



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

N-Channel Silicon MOSFET

5HN01M — General-Purpose Switching Device Applications

Features

- Low ON-resistance
- Ultrahigh-speed switching
- 4V drive

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DS}		50	V
Gate-to-Source Voltage	V_{GS}		± 20	V
Drain Current (DC)	I_D		0.1	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu s$, duty cycle $\leq 1\%$	0.4	A
Allowable Power Dissipation	P_D		0.15	W
Channel Temperature	T_{ch}		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

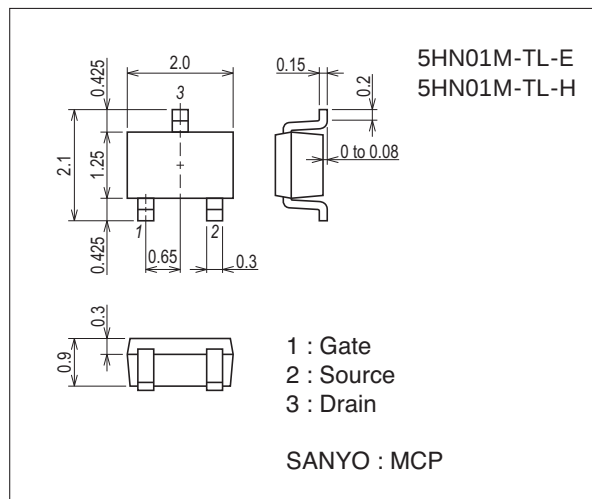
This product is designed to "ESD immunity < 200V*", so please take care when handling.

* Machine Model

Package Dimensions

unit : mm (typ)

