



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

N-Channel Silicon MOSFET

MCH6448 — Low-Voltage Driver Switching Device Applications

Features

- ON-resistance $R_{DS(on)1}=17m\Omega$ (typ.)
- 1.2V drive
- Halogen free compliance
- Protection diode in

Specifications

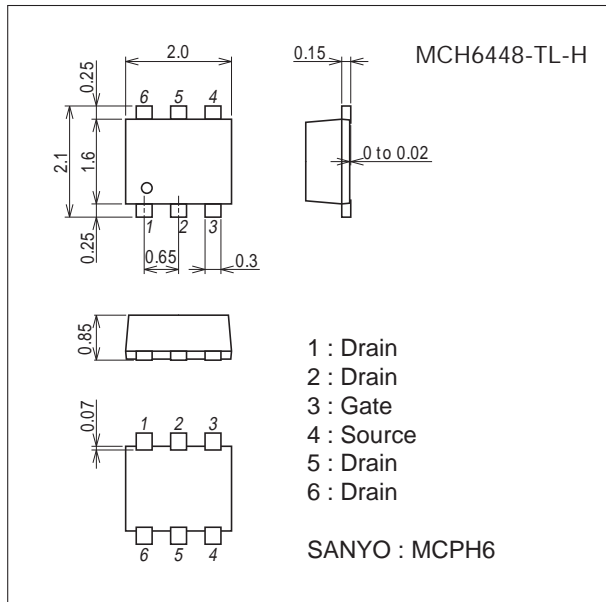
Absolute Maximum Ratings at $T_a=25^\circ C$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		20	V
Gate-to-Source Voltage	V_{GSS}		± 9	V
Drain Current (DC)	I_D		8	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu s$, duty cycle $\leq 1\%$	32	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)

