



SANYO Semiconductors

## DATA SHEET

An ON Semiconductor Company

N-Channel Silicon MOSFET

# MCH6436 — General-Purpose Switching Device Applications

## Features

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

## Specifications

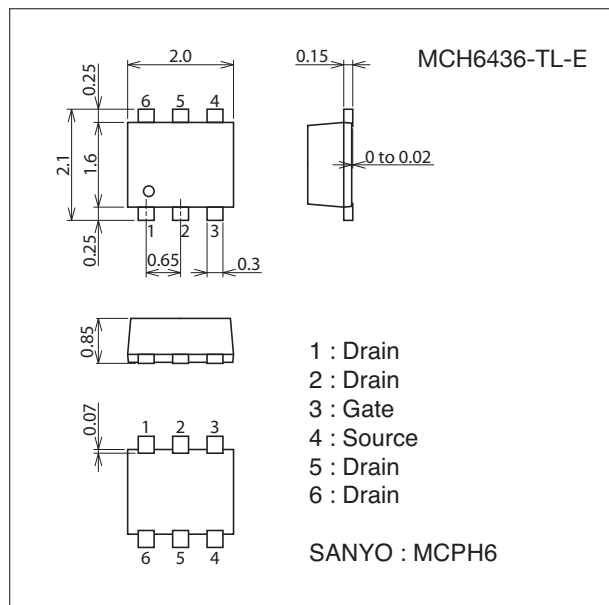
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DS}$		30	V
Gate-to-Source Voltage	$V_{GS}$		$\pm 12$	V
Drain Current (DC)	$I_D$		6	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu s$ , duty cycle $\leq 1\%$	24	A
Allowable Power Dissipation	$P_D$	When mounted on ceramic substrate (1500mm <sup>2</sup> × 0.8mm)	1.5	W
Channel Temperature	$T_{ch}$		150	°C
Storage Temperature	$T_{stg}$		-55 to +150	°C

## Package Dimensions

unit : mm (typ)

