



MCH3375

P-Channel Power MOSFET -30V, -1.6A, 295mΩ, Single MCPH3

ON Semiconductor®

<http://onsemi.com>

Features

- ON-resistance $R_{DS(on)1}=227m\Omega$ (typ.)
- 4V drive
- Halogen free compliance

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain to Source Voltage	V_{DSS}		-30	V
Gate to Source Voltage	V_{GSS}		± 20	V
Drain Current (DC)	I_D		-1.6	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu s$, duty cycle $\leq 1\%$	-6.4	A
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (900mm ² ×0.8mm)	0.8	W
Channel Temperature	T_{ch}		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

This product is designed to "ESD immunity < 200V**", so please take care when handling.

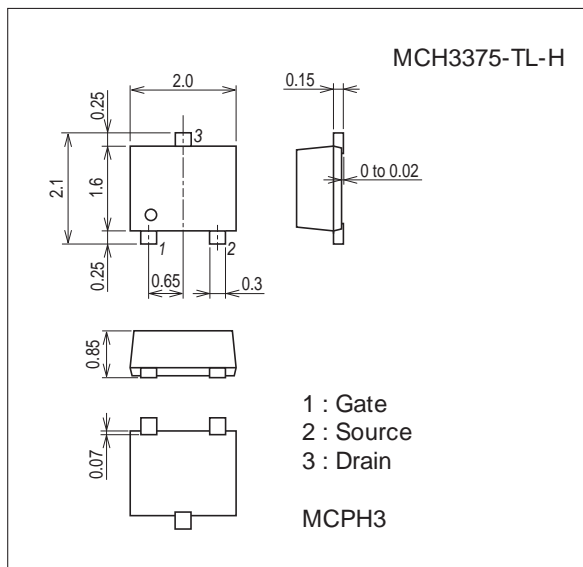
* Machine Model

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Package Dimensions

unit : mm (typ)

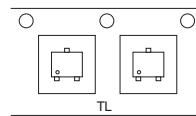
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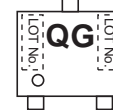
Ordering & Package Information

Device	Package	Shipping	note
MCH3375-TL-H	MCPH3 SC-70, SOT-323	3,000 pcs./reel	Pb-Free and Halogen Free