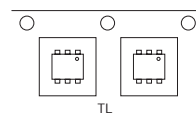
7022A-009



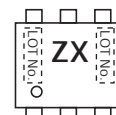
Product & Package Information

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

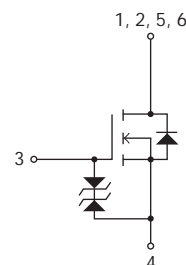
Packing Type : TL



Marking



Electrical Connection

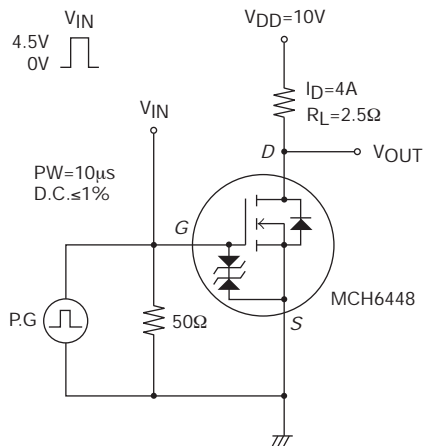


MCH6448

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

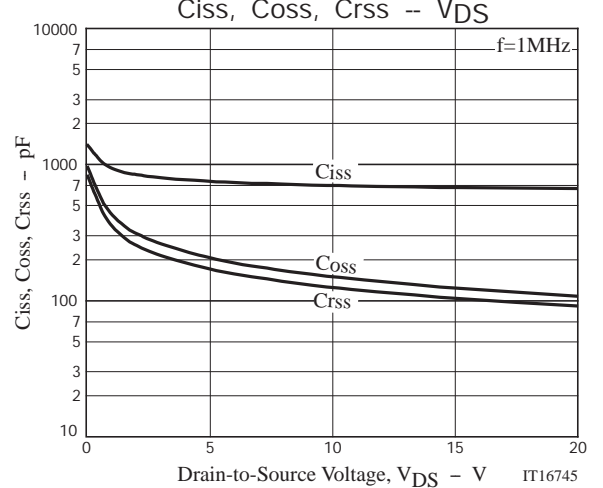
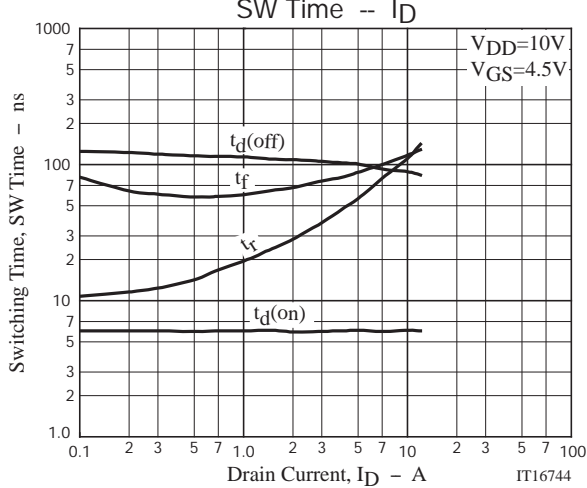
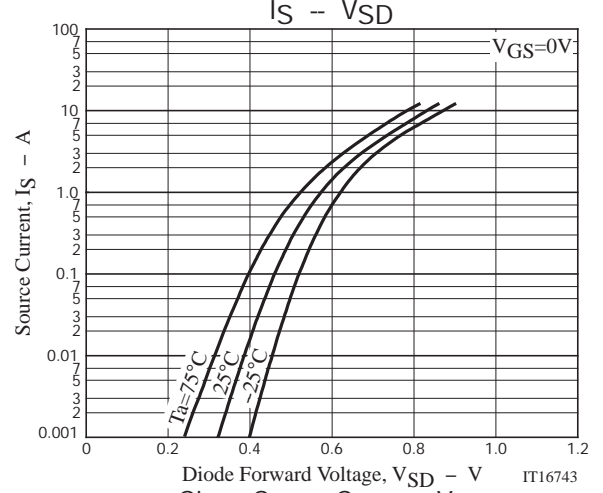
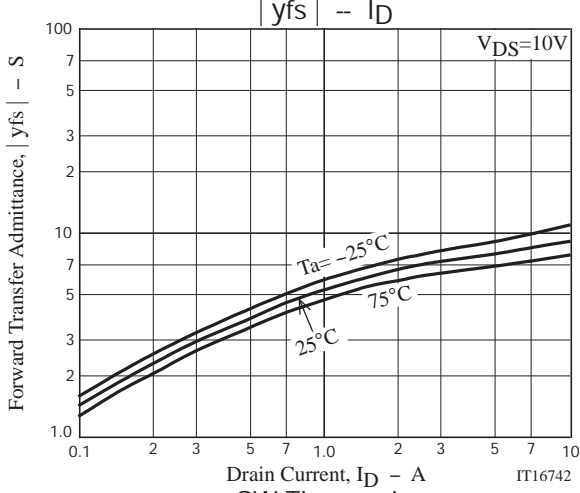
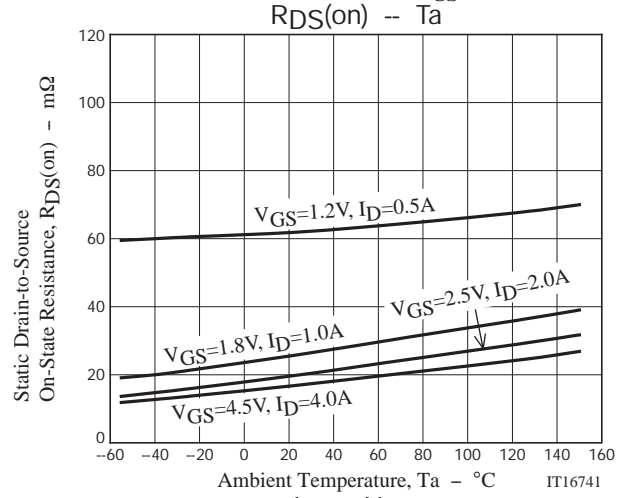
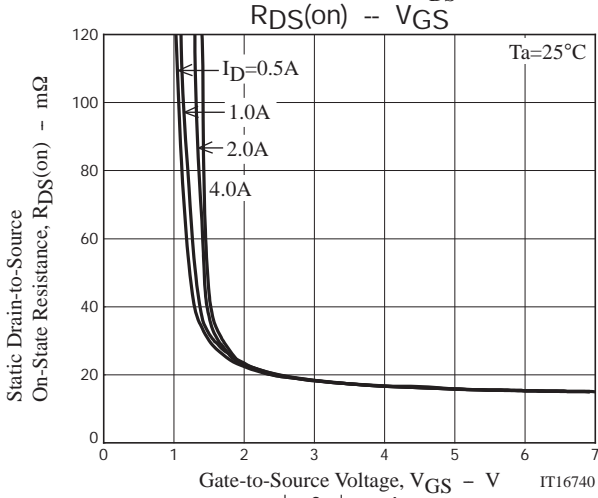
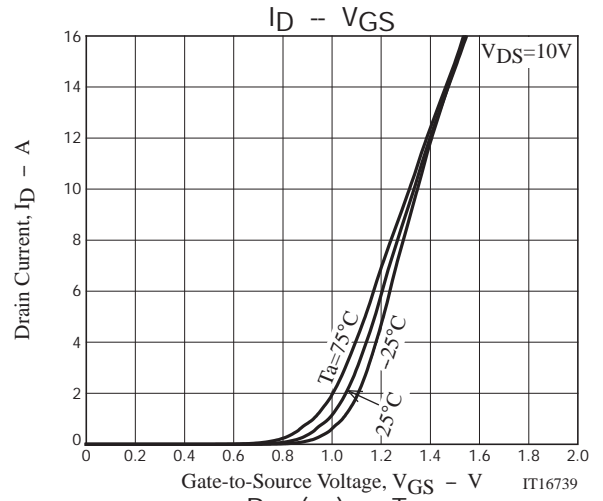
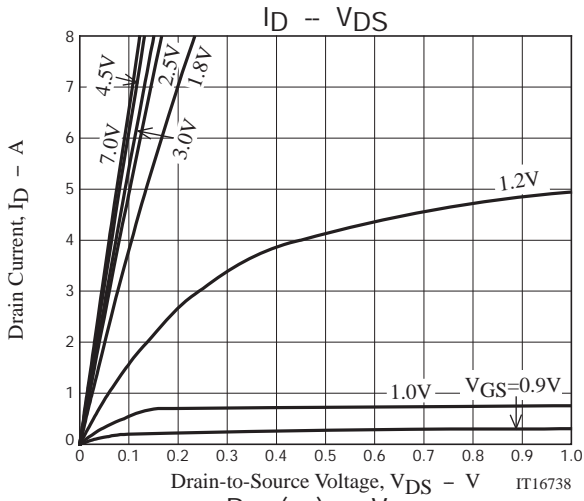
Parameter	Symbol	Conditions	Ratings			Unit	
			min	typ	max		
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1\text{mA}$, $V_{GS}=0\text{V}$	20			V	
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=20\text{V}$, $V_{GS}=0\text{V}$			1	μA	
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 7.2\text{V}$, $V_{DS}=0\text{V}$			± 10	μA	
