Ordering number : ENA1264A

SANYO Semiconductors
DATA SHEET

An ON Semiconductor Company

N-Channel Silicon MOSFET

MCH6421 — General-Purpose Switching Device Applications

Features

- Low ON-resistance
- 1.8V drive
- Ultrahigh-speed switching
- Protection diode in

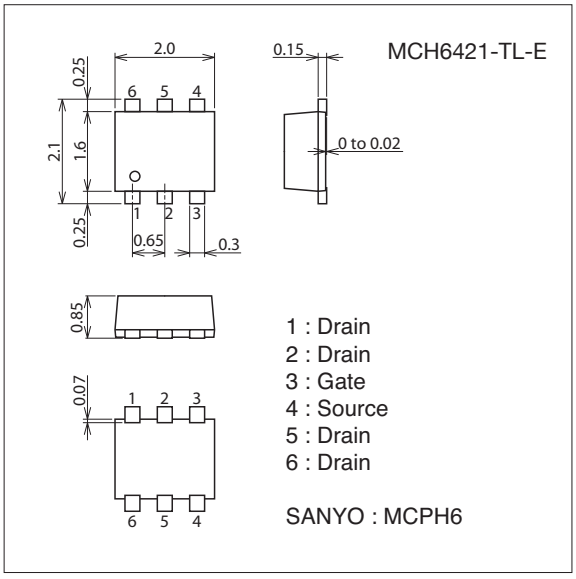
Specifications

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}		±12	V
Drain Current (DC)	I_D		5.5	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	22	A
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (1200mm²×0.8mm)	1.5	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		−55 to +150	°C

Package Dimensions

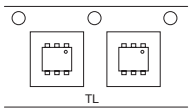
unit : mm (typ)
7022A-009



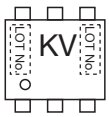
Product & Package Information

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

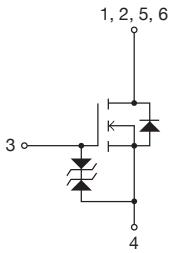
Packing Type : TL



Marking



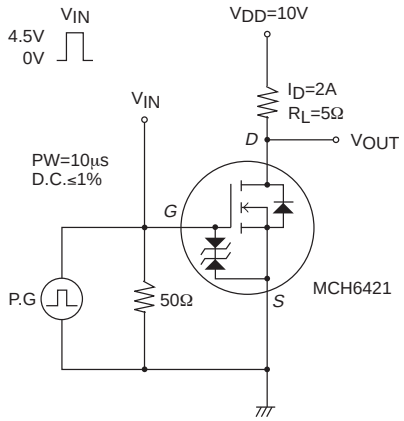
Electrical Connection



Electrical Characteristics at Ta=25°C

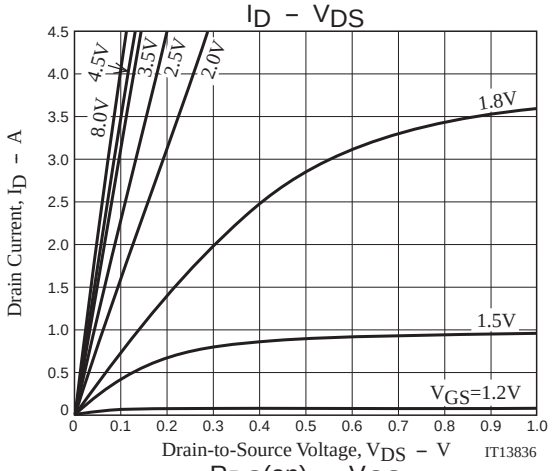
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=1mA, V_{GS}=0V	20			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V, V_{GS}=0V			1	μA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±8V, V_{DS}=0V			±10	μA
Cutoff Voltage	V_{GS}(off)	V_{DS}=10V, I_D=1mA	0.4		1.3	V
Forward Transfer Admittance	| yfs |	V_{DS}=10V, I_D=2A	2.0	3.8		S
Static Drain-to-Source On-State Resistance	R_{DS}(on)1	I_D=2A, V_{GS}=4.5V		29	38	mΩ
	R_{DS}(on)2	I_D=1A, V_{GS}=2.5V		43	61	mΩ
	R_{DS}(on)3	I_D=0.5A, V_{GS}=1.8V		69	99	mΩ
Input Capacitance	Ciss	V_{DS}=10V, f=1MHz		410		pF
Output Capacitance	Coss			84		pF
Reverse Transfer Capacitance	Crss			59		pF
Turn-ON Delay Time	t_{d}(on)	See specified Test Circuit.		7.5		ns
Rise Time	t_r			26		ns
Turn-OFF Delay Time	t_{d}(off)			38		ns
Fall Time	t_f			32		ns
Total Gate Charge	Qg	V_{DS}=10V, V_{GS}=4.5V, I_D=5.5A		5.1		nC
Gate-to-Source Charge	Qgs			0.7		nC
Gate-to-Drain “Miller” Charge	Qgd			1.7		nC
Diode Forward Voltage	V_{SD}	I_S=5.5A, V_{GS}=0V		0.8	1.2	V

