



MCH3374

P-Channel Power MOSFET -12V, -3A, 70mΩ, Single MCPH3

ON Semiconductor®

<http://onsemi.com>

Features

- Low ON-resistance
- Ultrahigh-speed switching
- 1.8V drive

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		-12	V
Gate-to-Source Voltage	V _{GSS}		±8	V
Drain Current (DC)	I _D		-3	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	-12	A
Allowable Power Dissipation	P _D	When mounted on ceramic substrate (900mm ² ×0.8mm)	1.0	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.

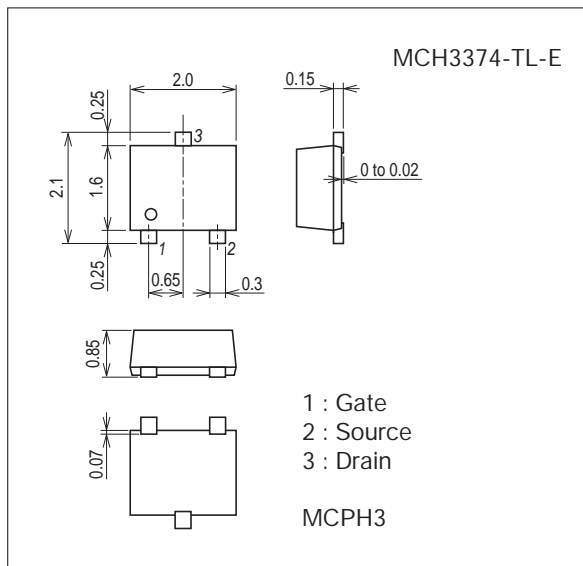
* Machine Model

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)

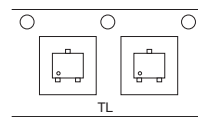
7019A-003



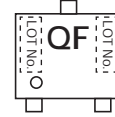
Product & Package Information

- Package : MCPH3
- JEITA, JEDEC : SC-70, SOT-323
- Minimum Packing Quantity : 3,000 pcs./reel

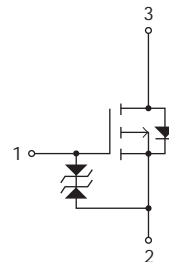
Packing Type : TL



Marking



Electrical Connection

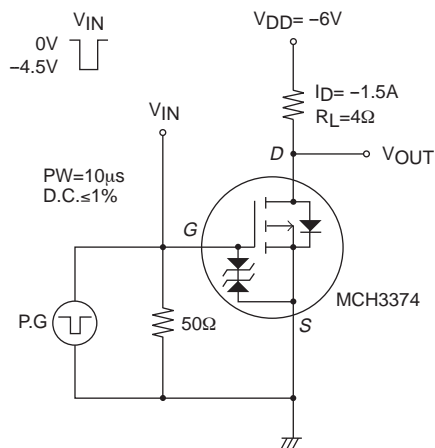


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Electrical Characteristics at Ta=25°C

