline Drawing MCH6320-TL-E



Land Pattern Example



Note on usage : Since the MCH6320 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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