Ordering number : ENA1511A

SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

N-Channel Junction Silicon FET

MCH3914 — High-Frequency Amplifier, Analog Switch Applications

Features

- | yfs | is large
- Ciss is small
- Small package
- FBET process
- Halogen free compliance

Specifications

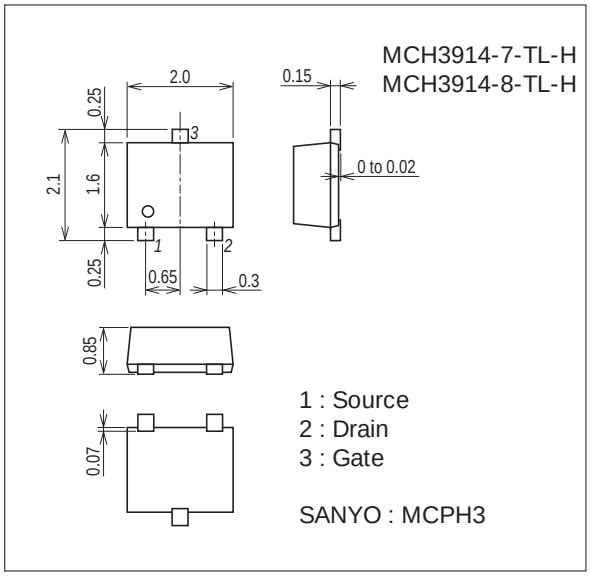
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSX}		15	V
Gate-to-Drain Voltage	V_{GDS}		−15	V
Gate Current	I_G		5	mA
Drain Current	I_D		50	mA
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (600mm^2×0.8mm)	300	mW
Junction Temperature	Tj		150	℃
Storage Temperature	Tstg		−55 to +150	℃

Package Dimensions

unit : mm (typ)

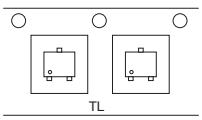
7019A-006



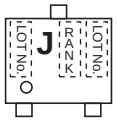
Product & Package Information

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

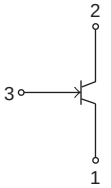
Packing Type : TL



Marking



Electrical Connection



Electrical Characteristics at Ta=25°C

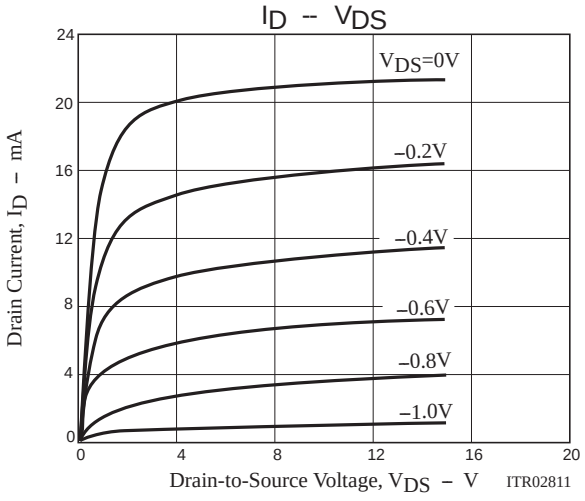
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gate-to-Drain Breakdown Voltage	$V_{(BR)GDS}$	I_G=−10μA, V_{DS}=0V	−15			V
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=−10V, V_{DS}=0V			−1.0	nA
Cutoff Voltage	V_{GS}(off)	V_{DS}=5V, I_D=10μA	−0.6	−1.4	−3.0	V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=5V, V_{GS}=0V	16.0*		50.0*	mA
Forward Transfer Admittance	| yfs |1	V_{DS}=5V, I_D=10mA, f=1kHz	14	21		mS
	| yfs |2	V_{DS}=5V, V_{GS}=0V, f=1kHz	14	29		mS
Input Capacitance	Ciss	V_{DS}=5V, V_{GS}=0V, f=1MHz		4.9		pF
Reverse Transfer Capacitance	Crss			1.4		pF