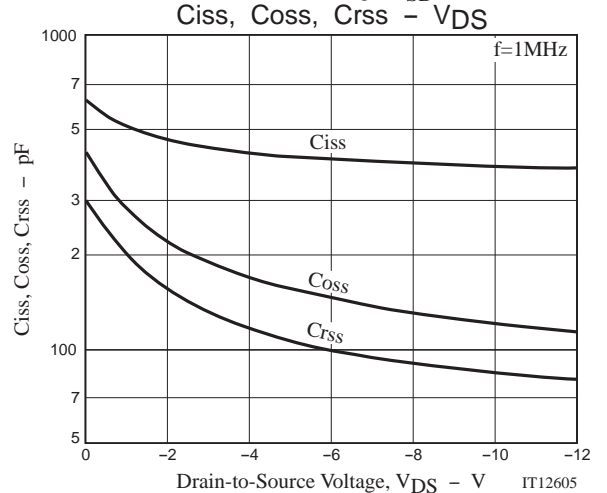
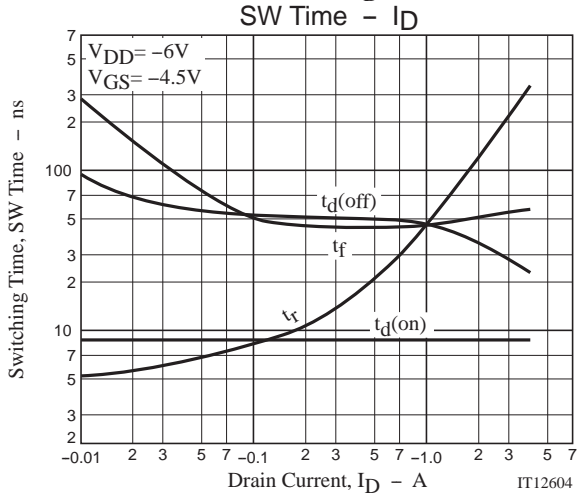
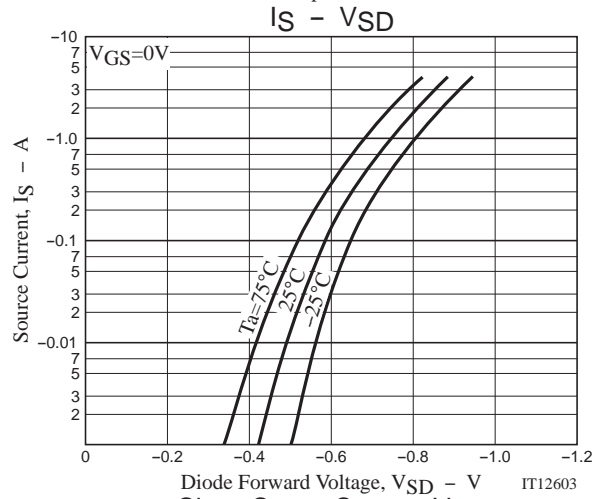
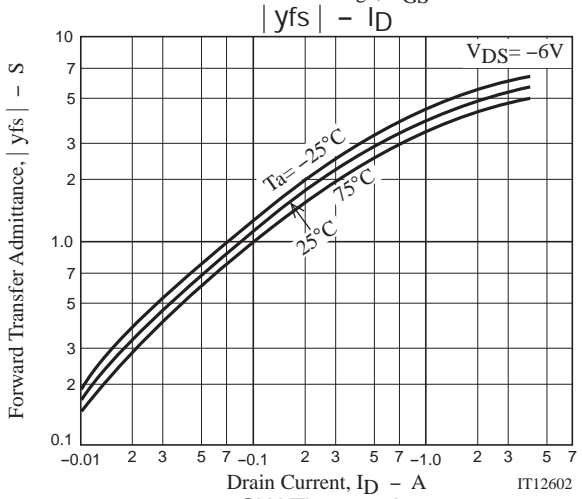
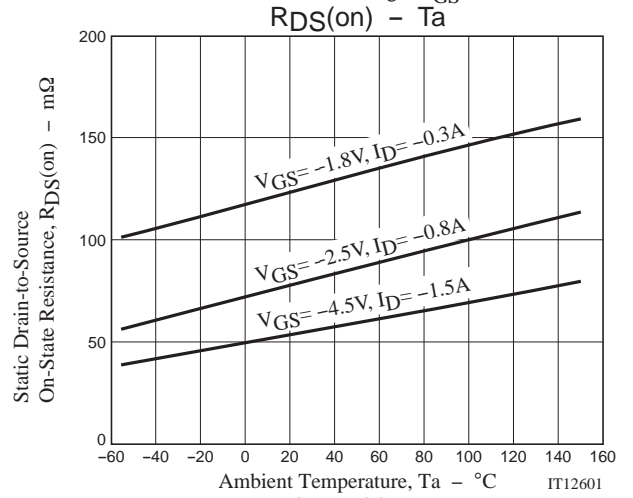
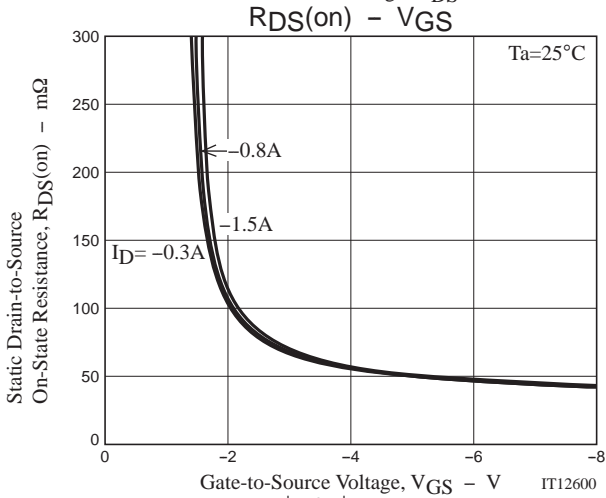
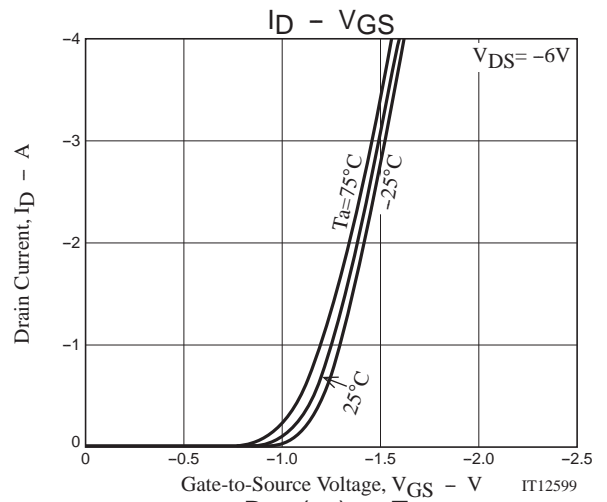
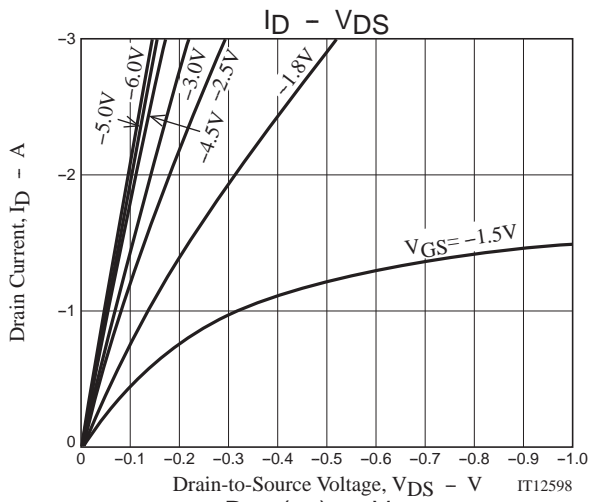
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V(BR)DSS	I _D =-1mA, V _{GS} =0V	-12			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =-12V, V _{GS} =0V			-10	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±6.4V, V _{DS} =0V			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =-6V, I _D =-1mA	-0.4		-1.4	V
Forward Transfer Admittance	y _{fs}	V _{DS} =-6V, I _D =-1.5A	2.7	4.5		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =-1.5A, V _{GS} =-4.5V		54	70	mΩ
	R _{DS(on)2}	I _D =-0.8A, V _{GS} =-2.5V		80	115	mΩ
	R _{DS(on)3}	I _D =-0.3A, V _{GS} =-1.8V		125	215	mΩ
Input Capacitance	C _{iss}	V _{DS} =-6V, f=1MHz		405		pF
Output Capacitance	C _{oss}			145		pF
Reverse Transfer Capacitance	C _{rss}			100		pF
Turn-ON Delay Time	t _{d(on)}		See specified Test Circuit.		8.8	
Rise Time	t _r			80		ns
Turn-OFF Delay Time	t _{d(off)}			41		ns
Fall Time	t _f			50		ns
Total Gate Charge	Q _g	V _{DS} =-6V, V _{GS} =-4.5V, I _D =-3A			5.6	
Gate-to-Source Charge	Q _{gs}			0.7		nC
Gate-to-Drain "Miller" Charge	Q _{gd}			1.6		nC
Diode Forward Voltage	V _{SD}	I _S =-3A, V _{GS} =0V		-0.85	-1.2	V