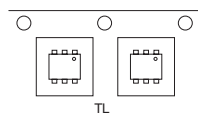
7022A-009



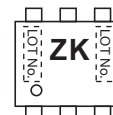
## Product & Package Information

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

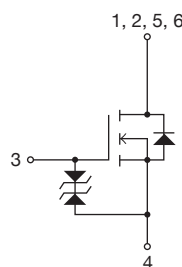
## Packing Type : TL



## Marking



## Electrical Connection

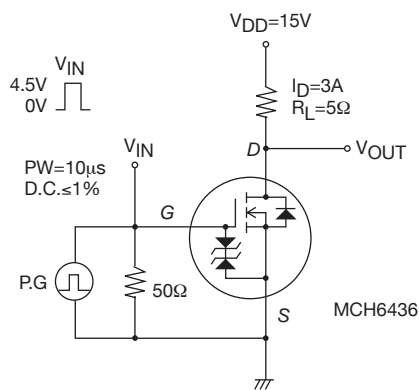


MCH6436

Electrical Characteristics at Ta=25°C

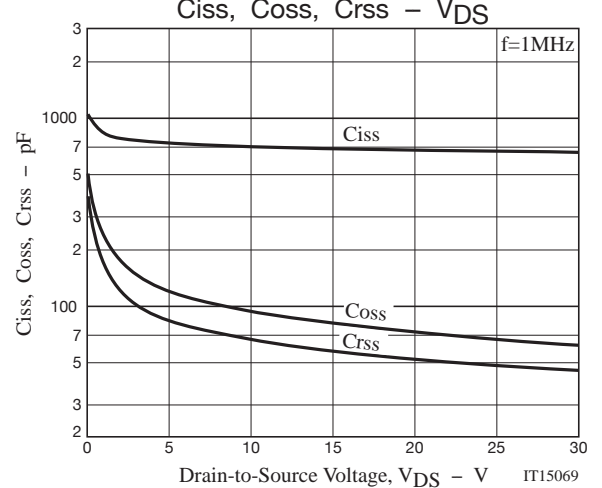
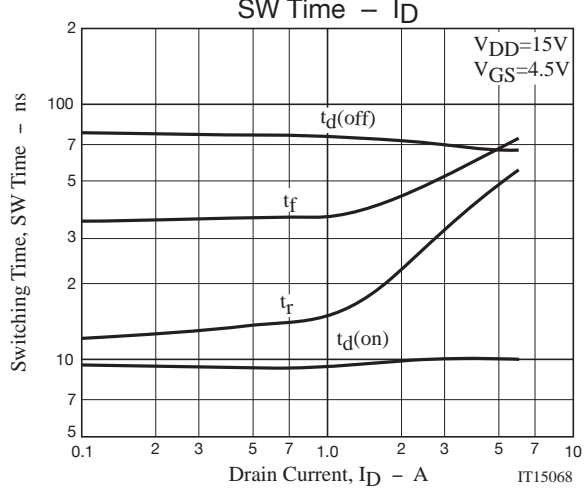
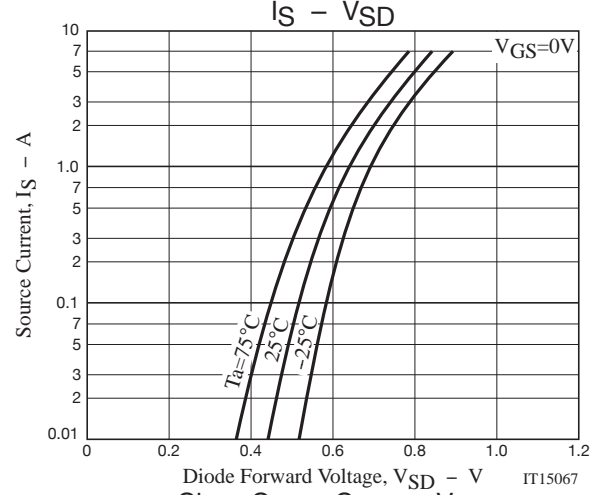
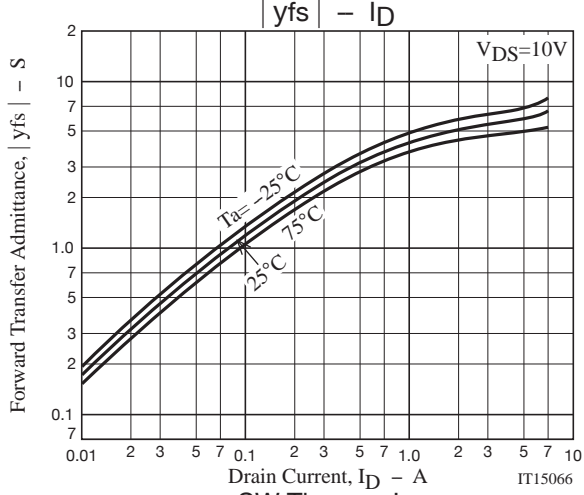
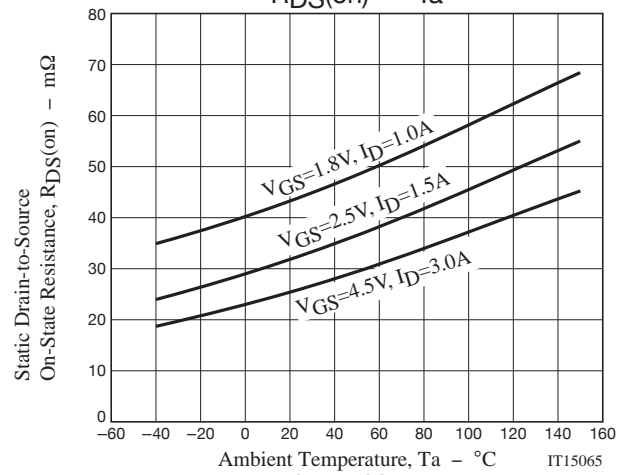
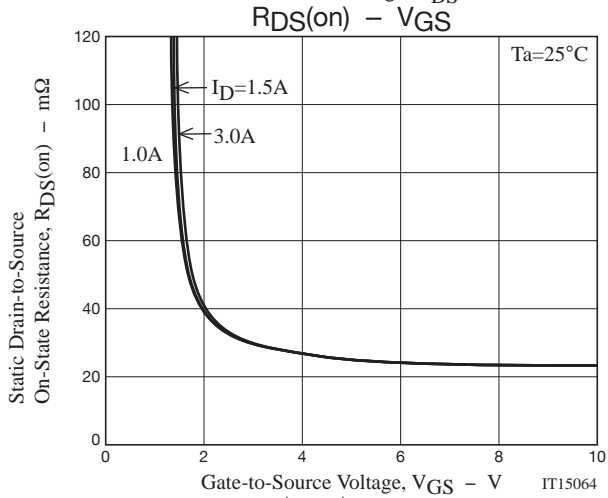
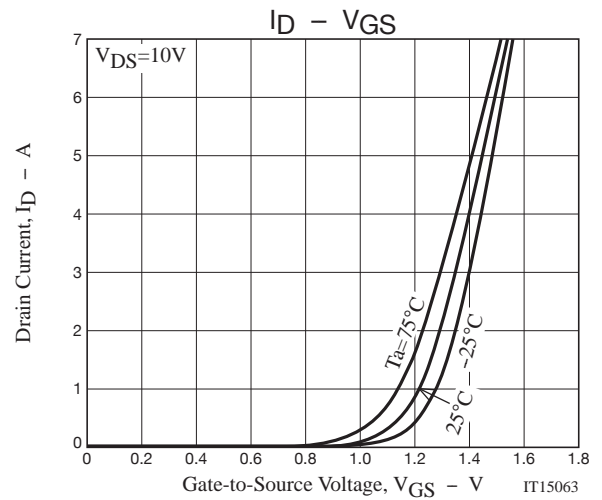
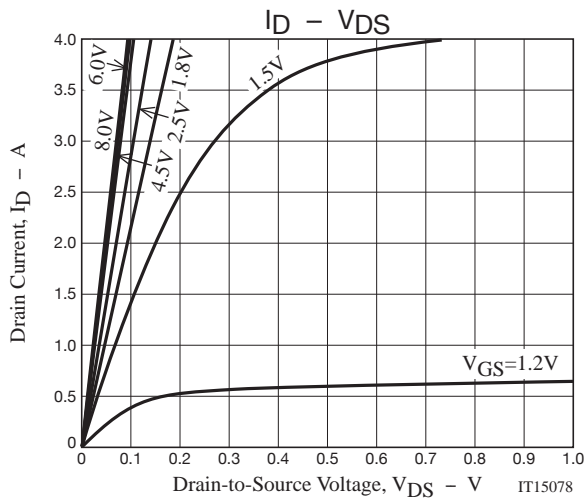
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0V$	30			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=30V, V_{GS}=0V$			1	$\mu A$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 8V, V_{DS}=0V$			$\pm 10$	$\mu A$
Cutoff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

