



SANYO Semiconductors

# DATA SHEET

An ON Semiconductor Company

## MCH6436 — N-Channel Silicon MOSFET — General-Purpose Switching Device Applications

### Features

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

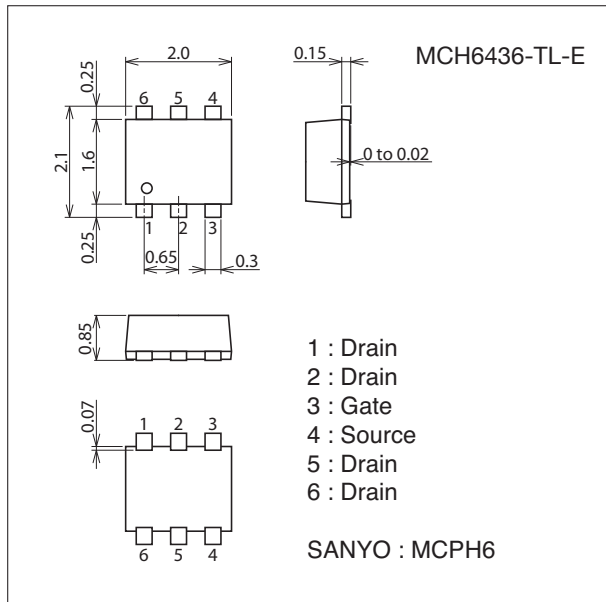
### Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	VDSS		30	V
Gate-to-Source Voltage	VGSS		±12	V
Drain Current (DC)	ID		6	A
Drain Current (Pulse)	IDP	PW≤10μs, duty cycle≤1%	24	A
Allowable Power Dissipation	PD	When mounted on ceramic substrate (1500mm²×0.8mm)	1.5	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C