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10\text{V}$, $I_D=1\text{mA}$	0.3		1.0	V	
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10\text{V}$, $I_D=4\text{A}$		7.7		S	
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=4\text{A}$, $V_{GS}=4.5\text{V}$		17	22	$\text{m}\Omega$	
	$R_{DS(on)2}$	$I_D=2\text{A}$, $V_{GS}=2.5\text{V}$		20	28	$\text{m}\Omega$	
	$R_{DS(on)3}$	$I_D=1\text{A}$, $V_{GS}=1.8\text{V}$		26	39	$\text{m}\Omega$	
	$R_{DS(on)4}$	$I_D=0.5\text{A}$, $V_{GS}=1.2\text{V}$		62	124	$\text{m}\Omega$	
Input Capacitance	C_{iss}	$V_{DS}=10\text{V}$, $f=1\text{MHz}$		705		pF	
Output Capacitance	C_{oss}			150		pF	
Reverse Transfer Capacitance	C_{rss}			125		pF	
Turn-ON Delay Time	$t_{d(on)}$		See specified Test Circuit		6		ns
Rise Time	t_r			47		ns	
Turn-OFF Delay Time	$t_{d(off)}$			103		ns	
Fall Time	t_f			81		ns	
Total Gate Charge	Q_g	$V_{DS}=10\text{V}$, $V_{GS}=4.5\text{V}$, $I_D=8\text{A}$			11.2		nC
Gate-to-Source Charge	Q_{gs}				1.3		nC
Gate-to-Drain "Miller" Charge	Q_{gd}			2.8		nC	
Diode Forward Voltage	V_{SD}	$I_S=8\text{A}$, $V_{GS}=0\text{V}$		0.8	1.2	V	