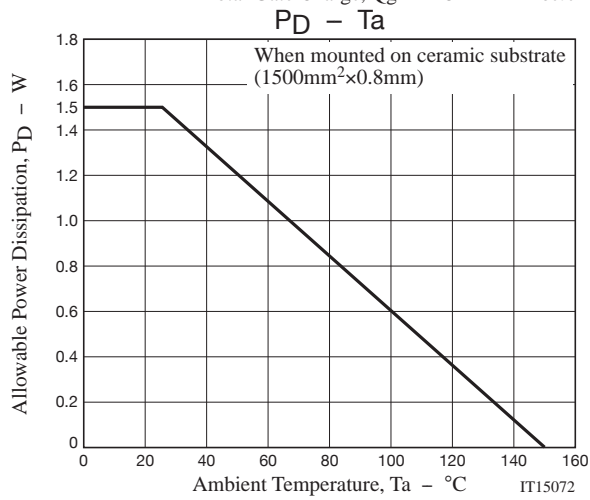
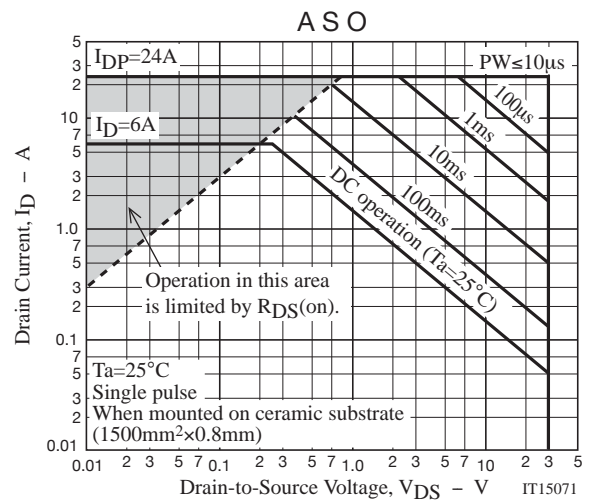
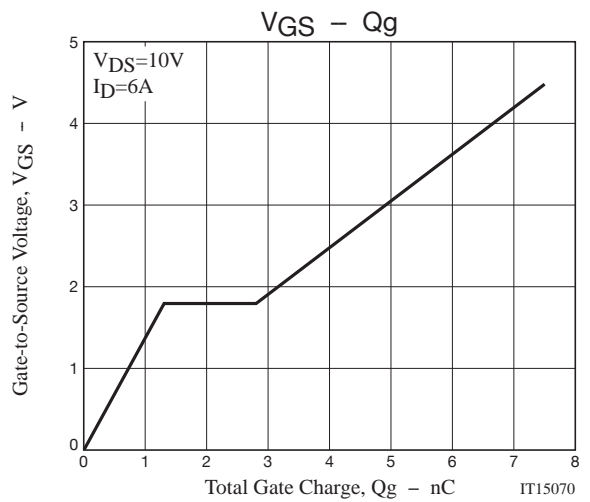
Switching Time Test Circuit