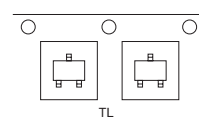
7023A-010



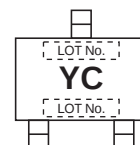
Product & Package Information

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

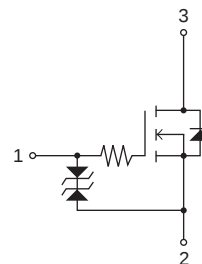
Packing Type: TL



Marking



Electrical Connection

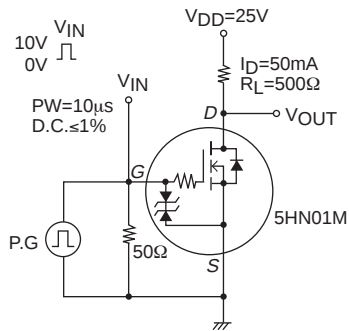


5HN01M

Electrical Characteristics at Ta=25°C

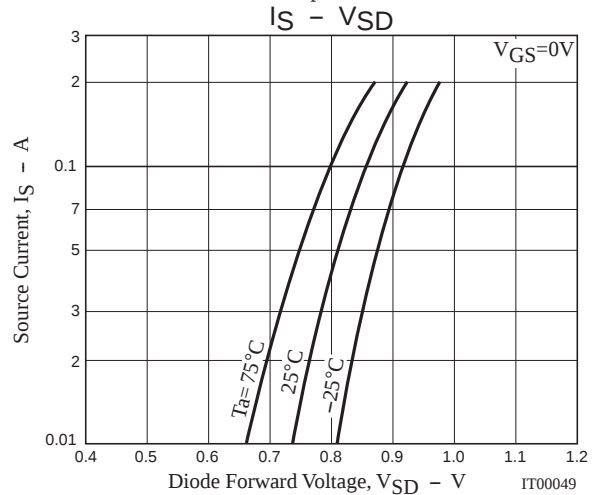
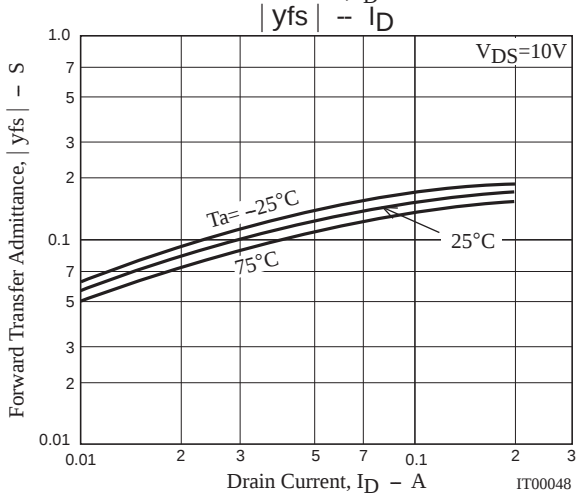
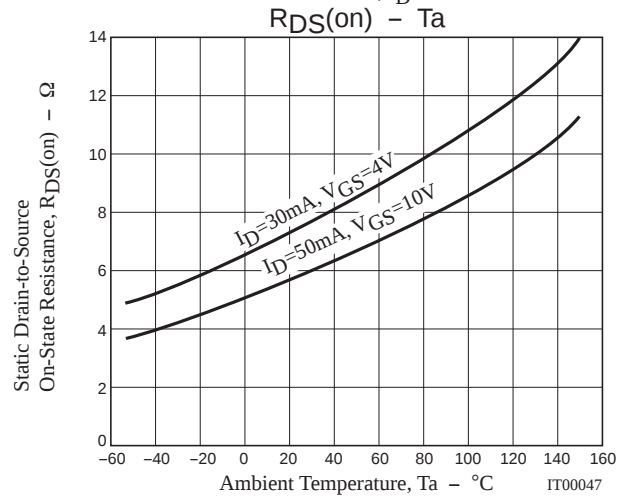
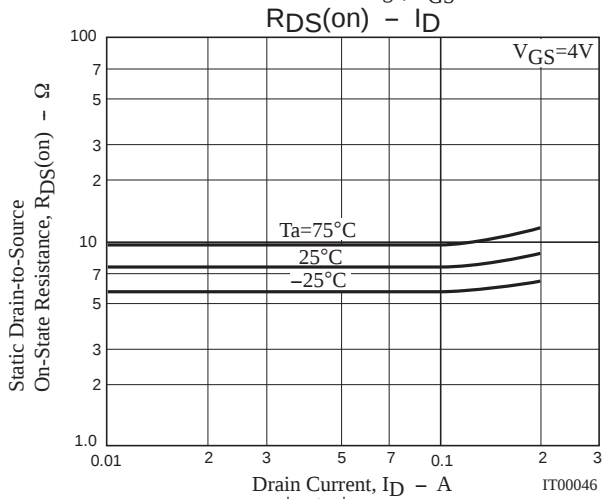
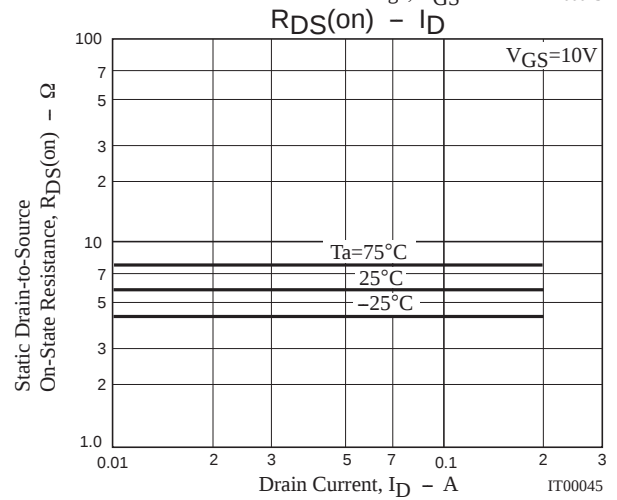
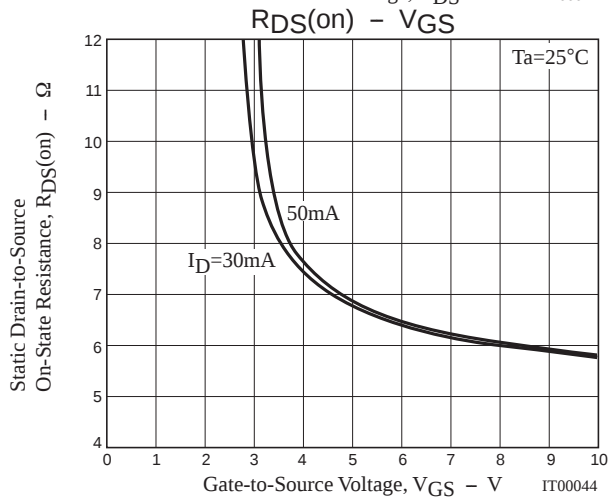
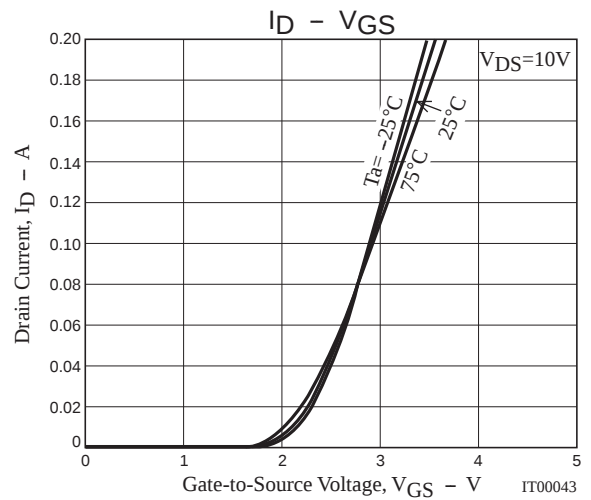
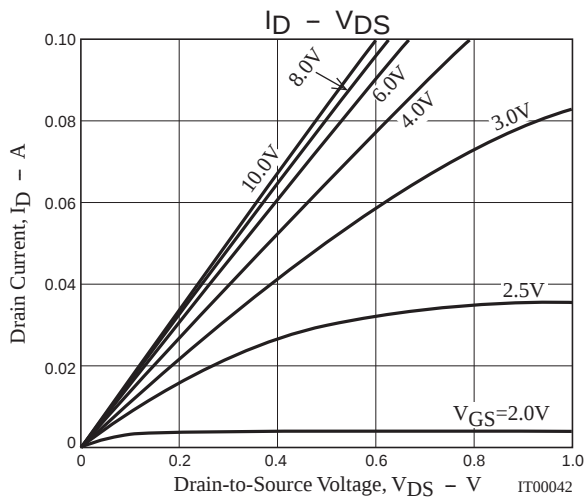
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0V$	50			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=50V, V_{GS}=0V$			1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 16V, V_{DS}=0V$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=100\mu A$	1		2.4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V, I_D=50mA$	85	120		mS
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=50mA, V_{GS}=10V$		5.8	7.5	Ω
	$R_{DS(on)2}$	$I_D=30mA, V_{GS}=4V$		7.5	10.5	Ω
Input Capacitance	C_{iss}	$V_{DS}=10V, f=1MHz$		6.2		pF
Output Capacitance	C_{oss}			4.4		pF
Reverse Transfer Capacitance	C_{rss}			1.5		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		10		ns
Rise Time	t_r			11		ns
Turn-OFF Delay Time	$t_{d(off)}$			105		ns
Fall Time	t_f			75		ns
Total Gate Charge	Q_g	$V_{DS}=10V, V_{GS}=10V, I_D=100mA$		1.40		nC
Gate-to-Source Charge	Q_{gs}			0.21		nC
Gate-to-Drain "Miller" Charge	Q_{gd}			0.34		nC
Diode Forward Voltage	V_{SD}	$I_S=100mA, V_{GS}=0V$		0.85	1.2	V