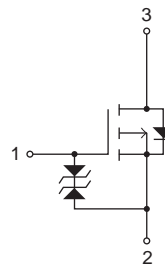
Packing Type: TL



Marking



Electrical Connection

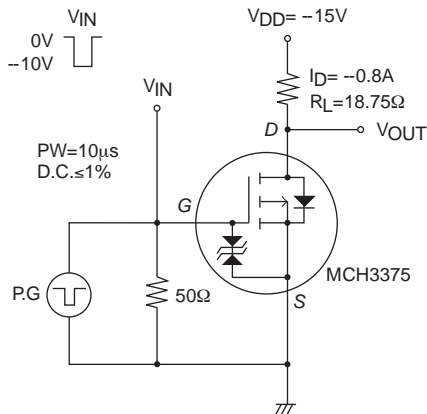


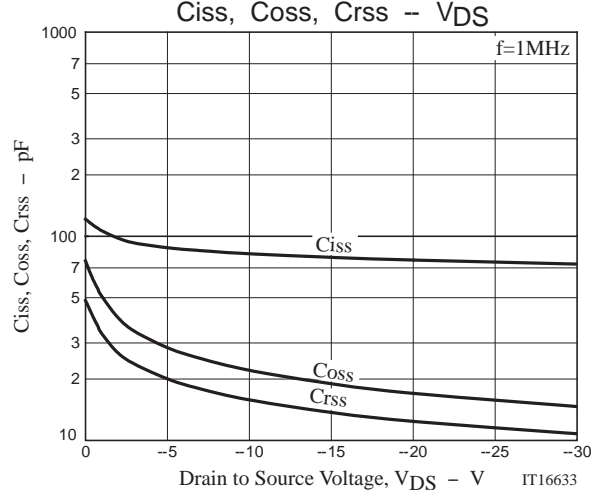
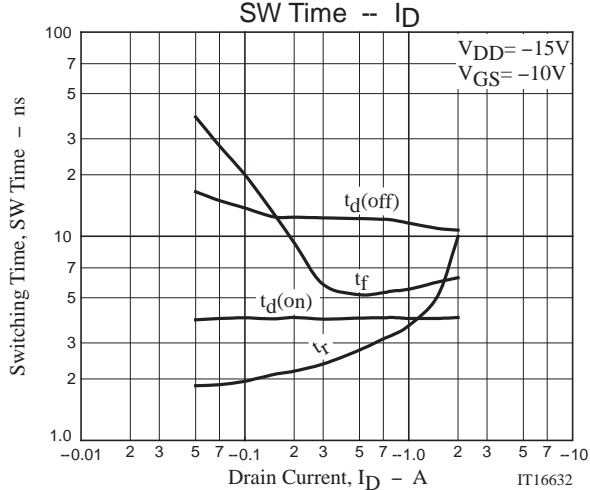
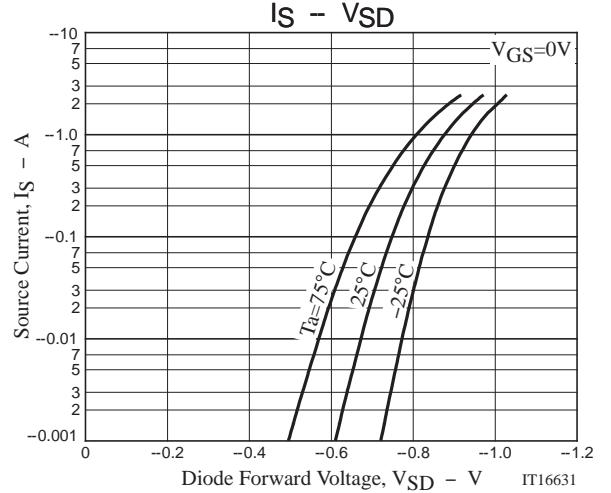
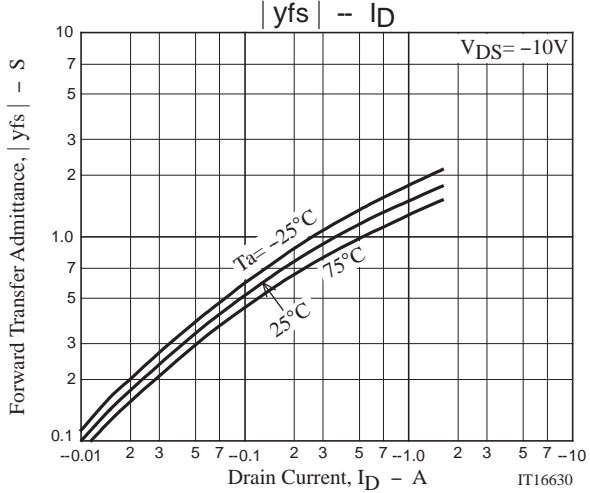
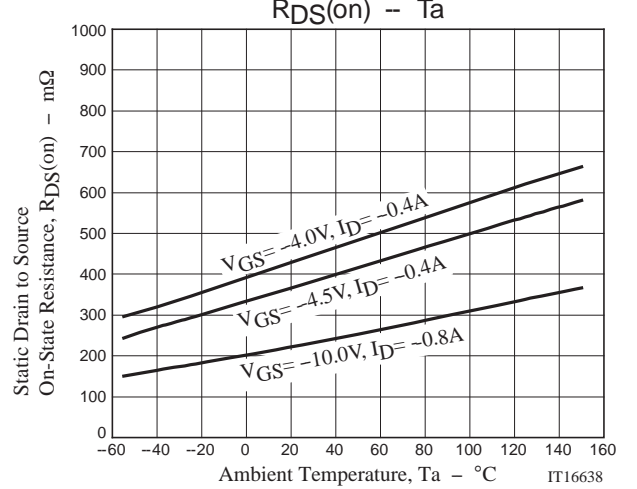
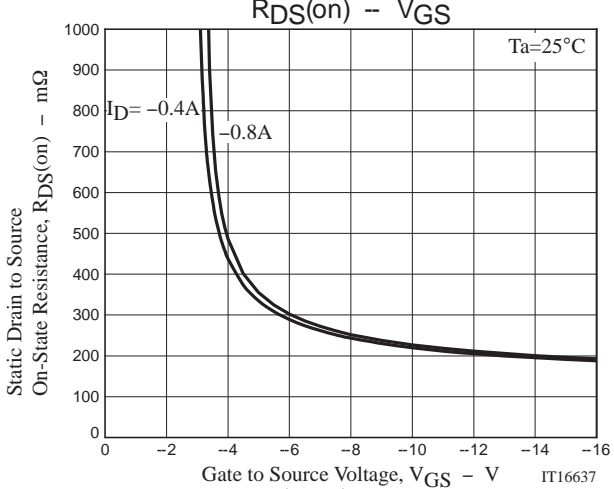
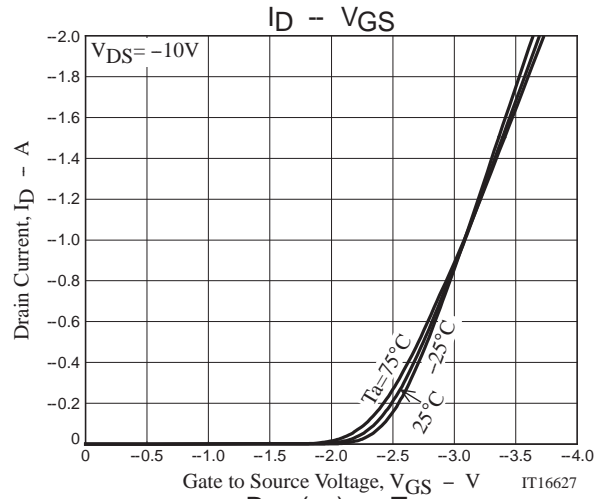
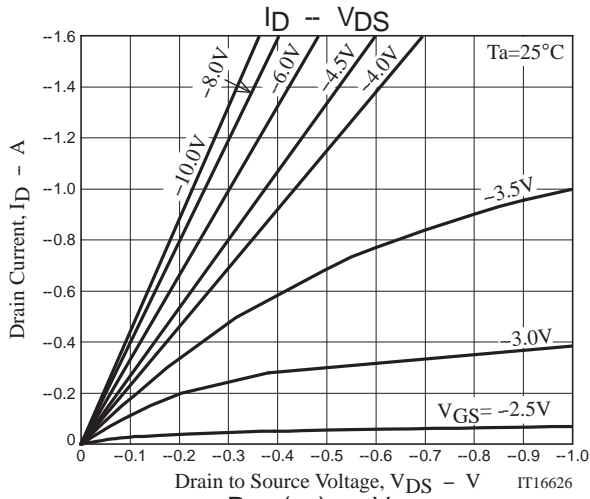
MCH3375