### Package Dimensions

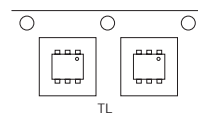
unit : mm (typ)  
7022A-009



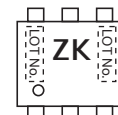
### Product & Package Information

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

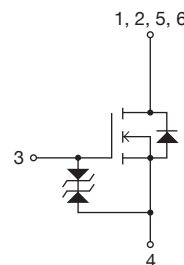
### Packing Type : TL



### Marking



### Electrical Connection

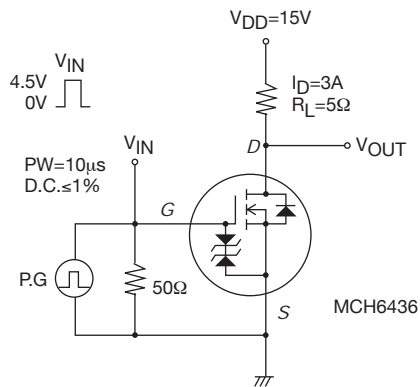


# MCH6436

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

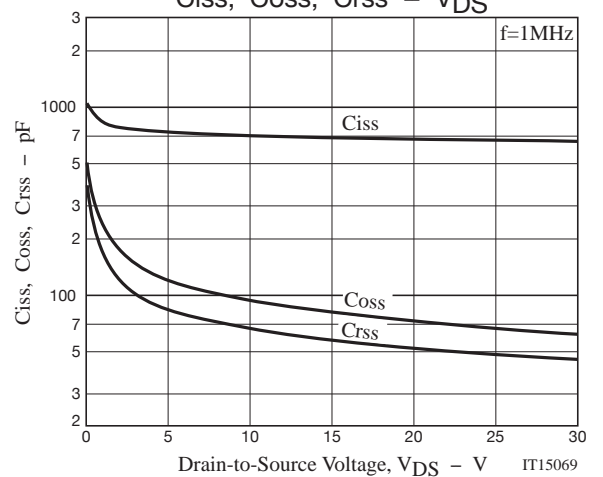
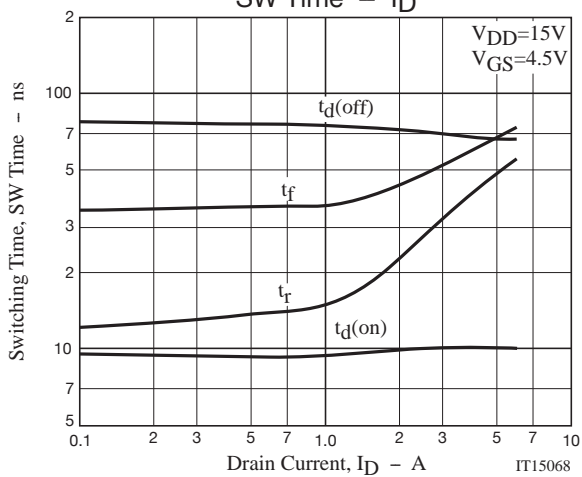
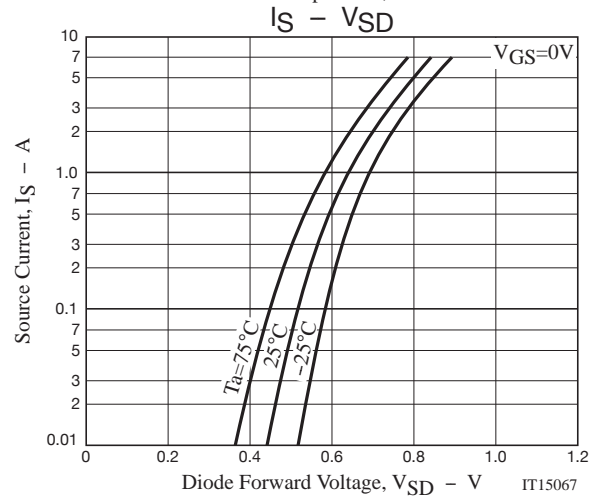
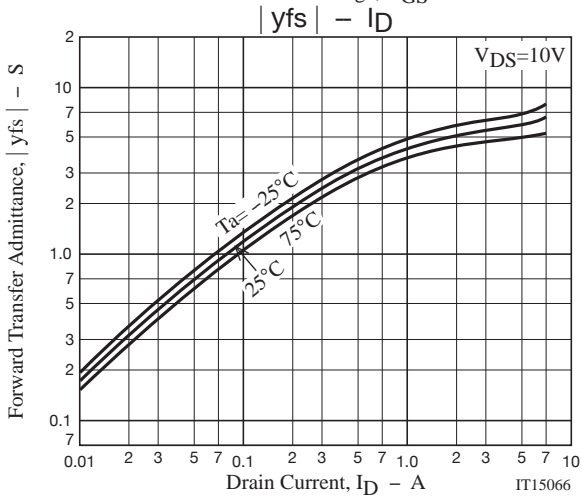
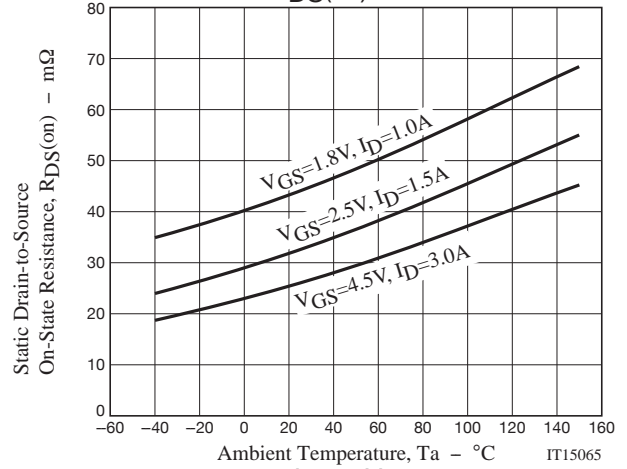
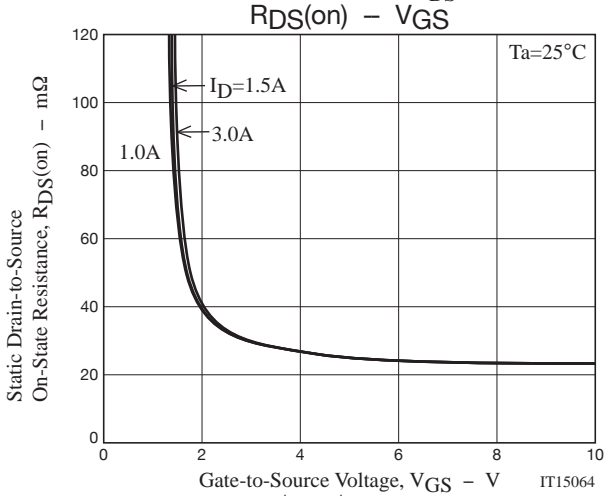
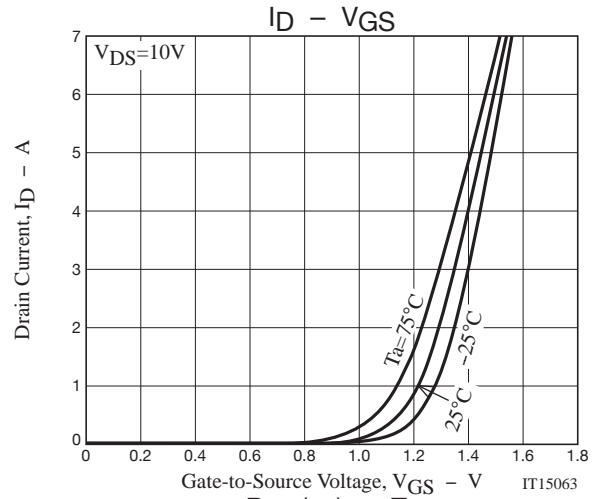
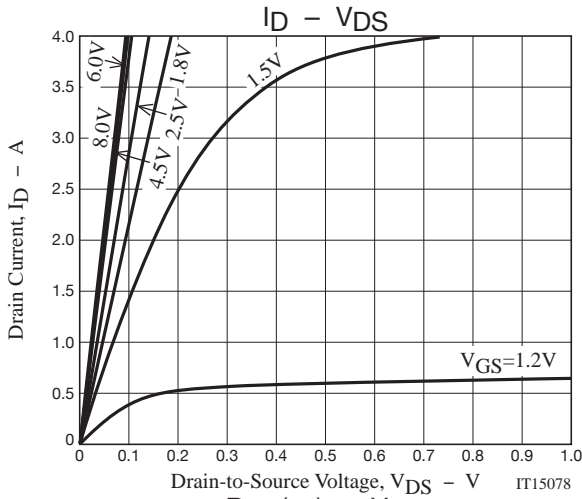
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1\text{mA}$ , $V_{GS}=0\text{V}$	30			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=30\text{V}$ , $V_{GS}=0\text{V}$			1	$\mu\text{A}$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 8\text{V}$ , $V_{DS}=0\text{V}$			$\pm 10$	$\mu\text{A}$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10\text{V}$ , $I_D=1\text{mA}$	0.4		1.3	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10\text{V}$ , $I_D=3\text{A}$		5.5		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=3\text{A}$ , $V_{GS}=4.5\text{V}$		26	34	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D=1.5\text{A}$ , $V_{GS}=2.5\text{V}$		35	49	$\text{m}\Omega$
	$R_{DS(on)3}$	$I_D=1\text{A}$ , $V_{GS}=1.8\text{V}$		46	69	$\text{m}\Omega$
Input Capacitance	$C_{iss}$	$V_{DS}=10\text{V}$ , $f=1\text{MHz}$		710		pF
Output Capacitance	$C_{oss}$			95		pF
Reverse Transfer Capacitance	$C_{rss}$			65		pF
Turn-ON Delay Time	$t_{d(on)}$		See specified Test Circuit.		11	
Rise Time	$t_r$			33		ns
Turn-OFF Delay Time	$t_{d(off)}$			70		ns
Fall Time	$t_f$			52		ns
Total Gate Charge	$Q_g$	$V_{DS}=10\text{V}$ , $V_{GS}=4.5\text{V}$ , $I_D=6\text{A}$			7.5	
Gate-to-Source Charge	$Q_{gs}$			1.3		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$			1.5		nC
Diode Forward Voltage	$V_{SD}$	$I_S=6\text{A}$ , $V_{GS}=0\text{V}$		0.82	1.2	V