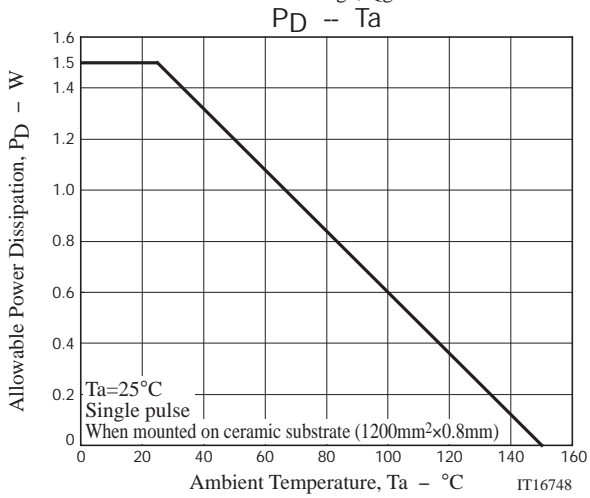
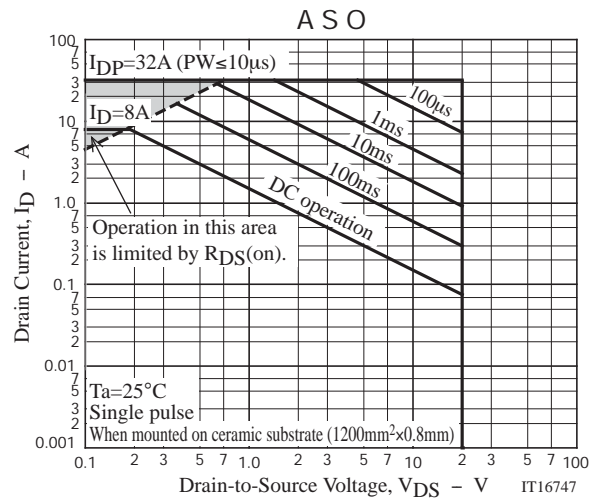
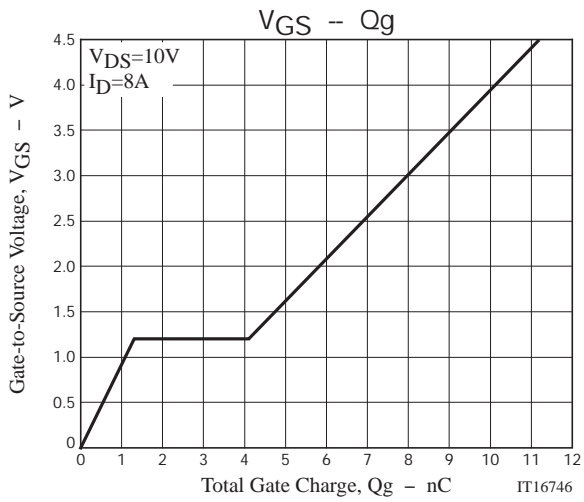
Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
MCH6448-TL-H	MCPH6	3,000pcs./reel	Pb Free and Halogen Free





