



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

MCH6445 — N-Channel Silicon MOSFET — General-Purpose Switching Device Applications

Features

- 4V drive
- Low ON-resistance
- Protection diode in

Specifications

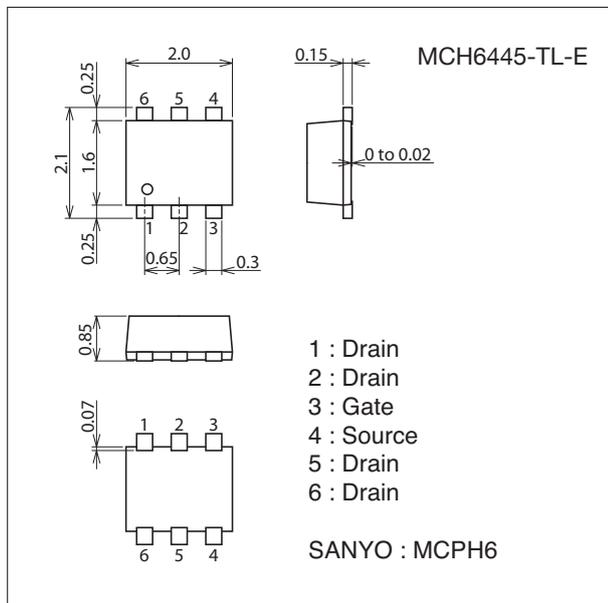
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	VDSS		60	V
Gate-to-Source Voltage	VGSS		±20	V
Drain Current (DC)	ID		4	A
Drain Current (Pulse)	IDP	PW≤10μs, duty cycle≤1%	16	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)

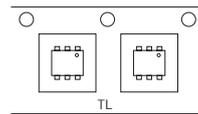
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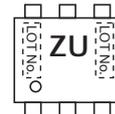
Product & Package Information