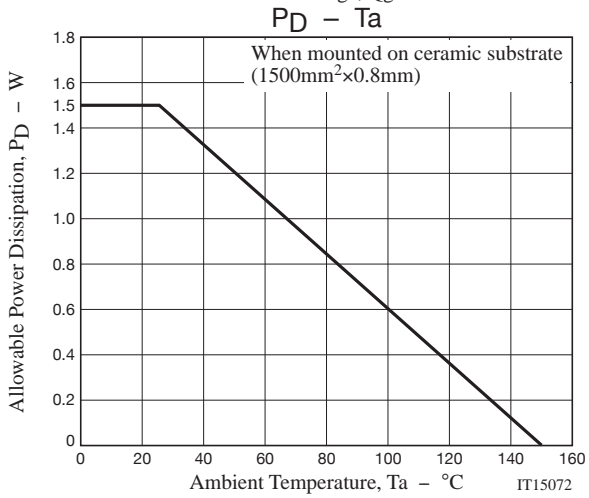
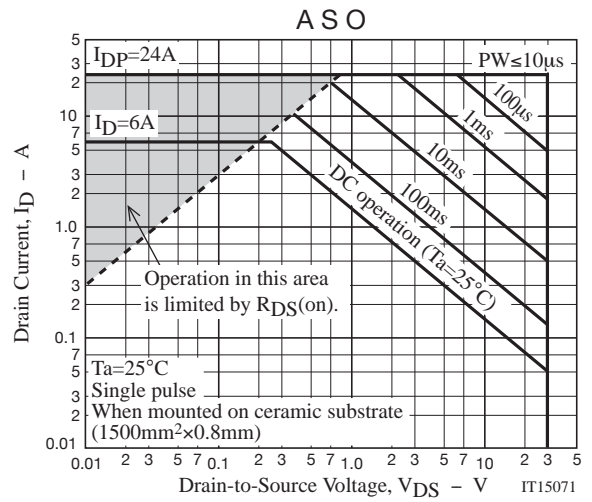
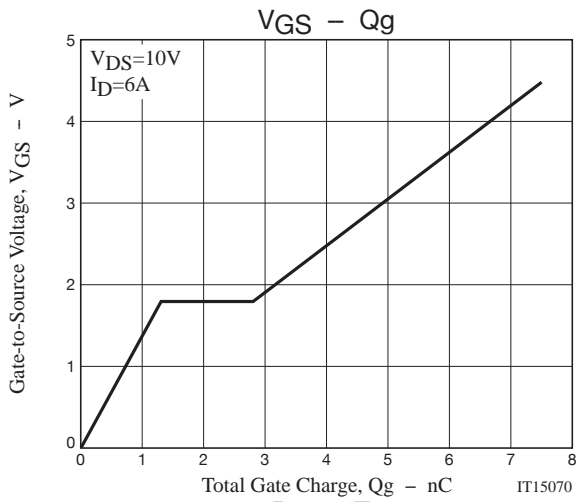
## Switching Time Test Circuit