Ordering Information

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





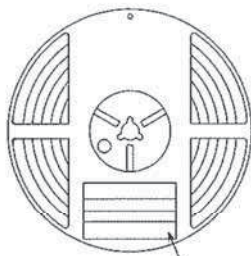
## Taping Specification

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

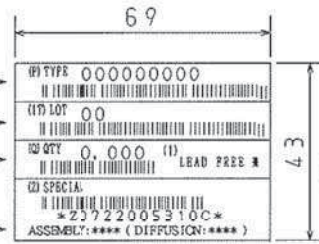
#### Packing method



Type No.  
LOT No.  
Quantity  
Origin

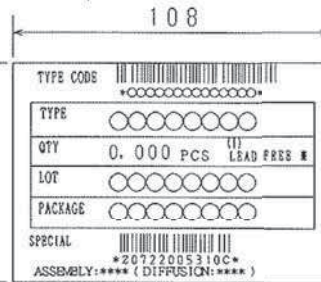
Reel label

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.)



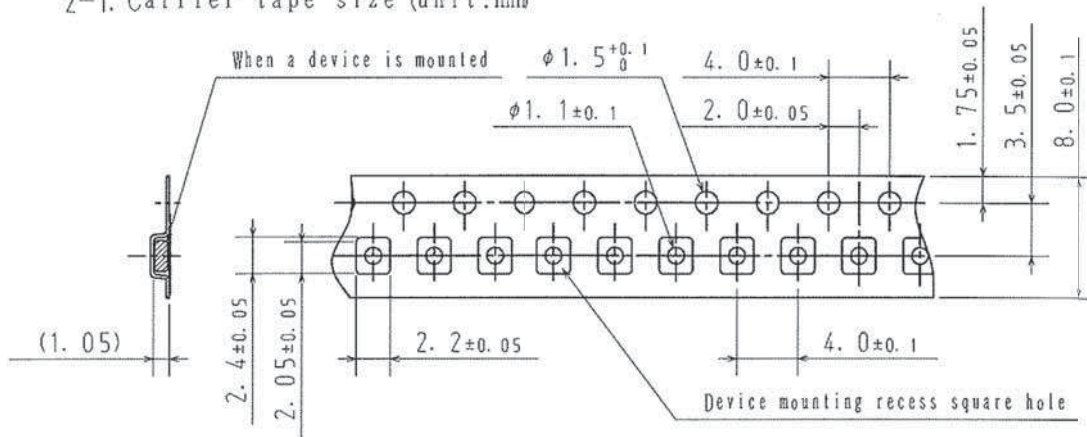
#### NOTE (1)