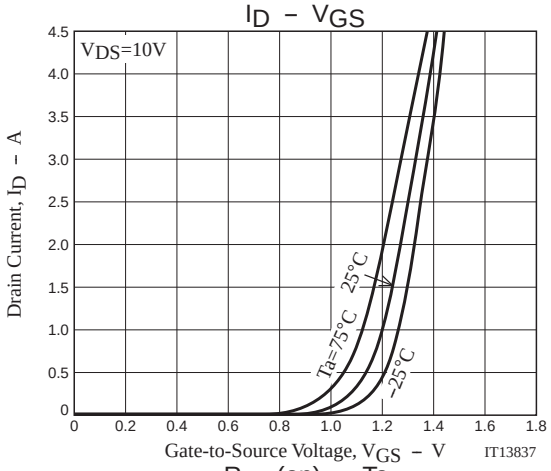
Switching Time Test Circuit

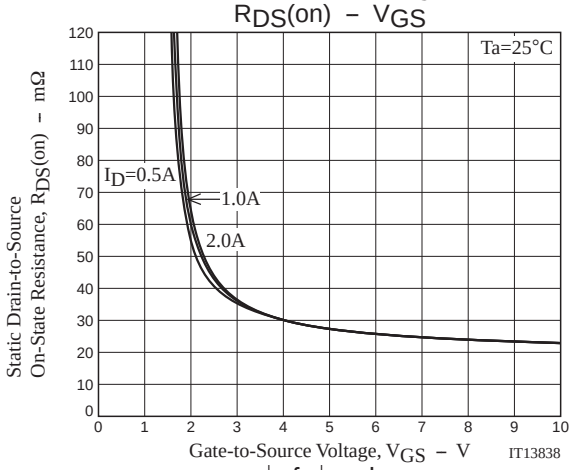


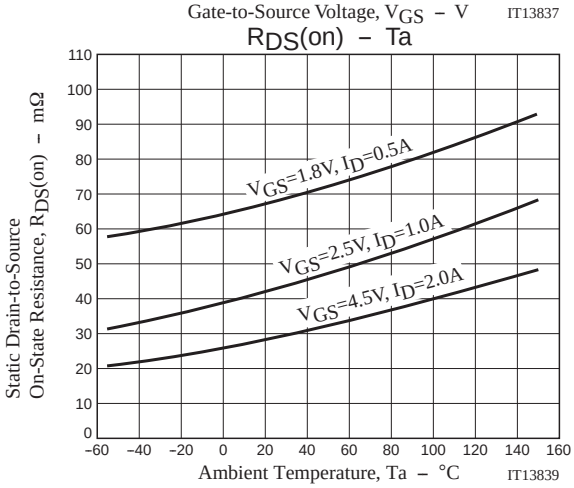
Ordering Information

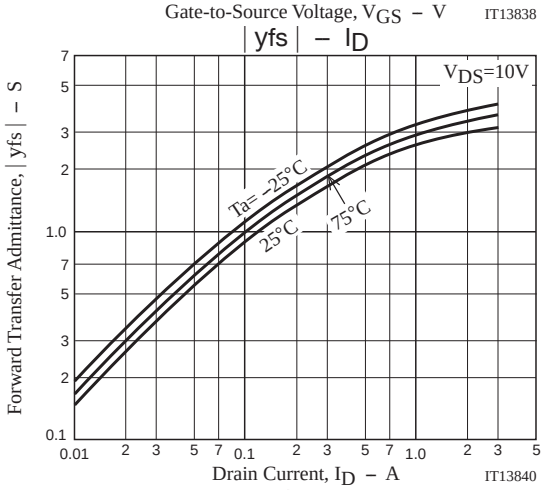
Device	Package	Shipping	memo
MCH6421-TL-E	MCPH6	3,000pcs./reel	Pb Free