## Ordering Information

Device	Package	Shipping	memo
MCH6436-TL-E	MCPH6	3,000pcs./reel	Pb Free





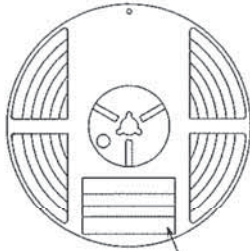
Taping Specification

MCH6436-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

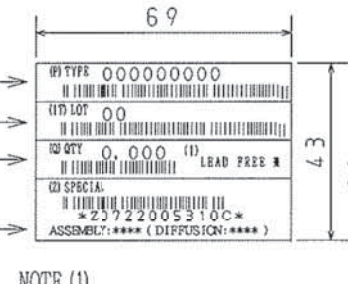
Packing method



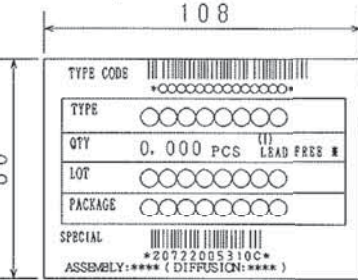
Type No.  
LOT No.  
Quantity  
Origin

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.



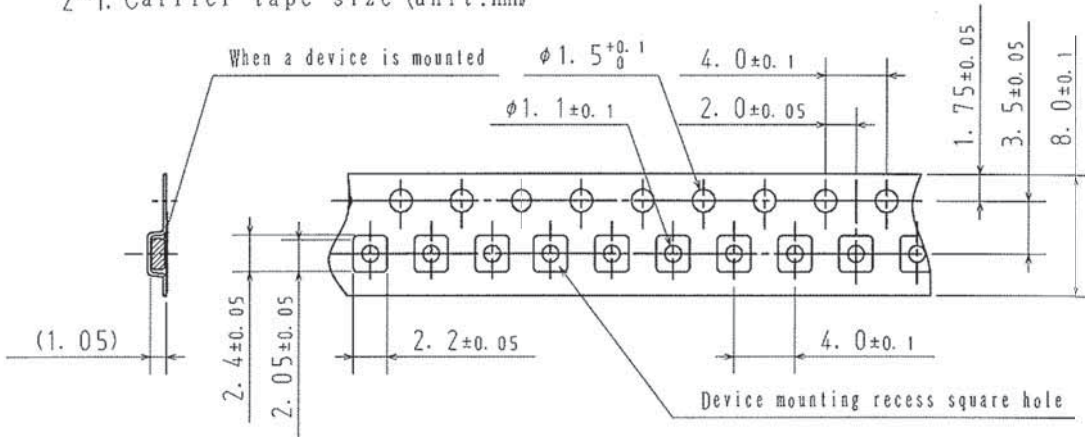
NOTE (1)