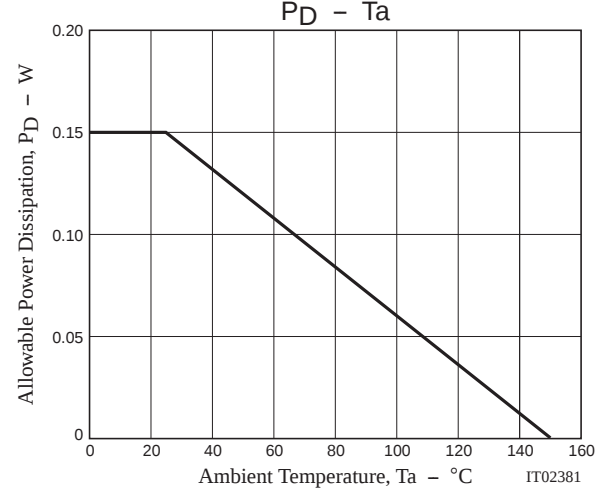
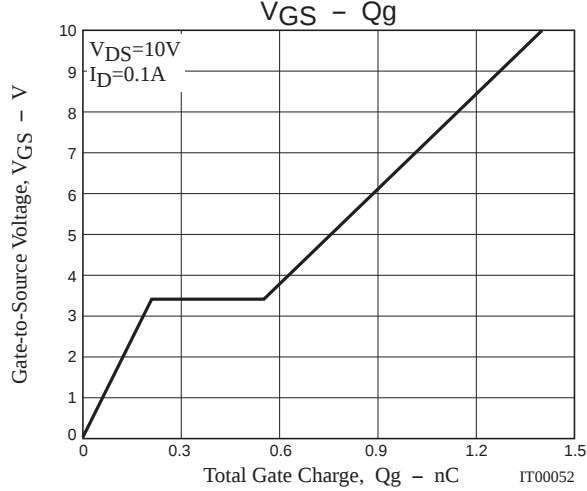
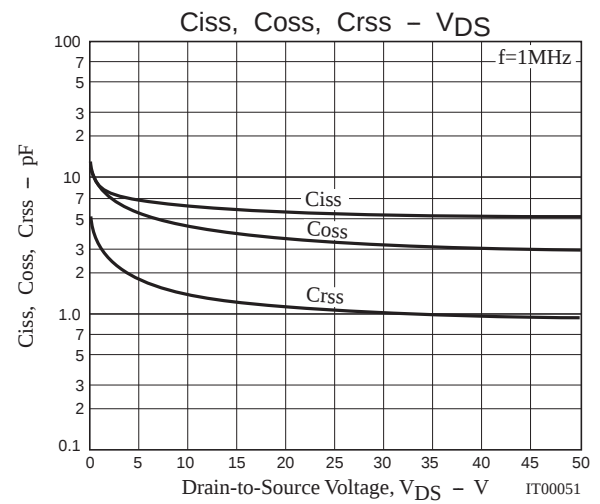
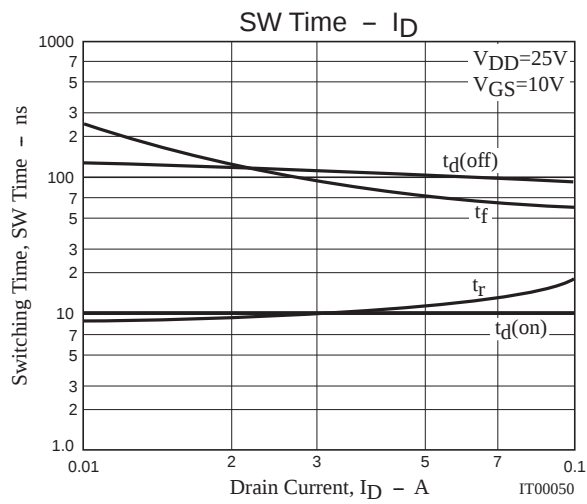
Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
5HN01M-TL-E	MCP	3,000pcs./reel	Pb Free
5HN01M-TL-H	MCP	3,000pcs./reel	Pb Free and Halogen Free