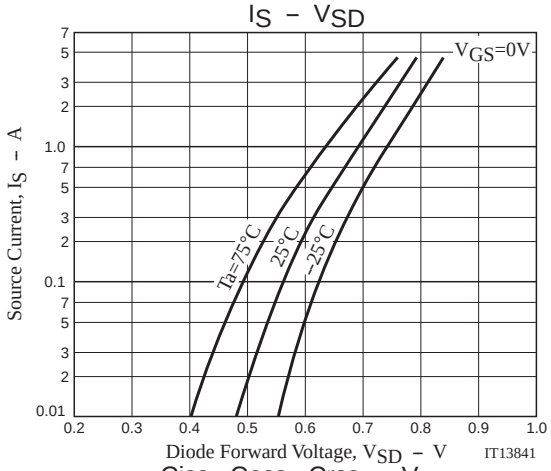


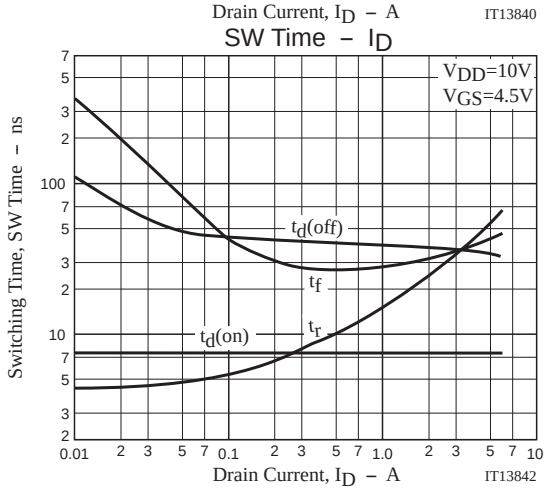


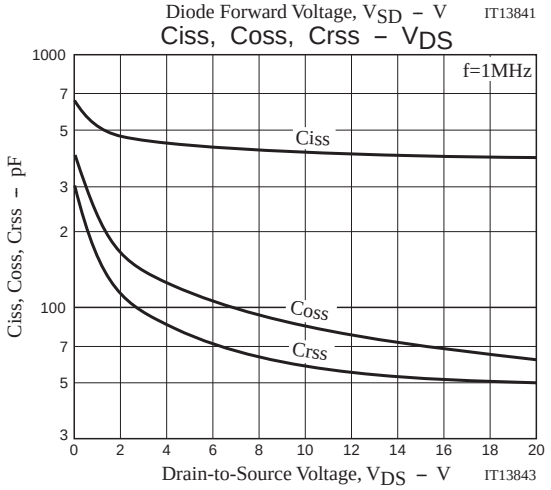


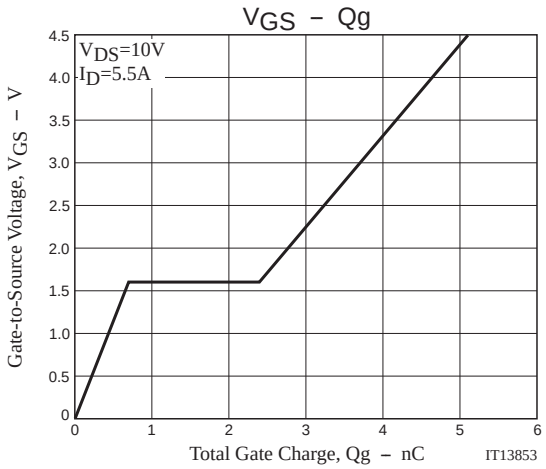


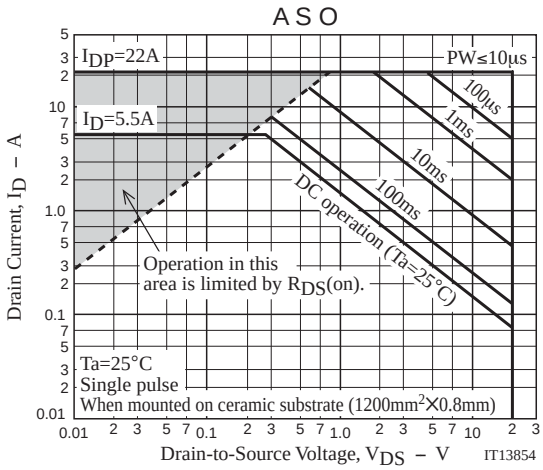


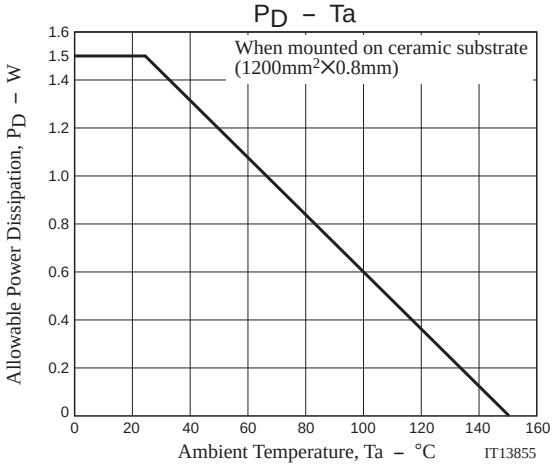












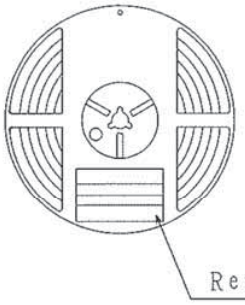
Taping Specification

MCH6421-TL-E

1. Packing Format

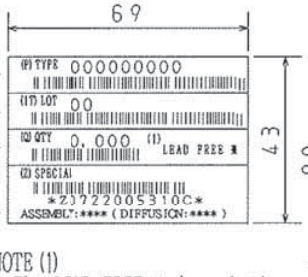