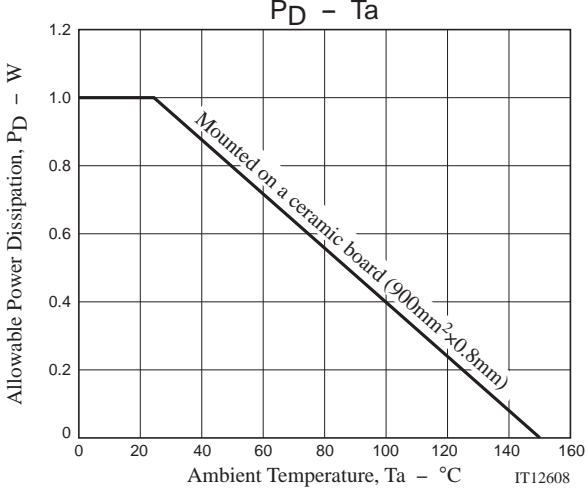
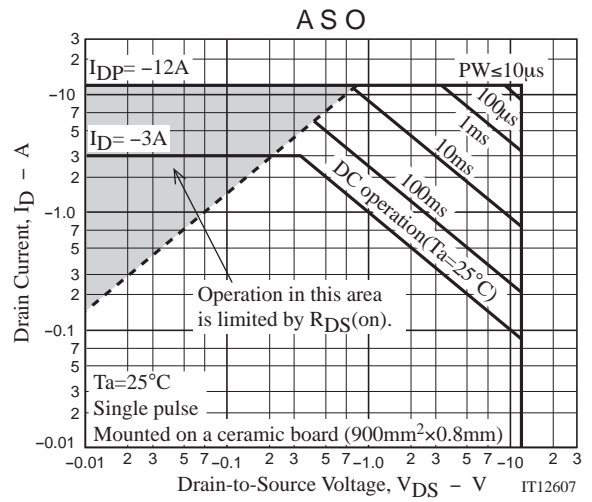
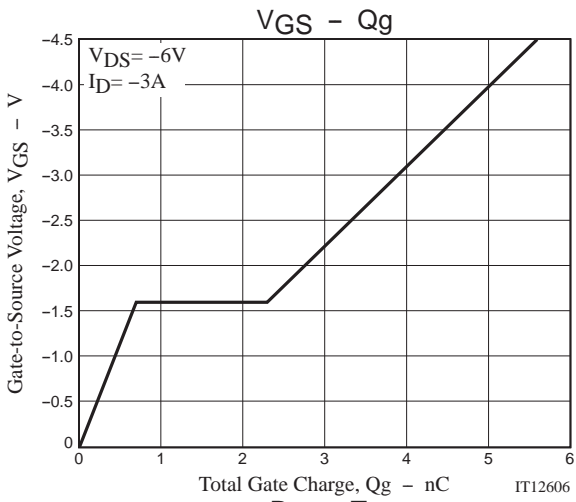
Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
MCH3374-TL-E	MCPH3	3,000pcs./reel	Pb Free