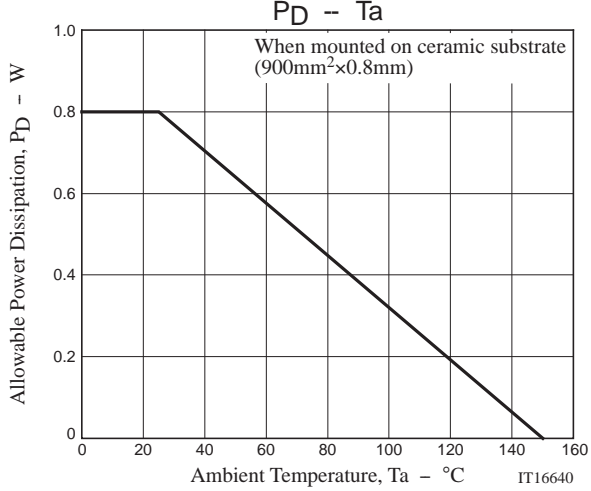
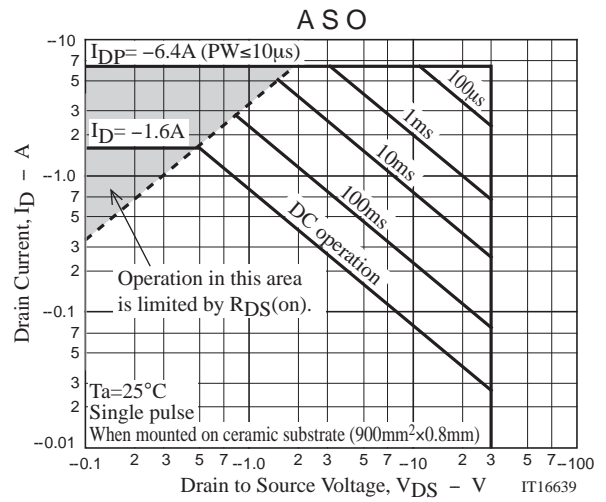
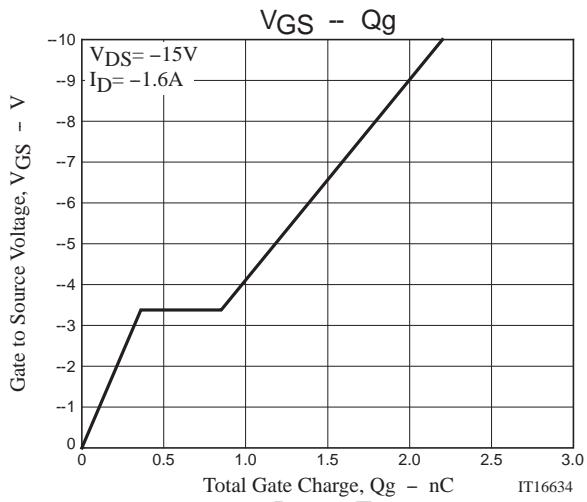
Electrical Characteristics at $T_a=25^\circ\text{C}$