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
MCPH6	MCP4	3,000	15,000	90,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

Packing method



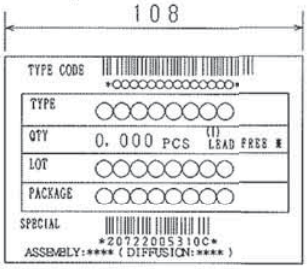
Type No.
LOT No.
Quantity
Origin
Reel label

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.

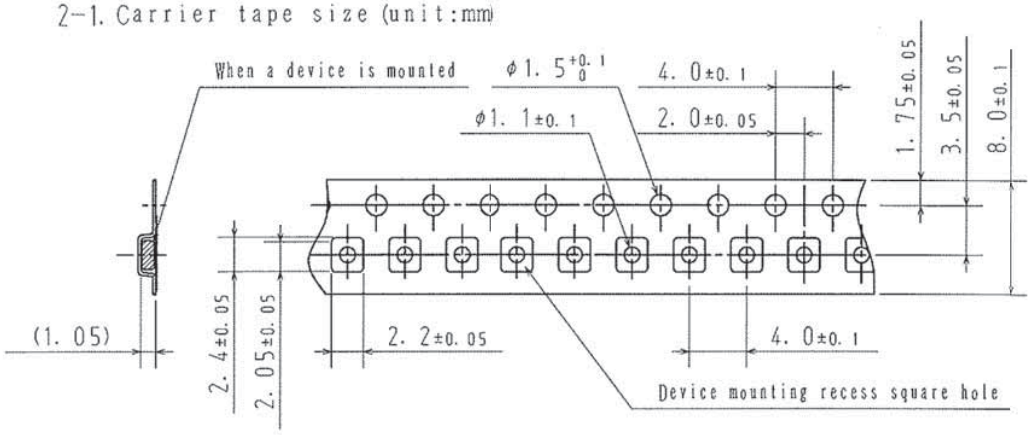


NOTE (1)
The LEAD FREE ※ description shows that the surface treatment of the terminal is lead free.