MCH3374

Taping Specification

MCH3374-TL-E

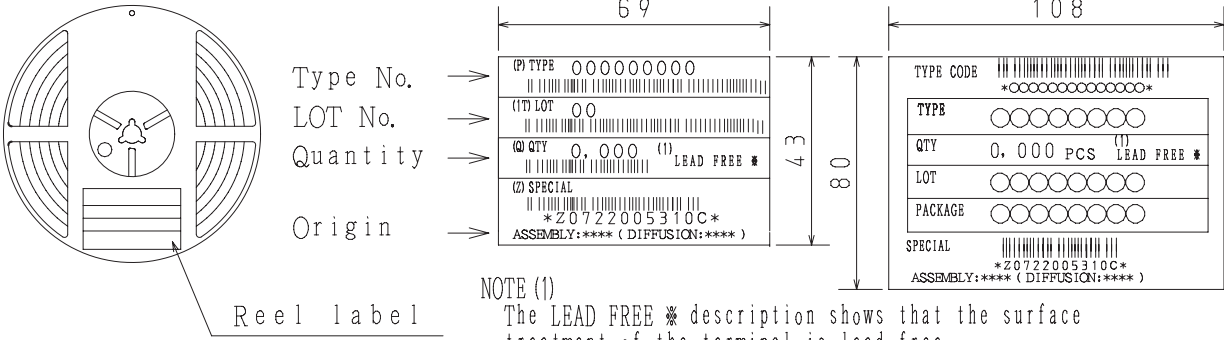
1. Packing Format

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)
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

Packing method

Reel label, Inner box label (unit:mm) Outer box label

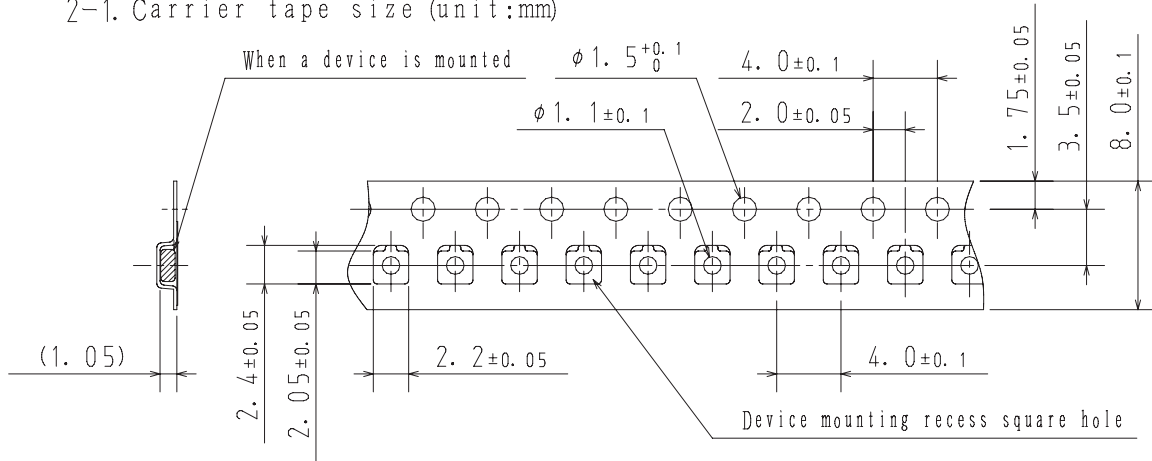
It is a label at the time of factory shipments.
The form of a label may change in physical distribution process.



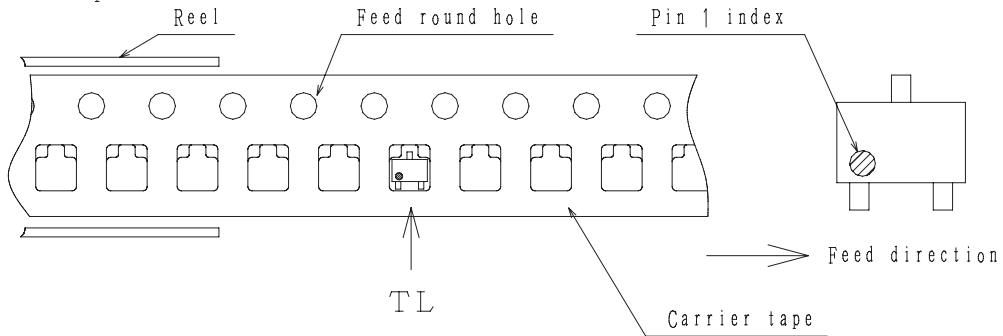
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