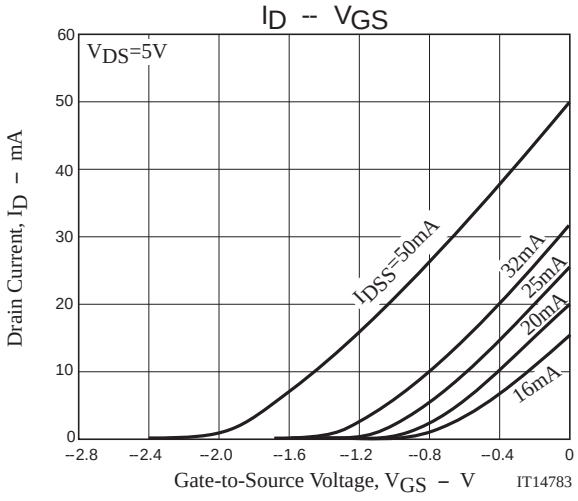
* : The MCH3914 is classified by I_{DSS} as follows : (unit : mA)

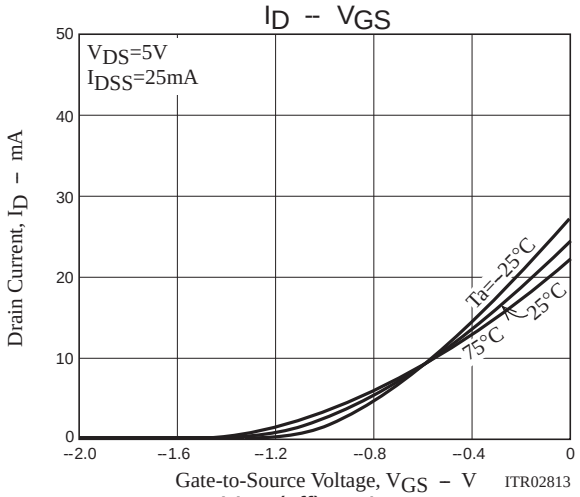
Rank	7	8
I_{DSS}	16.0 to 32.0	25.0 to 50.0

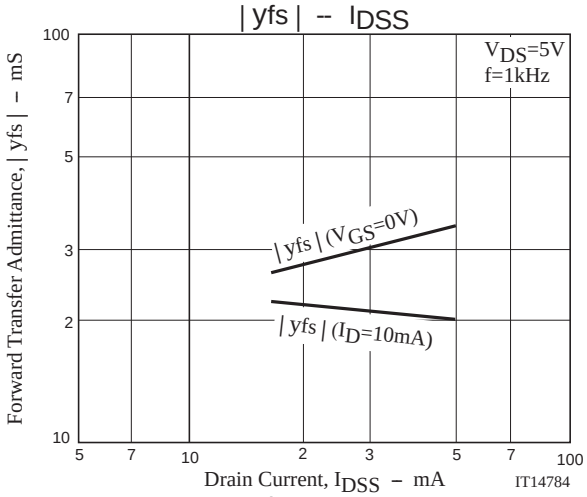
Ordering Information

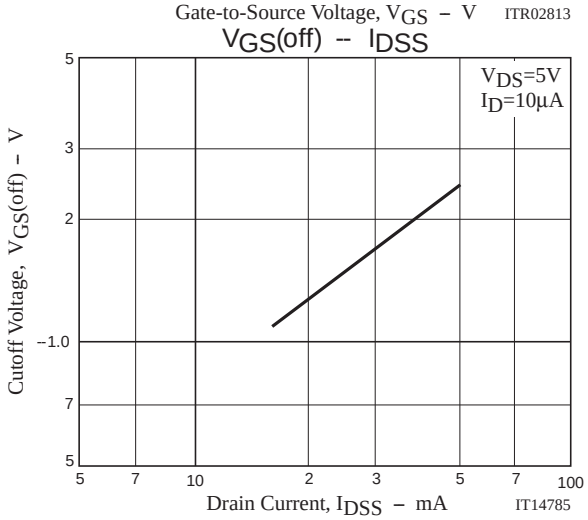
Device	Package	Shipping	memo
MCH3914-7-TL-H	MCPH3	3,000pcs./reel	Pb Free and Halogen Free
MCH3914-8-TL-H	MCPH3	3,000pcs./reel	