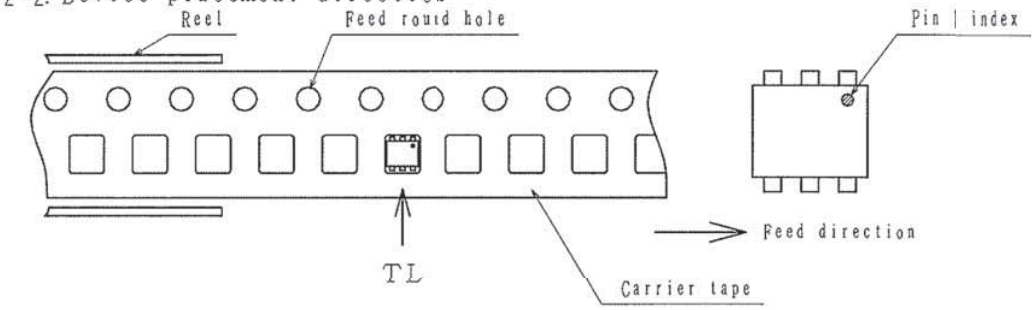
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



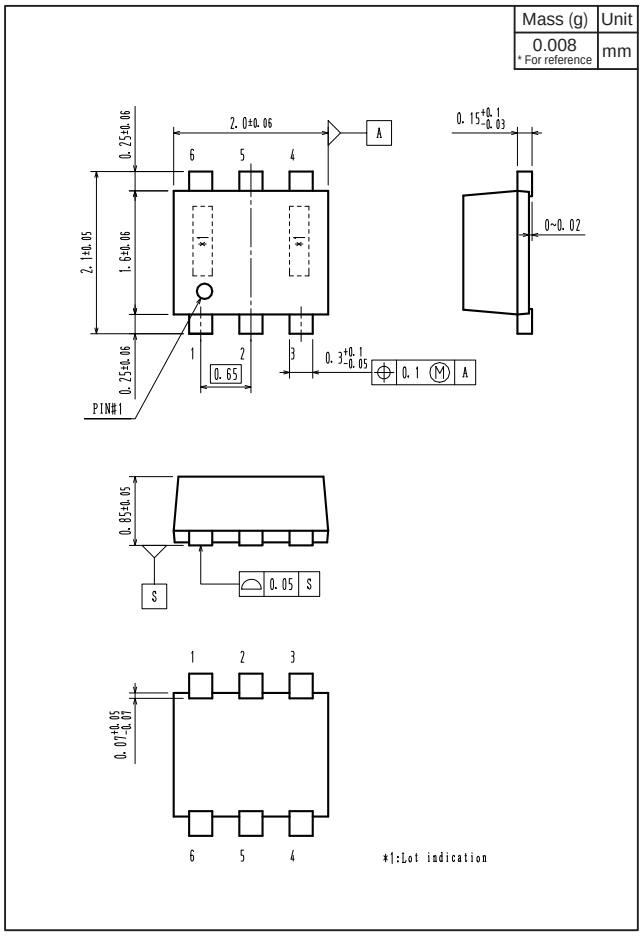
2-2. Device placement direction



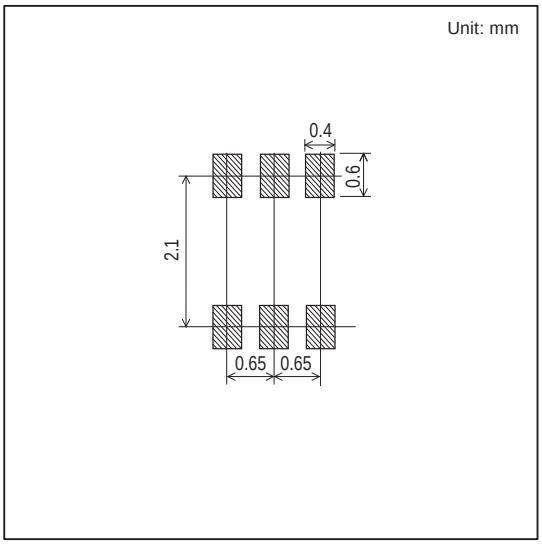
Those with pin 1 index on the feed hole side·····TL

Outline Drawing

MCH6421-TL-E



Land Pattern Example



Note on usage : Since the MCH6421 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

This catalog provides information as of June, 2012. Specifications and information herein are subject to change without notice.