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	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} $	$V_{DS}=-10\text{V}, I_D=-0.8\text{A}$		1.3		S
Static Drain to Source On-State Resistance	$R_{DS(on)1}$	$I_D=-0.8\text{A}, V_{GS}=-10\text{V}$		227	295	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D=-0.4\text{A}, V_{GS}=-4.5\text{V}$		374	523	$\text{m}\Omega$
	$R_{DS(on)3}$	$I_D=-0.4\text{A}, V_{GS}=-4\text{V}$		435	609	$\text{m}\Omega$
Input Capacitance	C_{iss}			82		pF
Output Capacitance	C_{oss}	$V_{DS}=-10\text{V}, f=1\text{MHz}$		22		pF
Reverse Transfer Capacitance	C_{rss}			16		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		4.0		ns
Rise Time	t_r			3.3		ns
Turn-OFF Delay Time	$t_d(off)$			12		ns
Fall Time	t_f			5.4		ns
Total Gate Charge	Q_g				2.2	
Gate to Source Charge	Q_{gs}	$V_{DS}=-15\text{V}, V_{GS}=-10\text{V}, I_D=-1.6\text{A}$		0.36		nC
Gate to Drain "Miller" Charge	Q_{gd}			0.49		nC
Diode Forward Voltage	V_{SD}	$I_S=-1.6\text{A}, V_{GS}=0\text{V}$		-0.9	-1.5	V