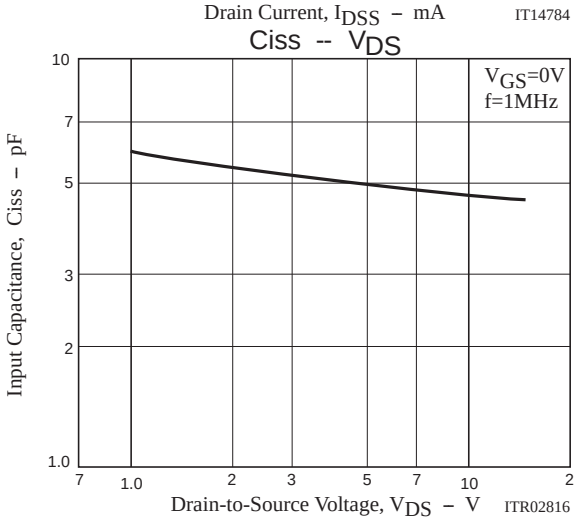


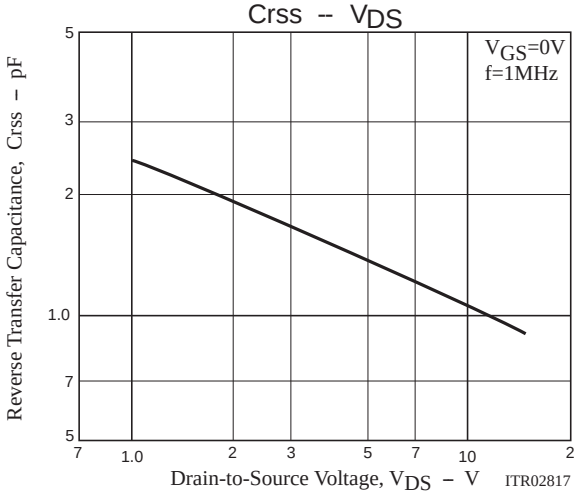


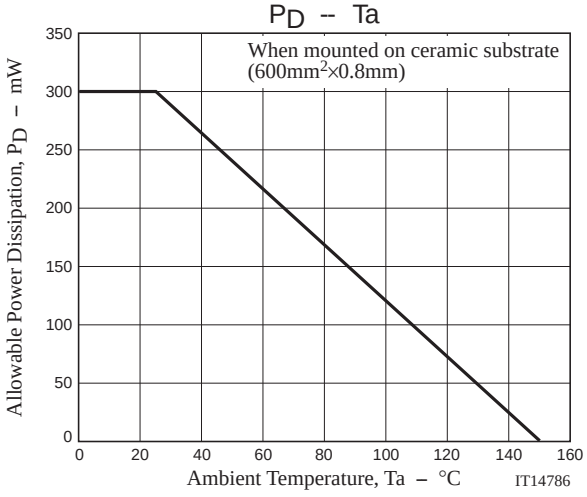

ID -- VGS
VDS=5V
IDSS=25mA
Ta=−25°C
25°C
75°C
Drain Current, ID – mA
Gate-to-Source Voltage, VGS – V
ITR02813


| yfs | -- IDSS
VDS=5V
f=1kHz
| yfs | (VGS=0V)
| yfs | (ID=10mA)
Forward Transfer Admittance, | yfs | – mS
Drain Current, IDSS – mA
IT14784