Embossed Taping Specification

5HN01M-TL-E, 5HN01M-TL-H

1. Packing Format

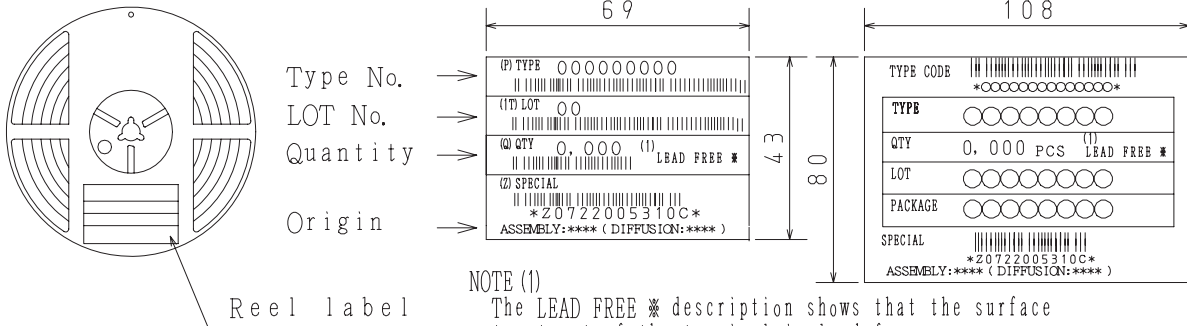
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
MCP	MCP	3,000	15,000	90,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

Reel label, Inner box label
(unit:mm)

Outer box label

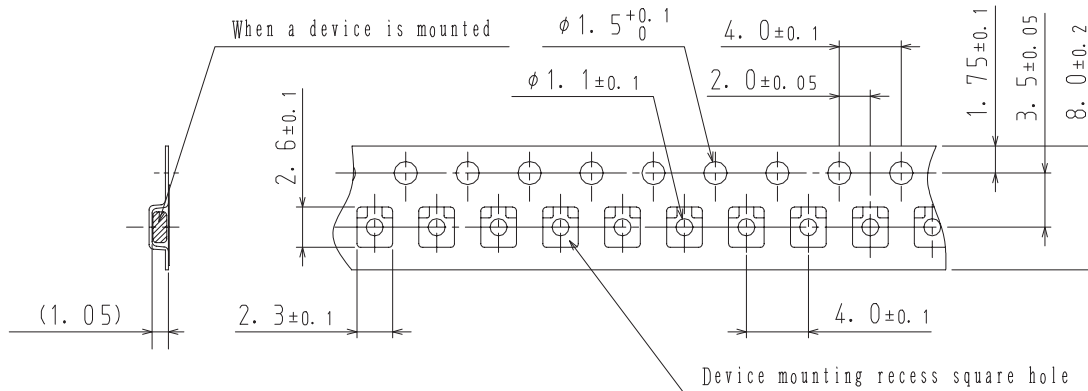
It is a label at the time of factory shipments.
The form of a label may change in physical distribution process.

