



SANYO Semiconductors

# DATA SHEET

An ON Semiconductor Company

## MCH6444 — N-Channel Silicon MOSFET — General-Purpose Switching Device Applications

### Features

- ON-resistance  $R_{DS(on)} I = 75m\Omega$  (typ.)
- 4V drive
- Halogen free compliance
- Protection diode in

### Specifications

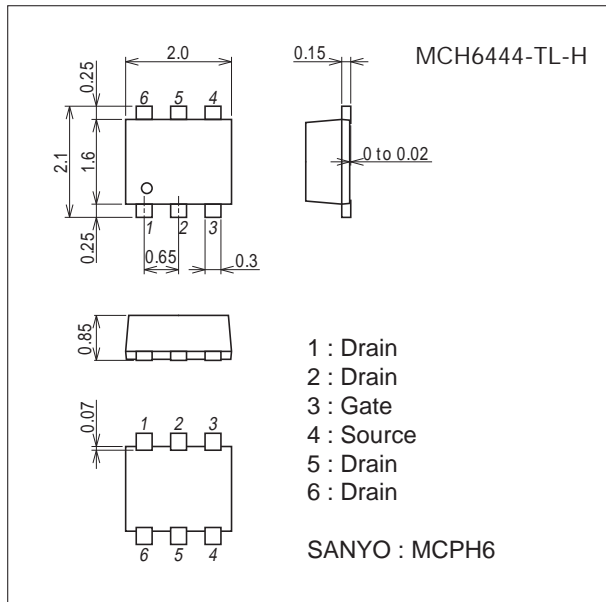
Absolute Maximum Ratings at  $T_a = 25^\circ C$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		35	V
Gate-to-Source Voltage	$V_{GSS}$		$\pm 20$	V
Drain Current (DC)	$I_D$		2.5	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu s$ , duty cycle $\leq 1\%$	10	A
Allowable Power Dissipation	$P_D$	When mounted on ceramic substrate (900mm <sup>2</sup> × 0.8mm)	0.8	W
Channel Temperature	$T_{ch}$		150	°C
Storage Temperature	$T_{stg}$		-55 to +150	°C

### Package Dimensions

unit : mm (typ)