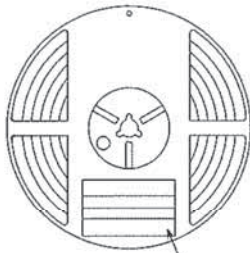
Taping Specification

MCH6448-TL-H

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

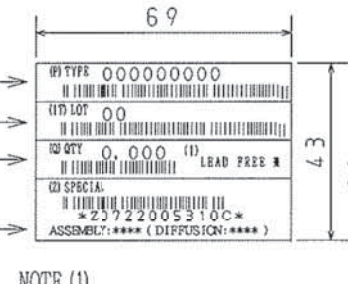
Packing method



Reel label

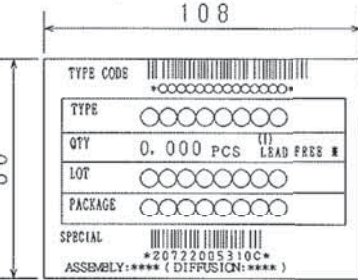
Type No.
LOT No.
Quantity
Origin

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.)



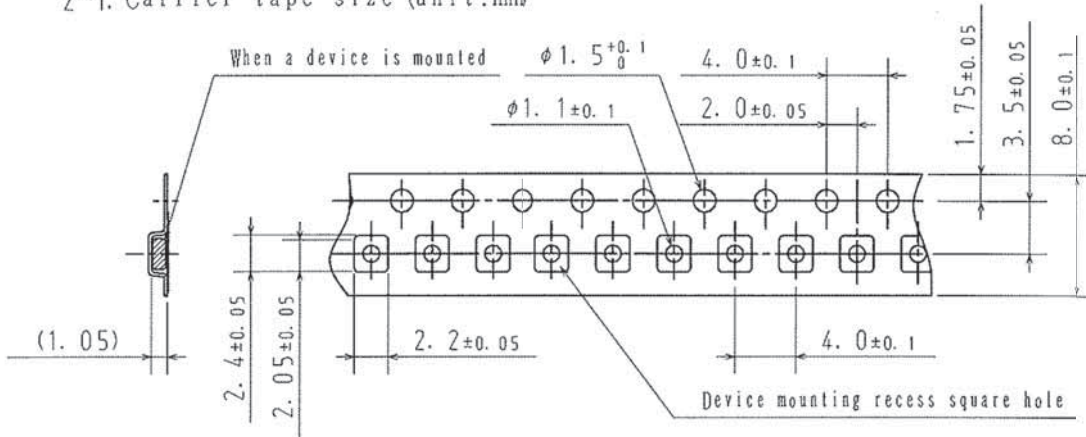
NOTE (1)

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

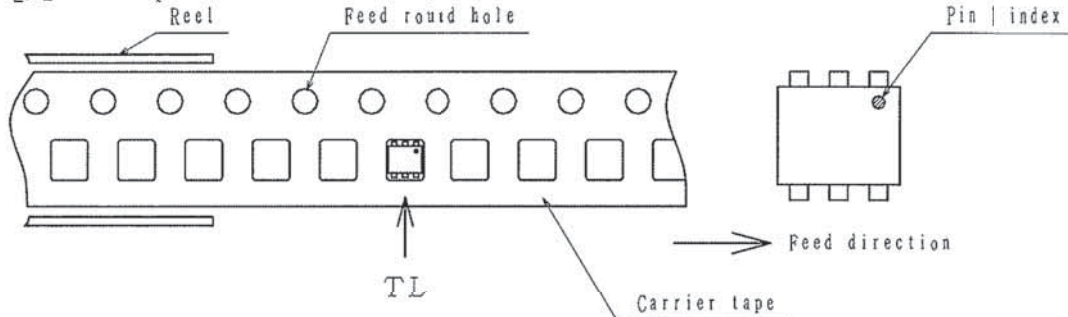
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