Switching Time Test Circuit







MCH3375

Taping Specification

MCH3375-TL-H

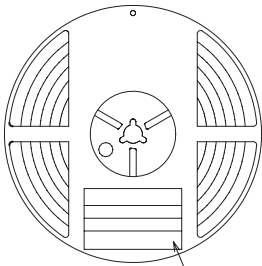
1. Packing Format

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)
MCPH3	MCPH3	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

Reel label, Inner box label
(unit: mm)

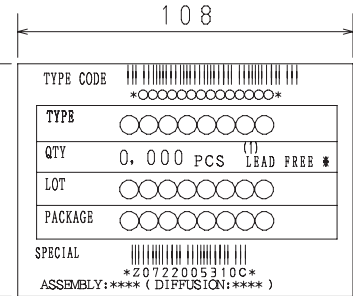
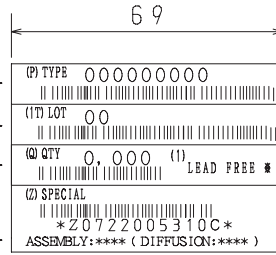
Outer box label
It is a label at the time of factory shipments.
The form of a label may change in physical distribution process.

Packing method



Reel label

Type No.
LOT No.
Quantity
Origin



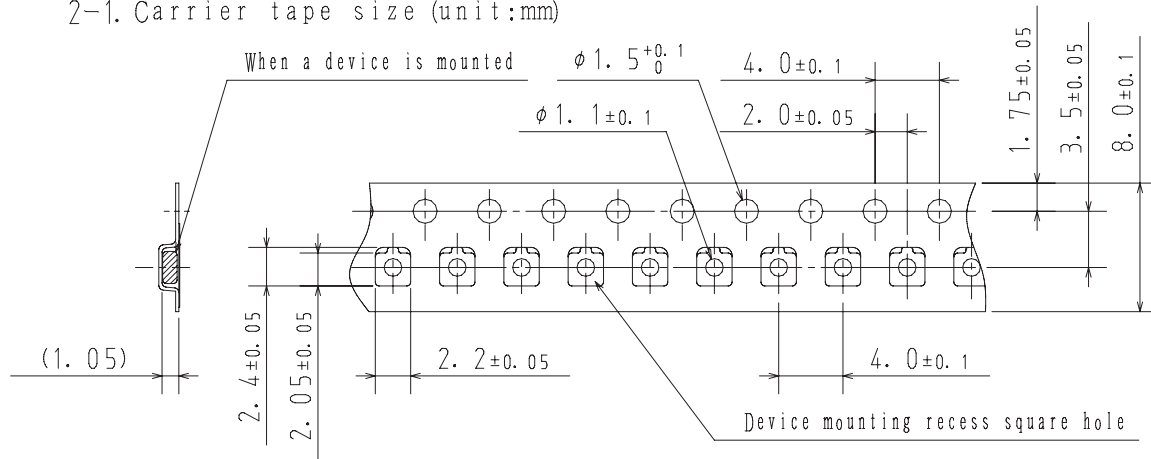
NOTE (1)

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

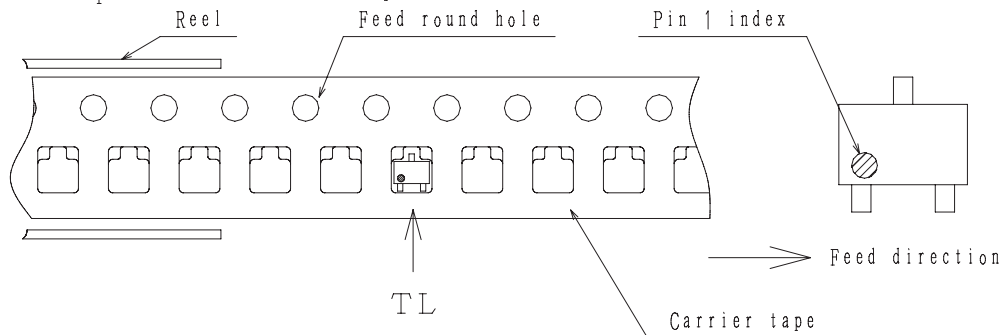
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