VGS(off) -- IDSS
VDS=5V
ID=10μA
Cutoff Voltage, VGS(off) – V
Drain Current, IDSS – mA
IT14785


Ciss -- VDS
VGS=0V
f=1MHz
Input Capacitance, Ciss – pF
Drain-to-Source Voltage, VDS – V
ITR02816


Crss -- VDS
VGS=0V
f=1MHz
Reverse Transfer Capacitance, Crss – pF
Drain-to-Source Voltage, VDS – V
ITR02817


PD -- Ta
When mounted on ceramic substrate
(600mm2×0.8mm)
Allowable Power Dissipation, PD – mW
Ambient Temperature, Ta – °C
IT14786

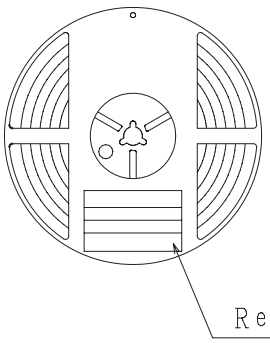
Taping Specification

MCH3914-7-TL-H, MCH3914-8-TL-H

1. Packing Format

Package Name	Carrier Tape Type	Maximun 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

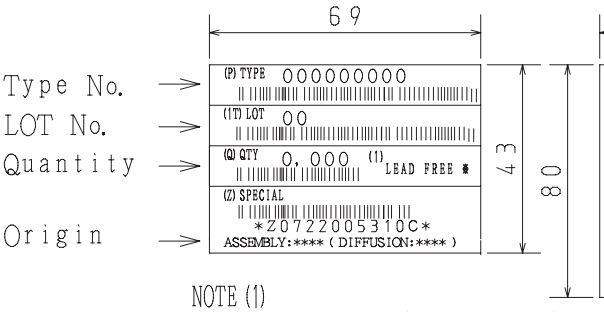
Packing method



Reel label

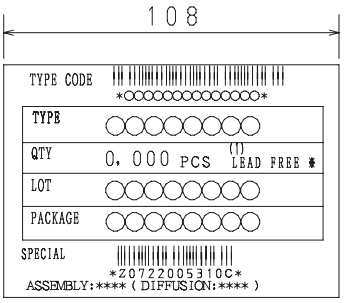
Reel label, Inner box label

(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.



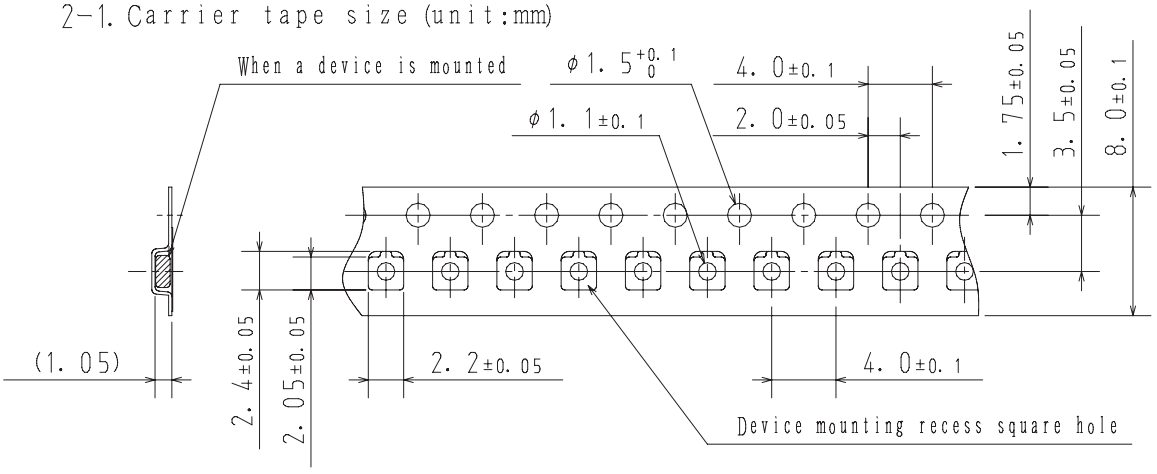
NOTE (1)