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

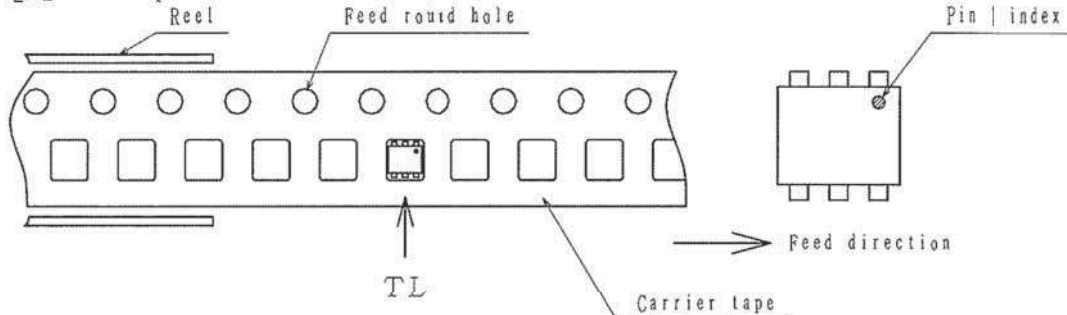
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

### 2. Taping configuration

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



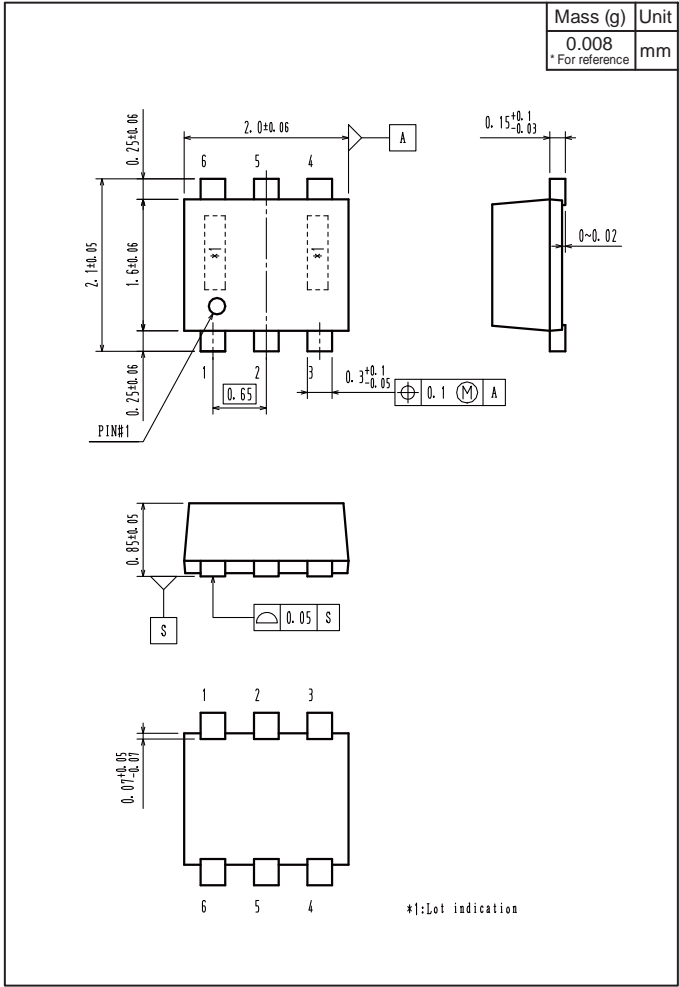
#### 2-2. Device placement direction



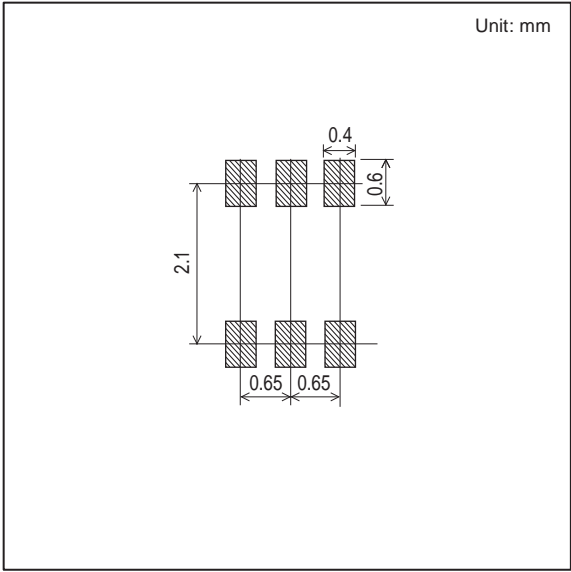
Those with pin 1 index on the feed hole side.....TL

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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