2-2. Device placement direction

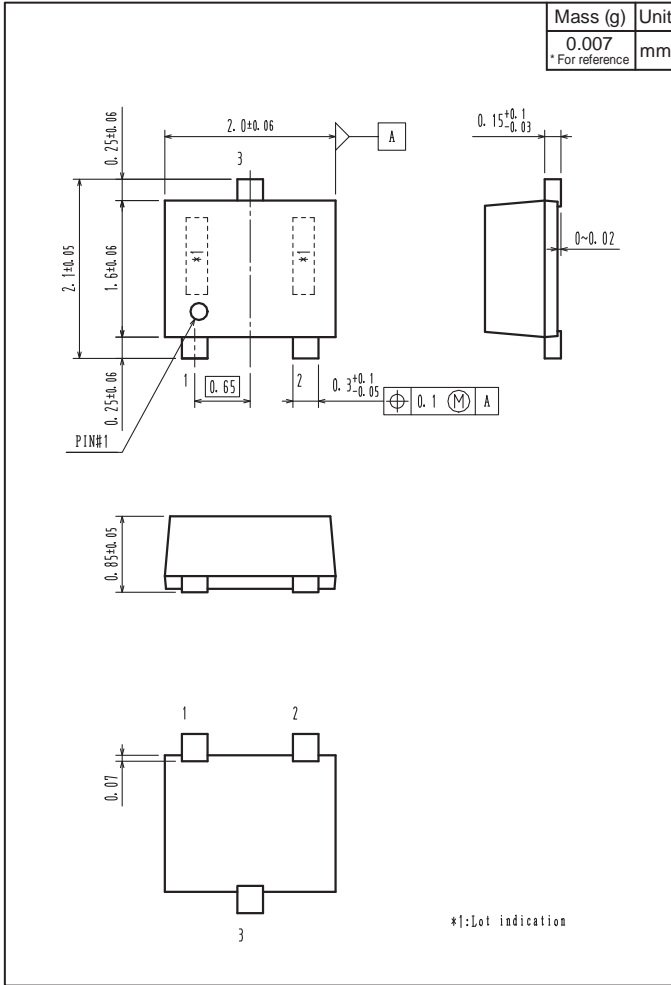


Those with pin 1 index on the feed hole side.....TL

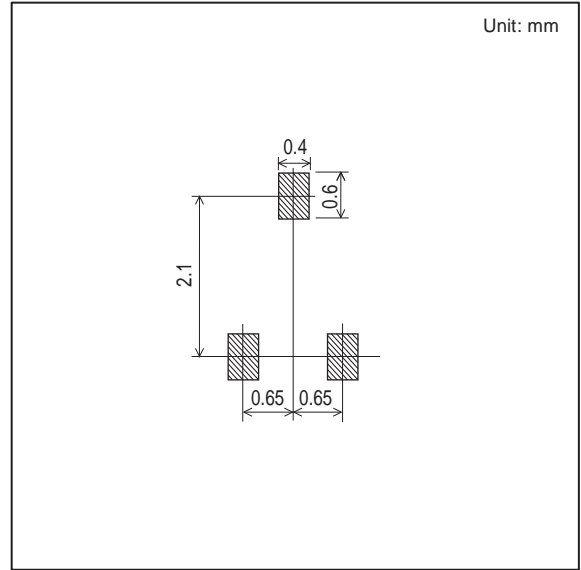
MCH3375

Outline Drawing

MCH3375-TL-H



Land Pattern Example



Note on usage : Since the MCH3375 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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