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

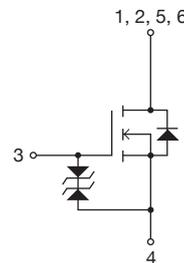
Packing Type : TL



Marking



Electrical Connection

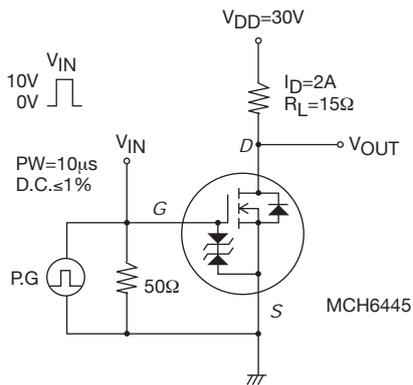


MCH6445

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

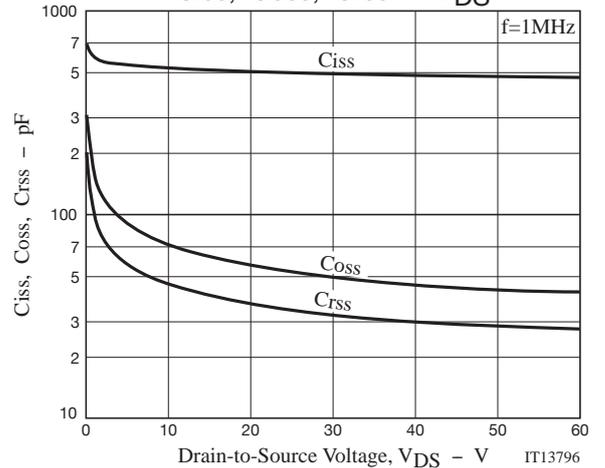
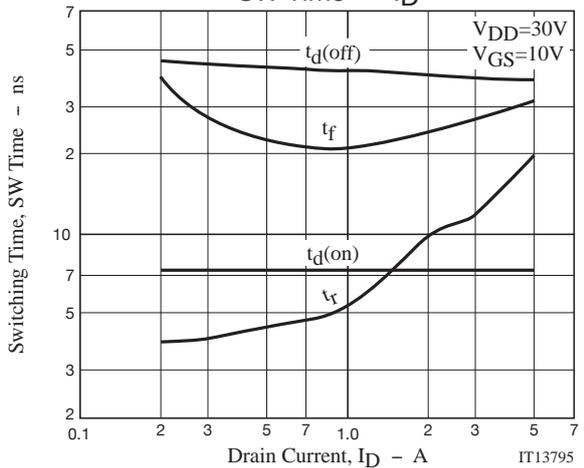
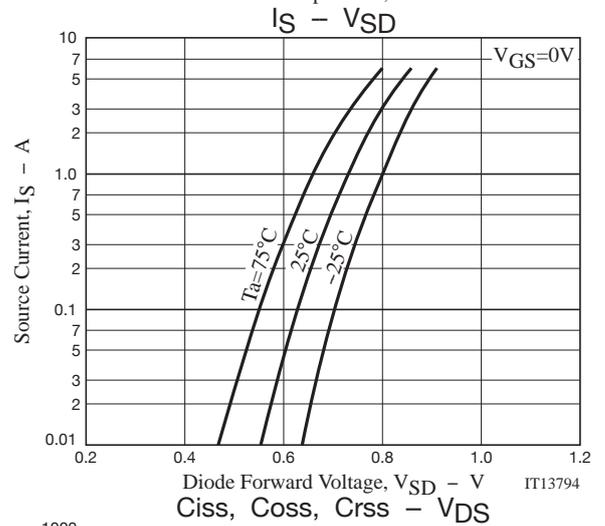
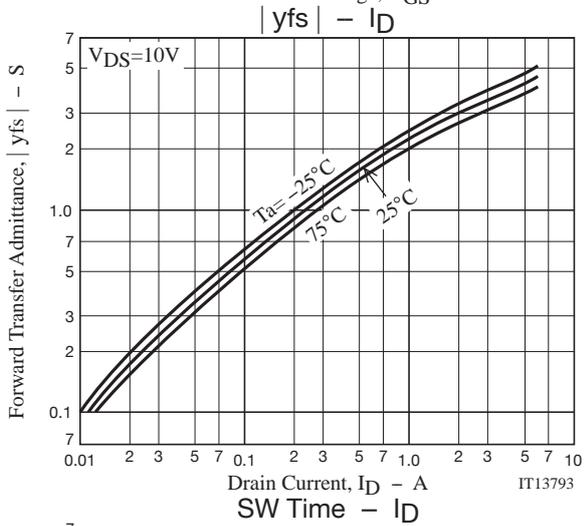
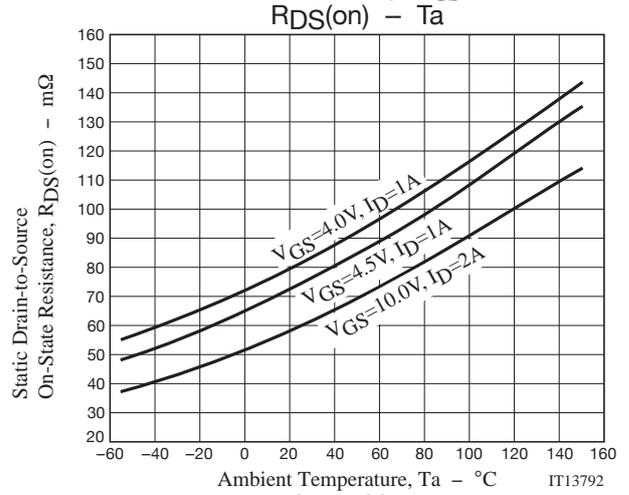
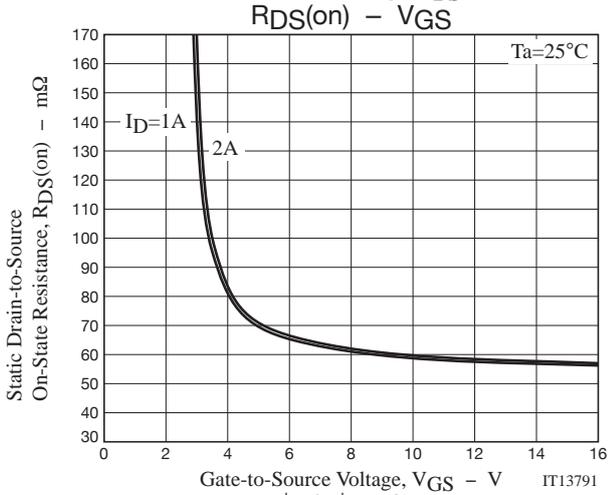
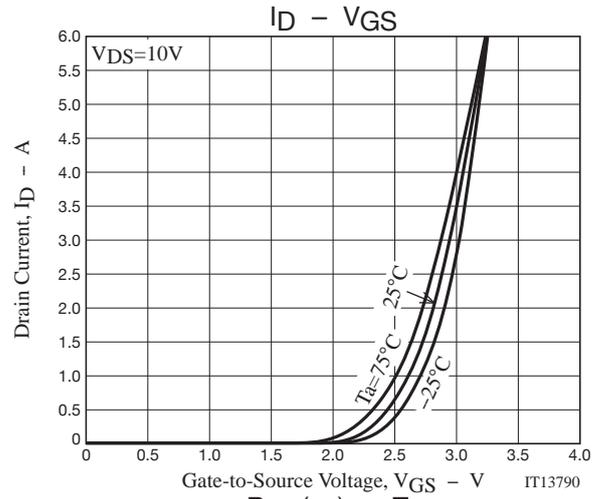
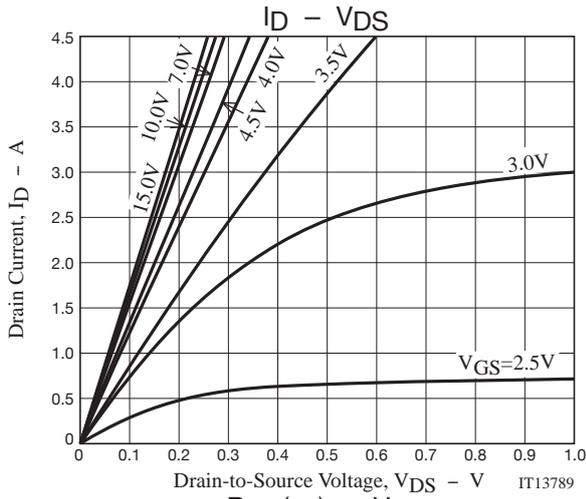
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1\text{mA}$, $V_{GS}=0\text{V}$	60			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60\text{V}$, $V_{GS}=0\text{V}$			1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 16\text{V}$, $V_{DS}=0\text{V}$			± 10	μA
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} $	$V_{DS}=10\text{V}$, $I_D=2\text{A}$		3		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=2\text{A}$, $V_{GS}=10\text{V}$		60	78	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D=1\text{A}$, $V_{GS}=4.5\text{V}$		74	104	$\text{m}\Omega$
	$R_{DS(on)3}$	$I_D=1\text{A}$, $V_{GS}=4\text{V}$		81	114	$\text{m}\Omega$
Input Capacitance	C_{iss}	$V_{DS}=20\text{V}$, $f=1\text{MHz}$		505		pF
Output Capacitance	C_{oss}			57		pF
Reverse Transfer Capacitance	C_{rss}			37		pF
Turn-ON Delay Time	$t_{d(on)}$		See specified Test Circuit.		7.3	
Rise Time	t_r			9.8		ns
Turn-OFF Delay Time	$t_{d(off)}$			40		ns
Fall Time	t_f			24		ns
Total Gate Charge	Q_g	$V_{DS}=30\text{V}$, $V_{GS}=10\text{V}$, $I_D=4\text{A}$			10	
Gate-to-Source Charge	Q_{gs}			1.6		nC
Gate-to-Drain "Miller" Charge	Q_{gd}			2.1		nC
Diode Forward Voltage	V_{SD}		$I_S=4\text{A}$, $V_{GS}=0\text{V}$		0.82	1.2