Packing method

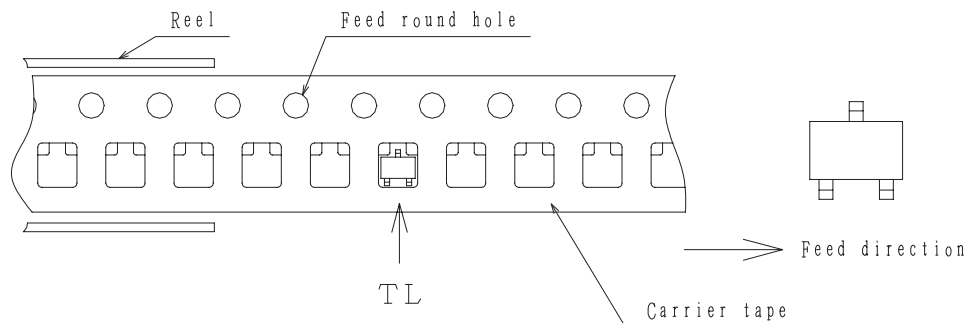


2. Taping configuration

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



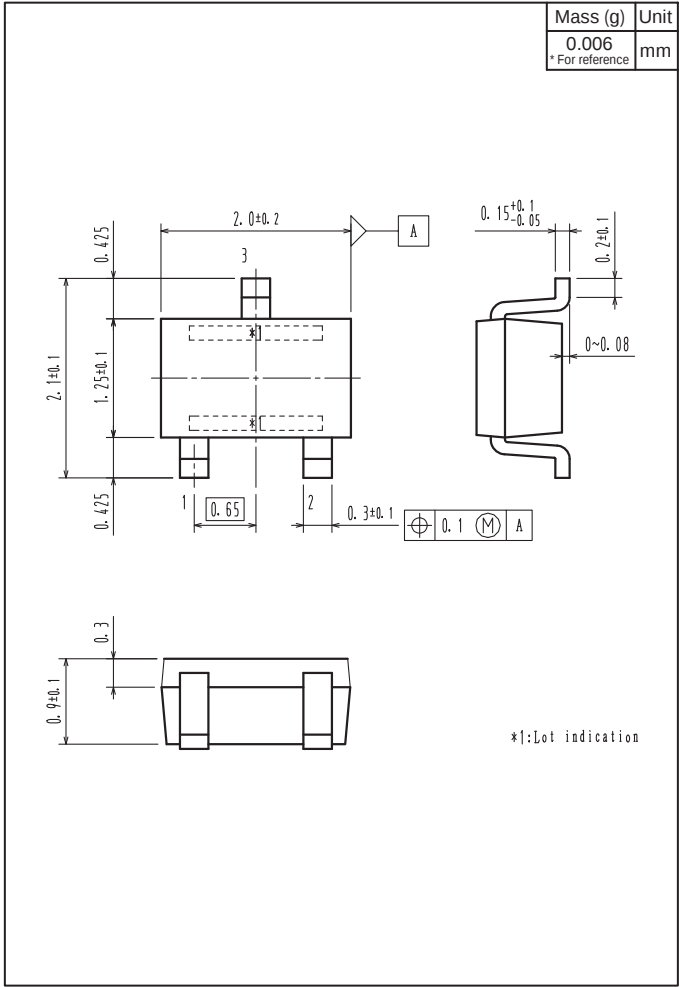
2-2. Device placement direction



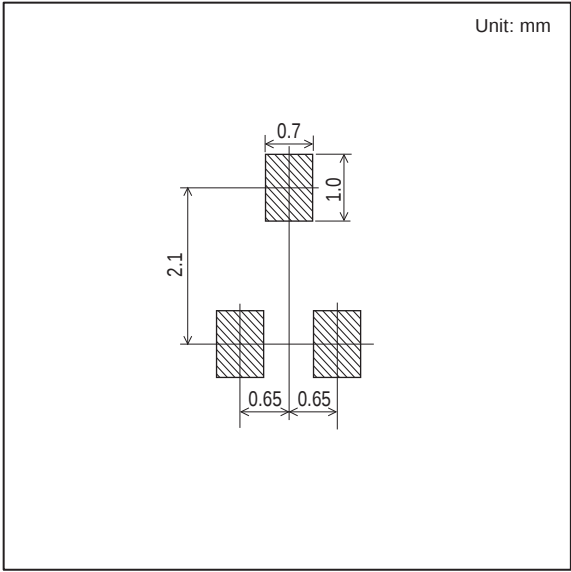
Those with oen electrode terminal on the feed hole side.....TL

Outline Drawing

5HN01M-TL-E, 5HN01M-TL-H



Land Pattern Example



Note on usage : Since the 5HN01M is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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