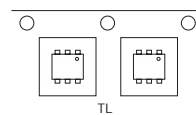
7022A-009



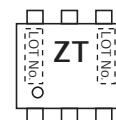
### Product & Package Information

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

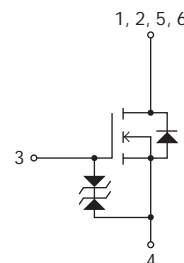
### Packing Type : TL



### Marking



### Electrical Connection

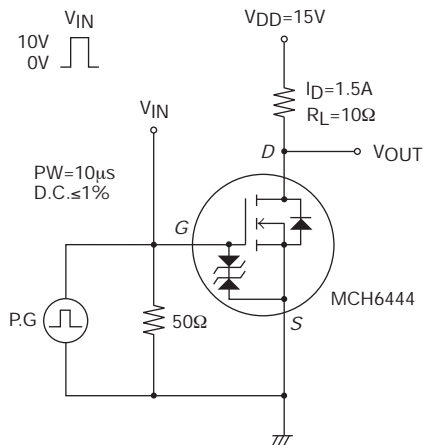


# MCH6444

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

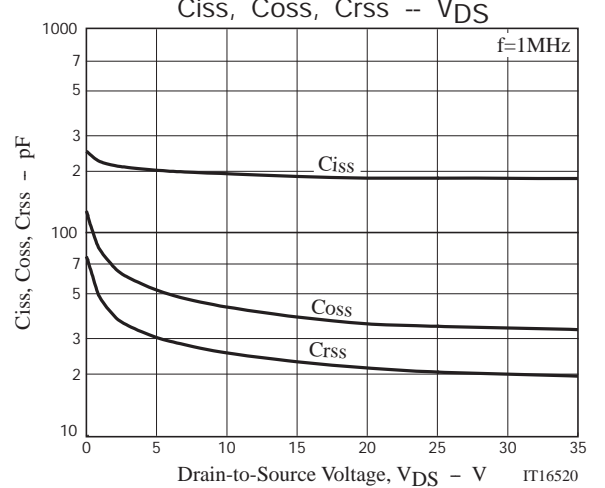
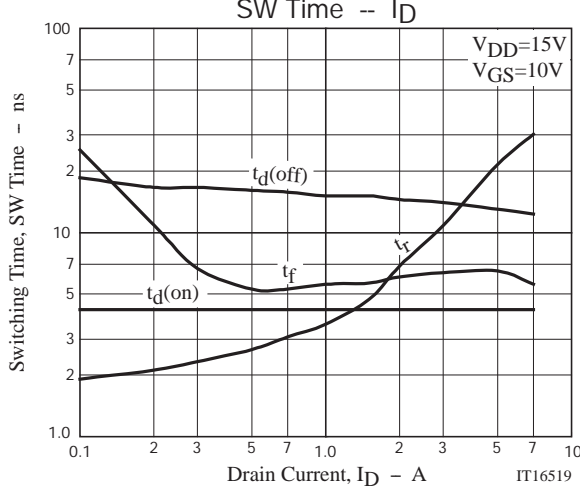
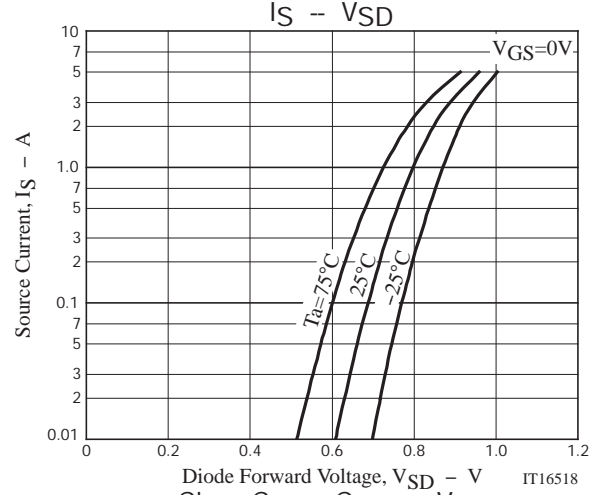
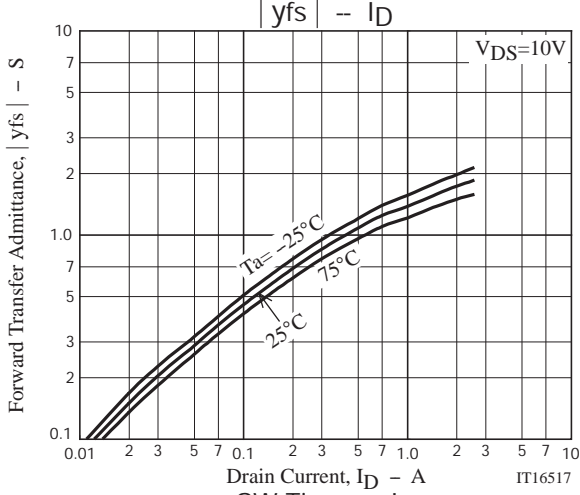
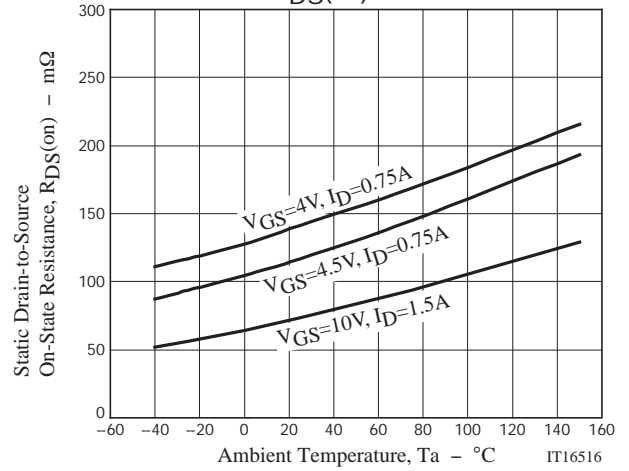
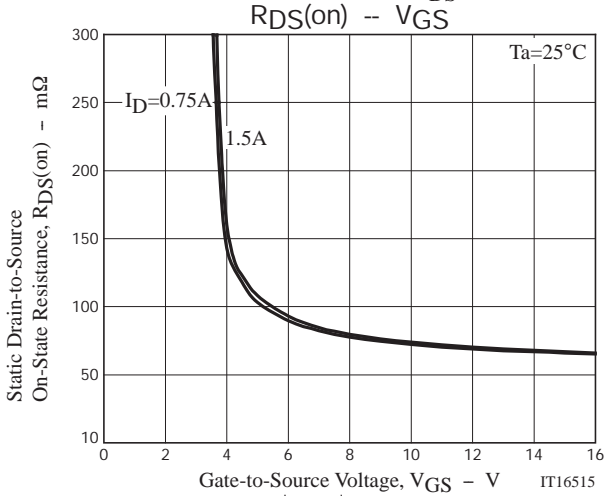
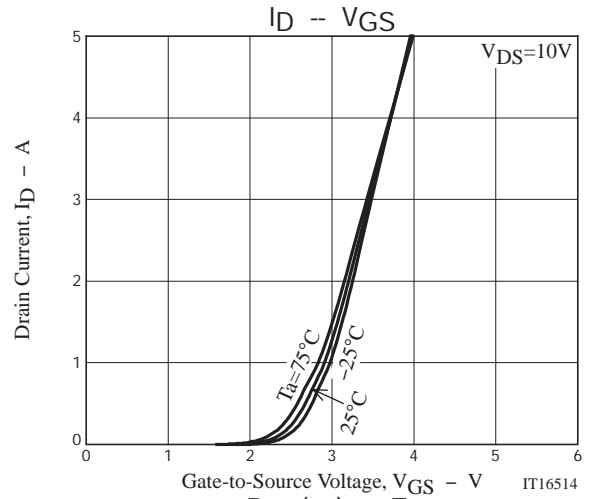
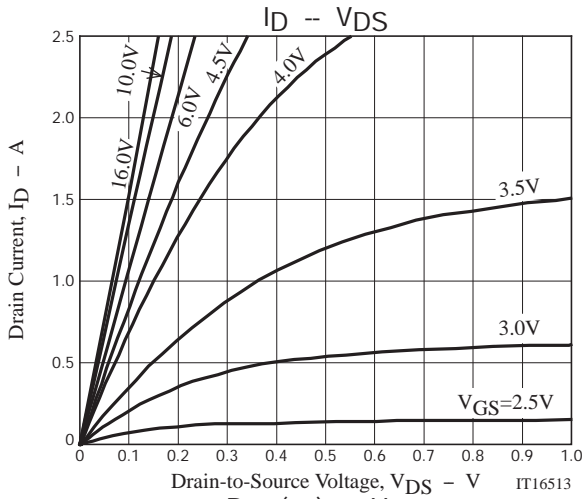
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1\text{mA}$ , $V_{GS}=0\text{V}$	35			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=35\text{V}$ , $V_{GS}=0\text{V}$			1	$\mu\text{A}$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 16\text{V}$ , $V_{DS}=0\text{V}$			$\pm 10$	$\mu\text{A}$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10\text{V}$ , $I_D=1\text{mA}$	1.2		2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10\text{V}$ , $I_D=1.5\text{A}$		1.7		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=1.5\text{A}$ , $V_{GS}=10\text{V}$		75	98	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D=0.75\text{A}$ , $V_{GS}=4.5\text{V}$		118	166	$\text{m}\Omega$
	$R_{DS(on)3}$	$I_D=0.75\text{A}$ , $V_{GS}=4\text{V}$		143	201	$\text{m}\Omega$
Input Capacitance	$C_{iss}$	$V_{DS}=20\text{V}$ , $f=1\text{MHz}$		186		$\text{pF}$
Output Capacitance	$C_{oss}$			36		$\text{pF}$
Reverse Transfer Capacitance	$C_{rss}$			22		$\text{pF}$
Turn-ON Delay Time	$t_{d(on)}$		See specified Test Circuit.		4.2	
Rise Time	$t_r$			4.7		ns
Turn-OFF Delay Time	$t_{d(off)}$			15		ns
Fall Time	$t_f$			5.7		ns
Total Gate Charge	$Q_g$	$V_{DS}=20\text{V}$ , $V_{GS}=10\text{V}$ , $I_D=2.5\text{A}$			4	
Gate-to-Source Charge	$Q_{gs}$			0.9		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$			0.7		nC
Diode Forward Voltage	$V_{SD}$		$I_S=2.5\text{A}$ , $V_{GS}=0\text{V}$		0.86	1.2