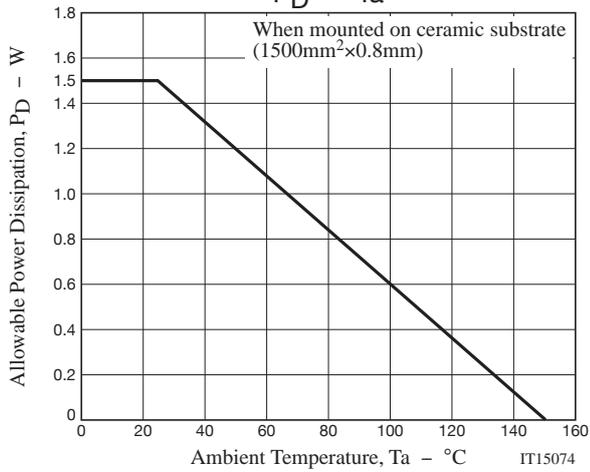
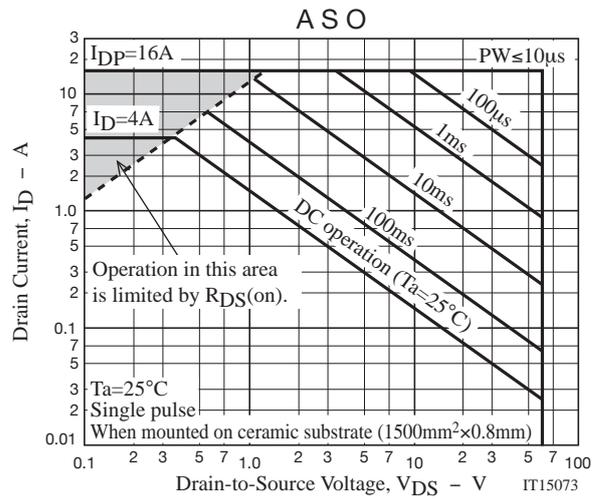
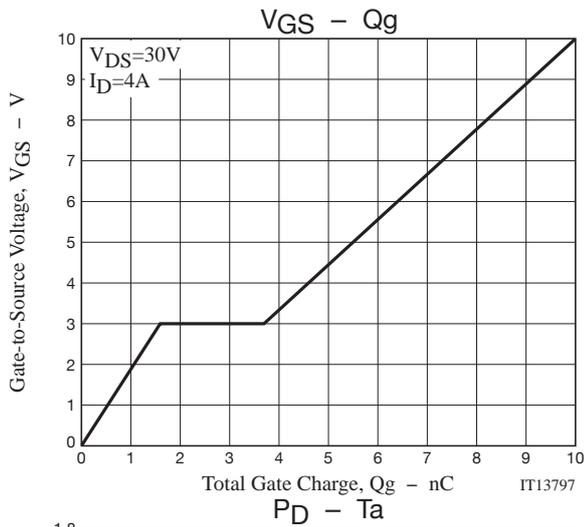
Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
MCH6445-TL-E	MCPH6	3,000pcs./reel	Pb Free