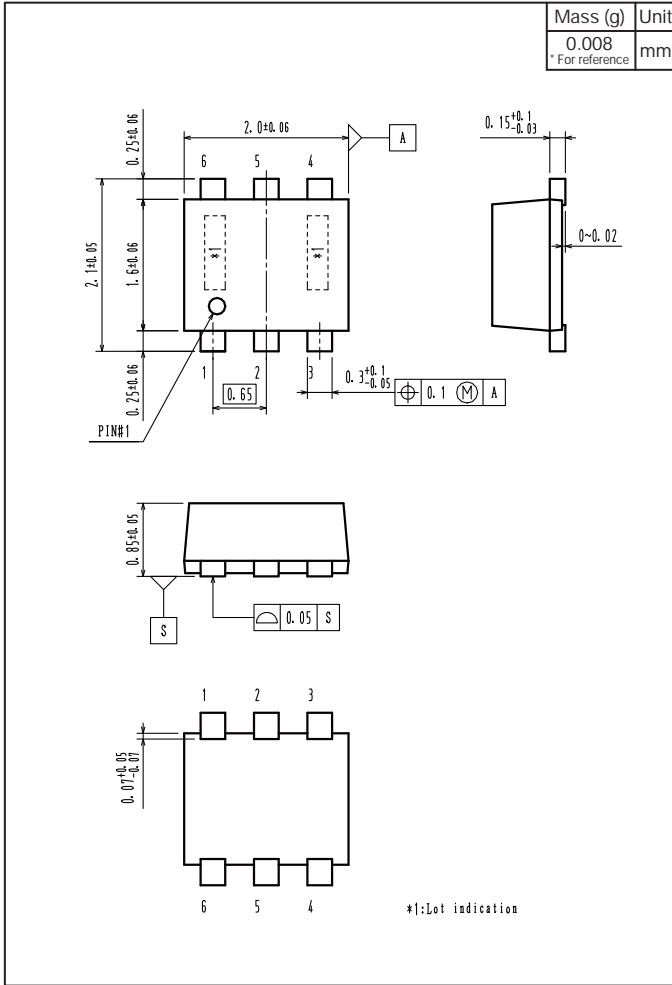
2-2. Device placement direction



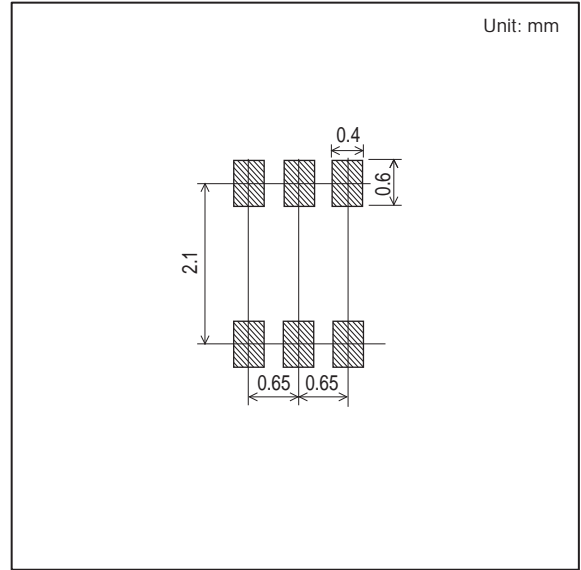
Those with pin | index on the feed hole side.....TL

MCH6448

Outline Drawing MCH6448-TL-H



Land Pattern Example



Note on usage : Since the MCH6448 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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