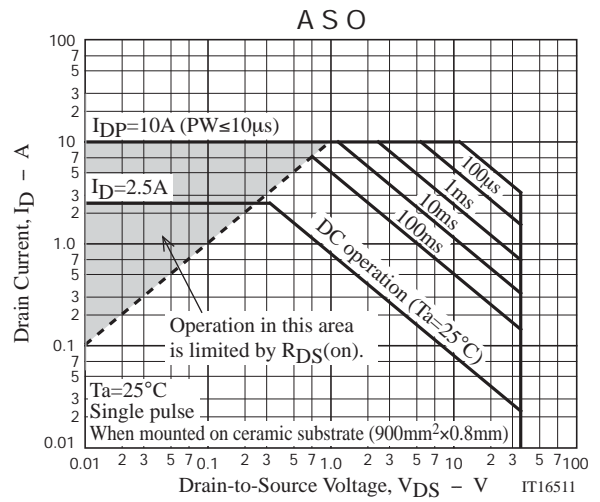
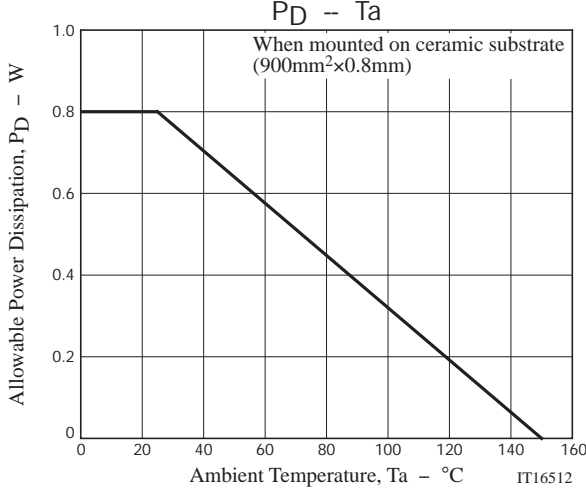
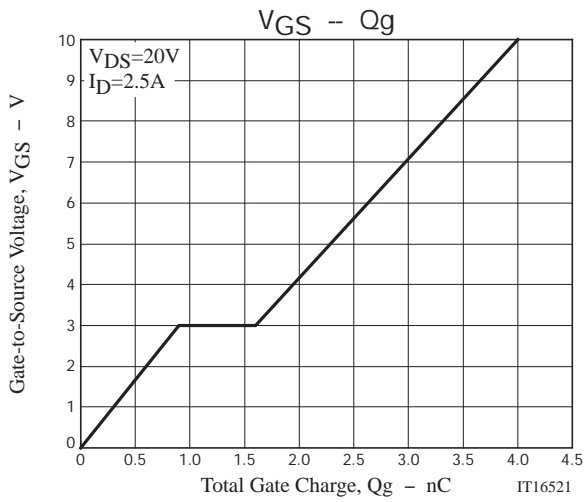
## Switching Time Test Circuit



## Ordering Information

Device	Package	Shipping	memo
MCH6444-TL-H	MCPH6	3,000pcs./reel	Pb Free and Halogen Free