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

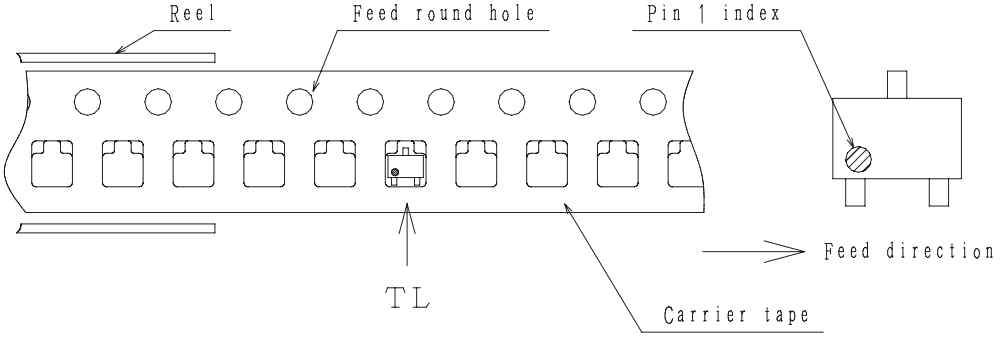
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



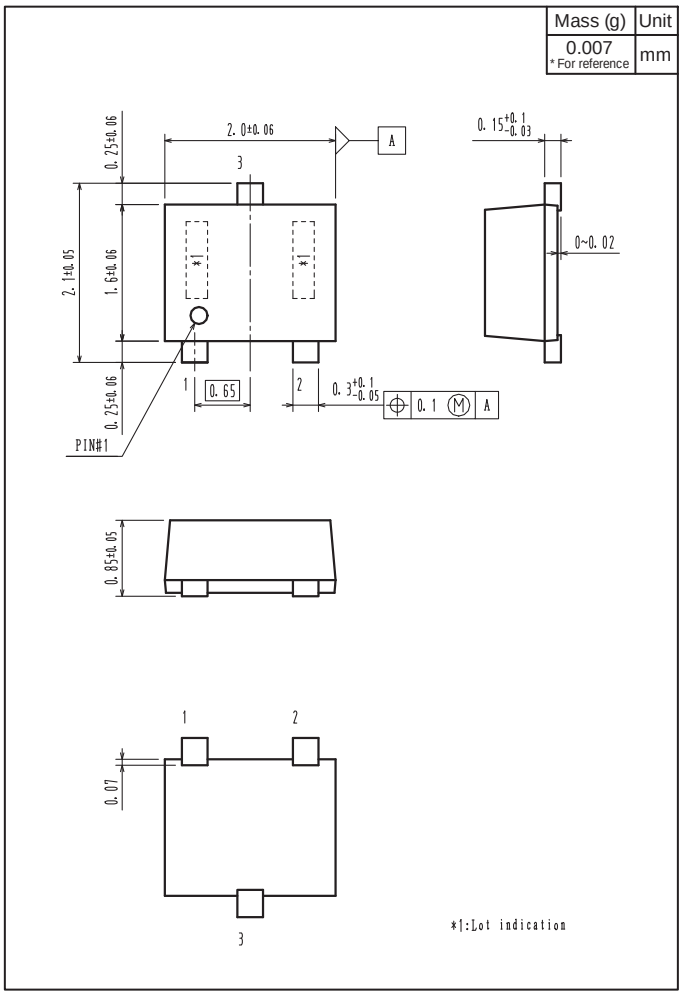
2-2. Device placement direction



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

Outline Drawing

MCH3914-7-TL-H, MCH3914-8-TL-H



Land Pattern Example