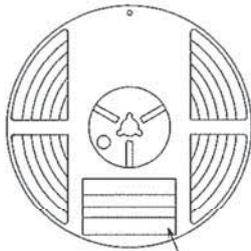
Taping Specification

MCH6445-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

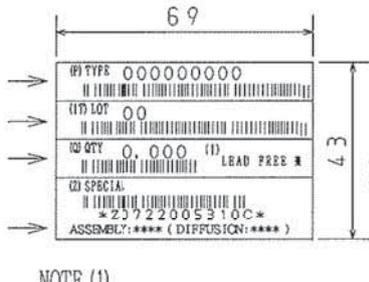
Packing method



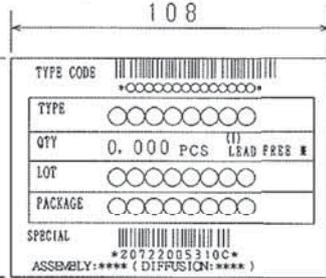
Reel label

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.)



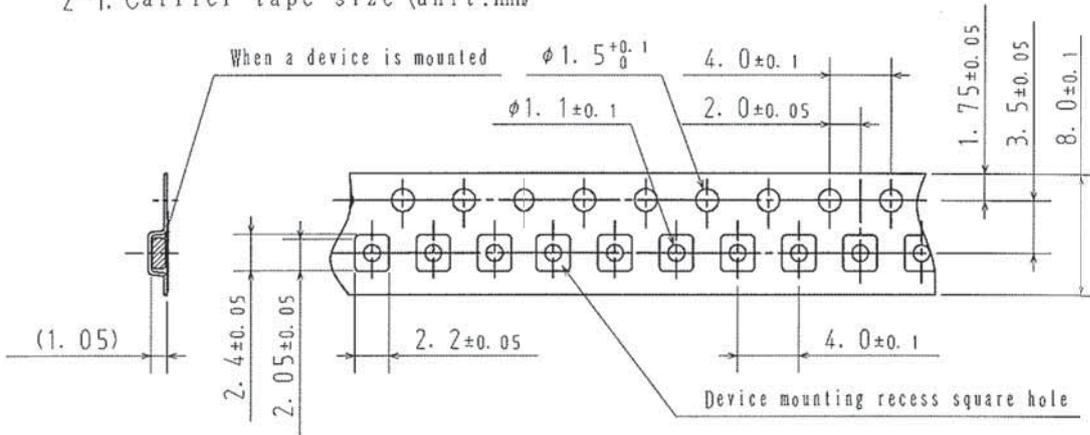
NOTE (1)

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

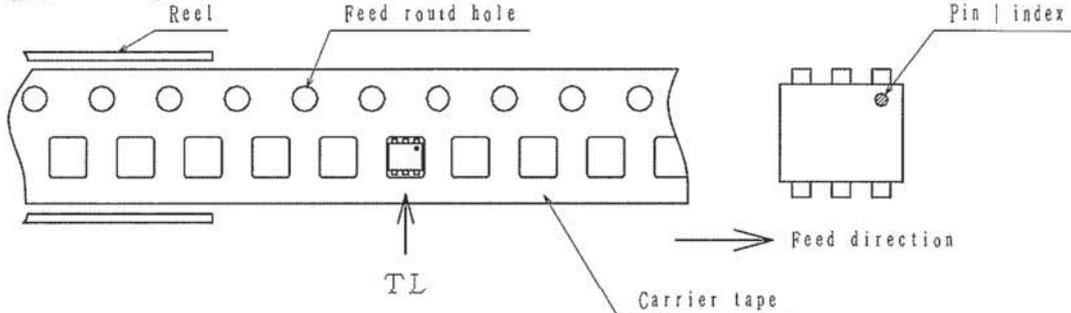
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

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

Note on usage : Since the MCH6445 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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