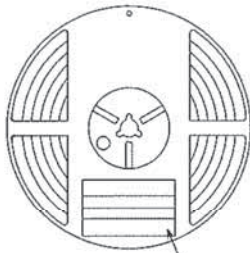
Taping Specification

MCH6444-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

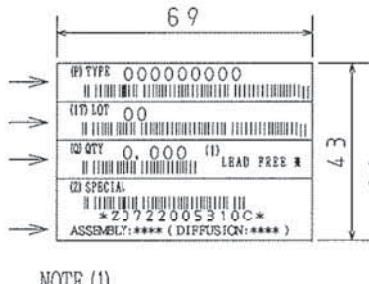
Packing method



Type No.  
LOT No.  
Quantity  
Origin

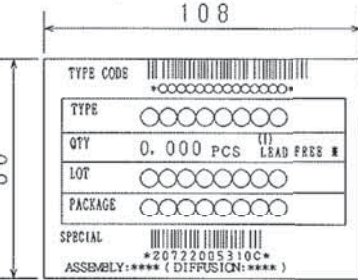
Reel label

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.)



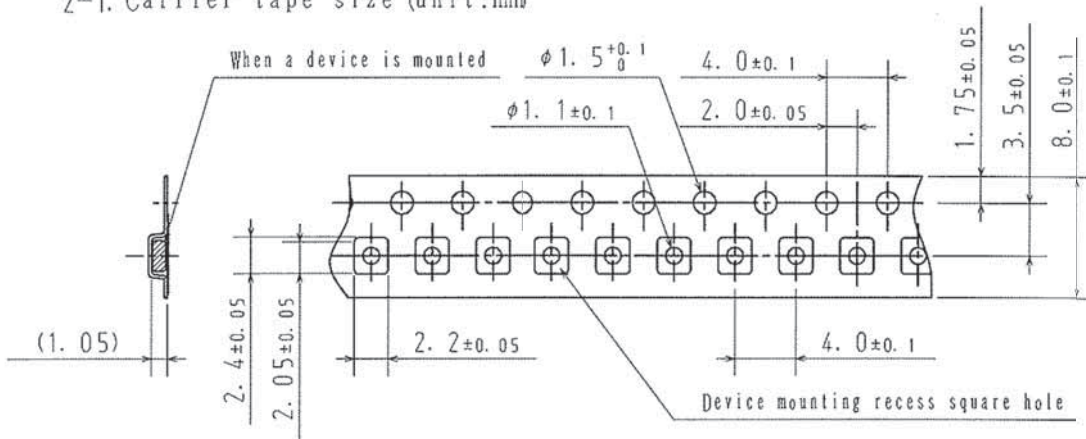
NOTE (1)

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

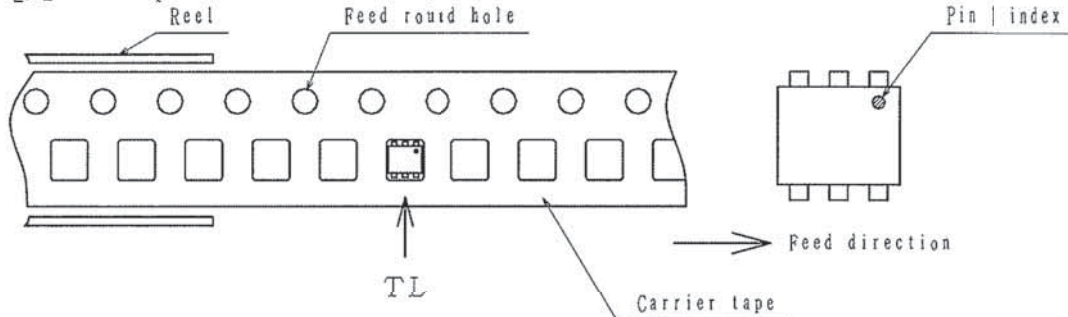
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

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



Note on usage : Since the MCH6444 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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