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

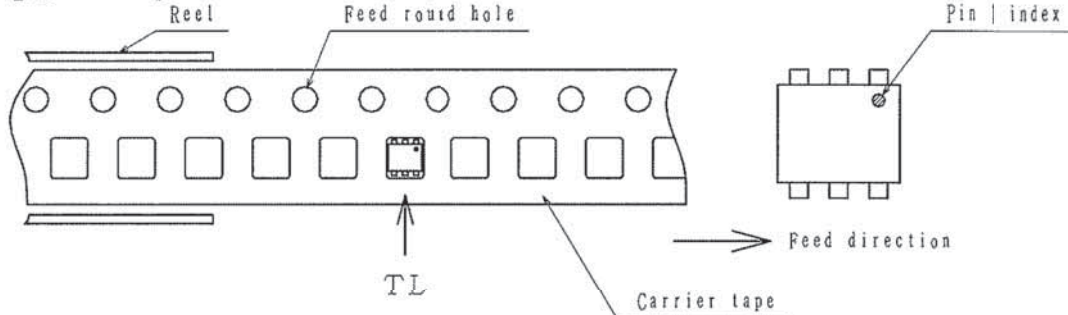
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



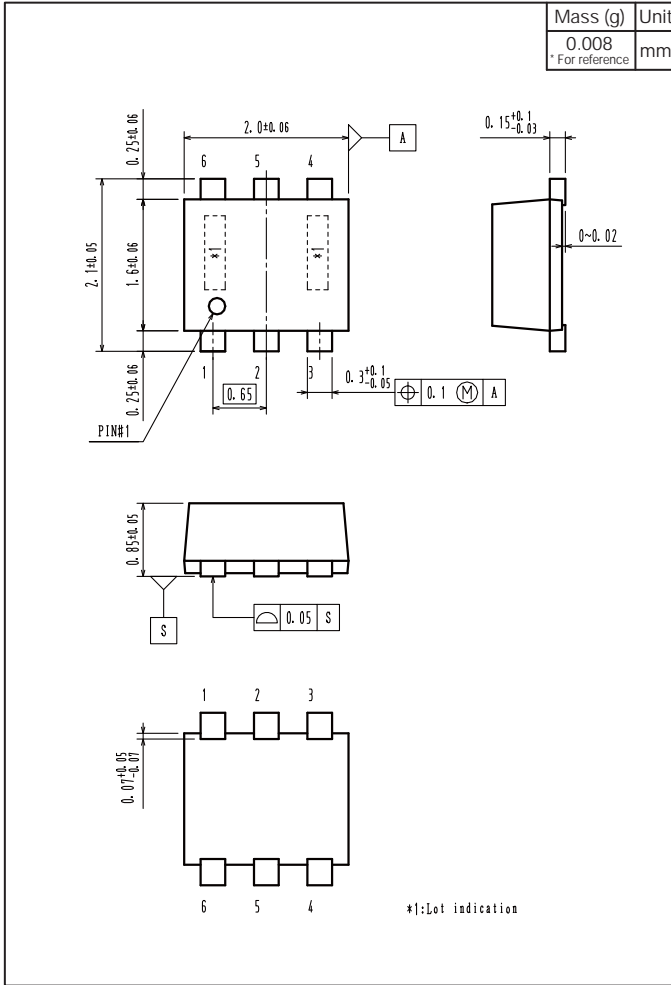
2-2. Device placement direction



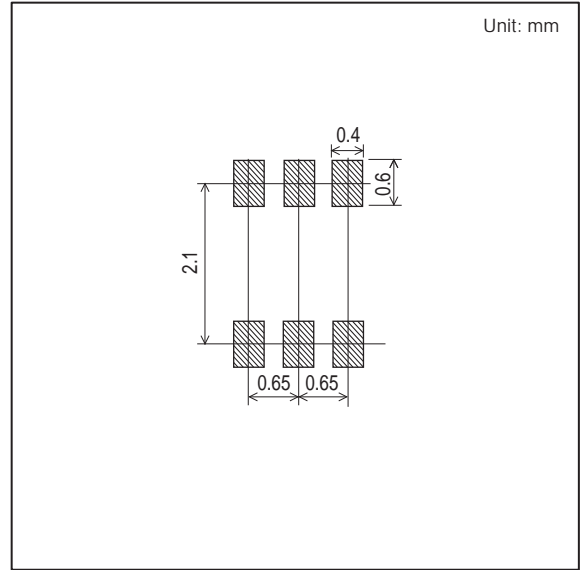
Those with pin | index on the feed hole side.....TL

# MCH6436

## Outline Drawing MCH6436-TL-E



## Land Pattern Example



Note on usage : Since the MCH6436 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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