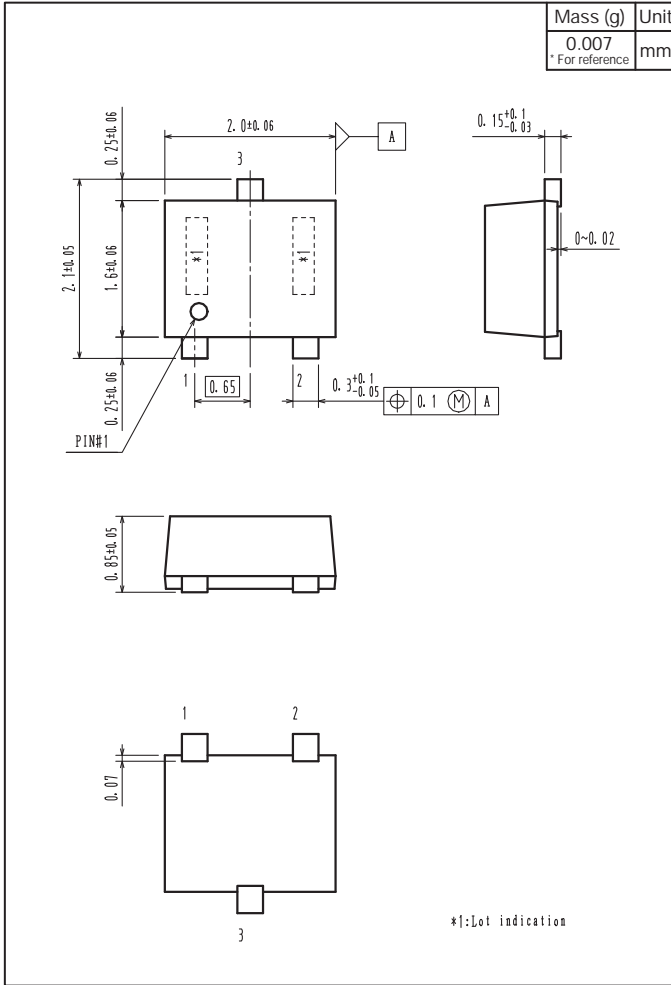
2-2. Device placement direction



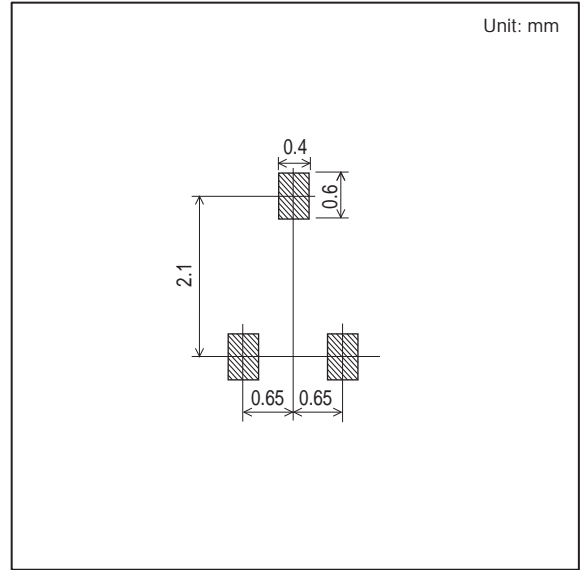
Those with pin 1 index on the feed hole side.....TL

MCH3374

Outline Drawing MCH3374-TL-E



Land Pattern Example



Note on usage : Since the MCH3374 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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