



# ECH8671 — P-Channel Silicon MOSFET

## General-Purpose Switching Device Applications

### Features

- 1.8V drive
- Composite type, facilitating high-density mounting
- Halogen free compliance

### Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	VDSS		-12	V
Gate-to-Source Voltage	VGSS		±10	V
Drain Current (DC)	ID		-3.5	A
Drain Current (Pulse)	IDP	PW≤10μs, duty cycle≤1%	-30	A
Allowable Power Dissipation	PD	When mounted on ceramic substrate (1200mm <sup>2</sup> ×0.8mm) 1unit	1.3	W
Total Power Dissipation	PT	When mounted on ceramic substrate (1200mm <sup>2</sup> ×0.8mm)	1.5	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C

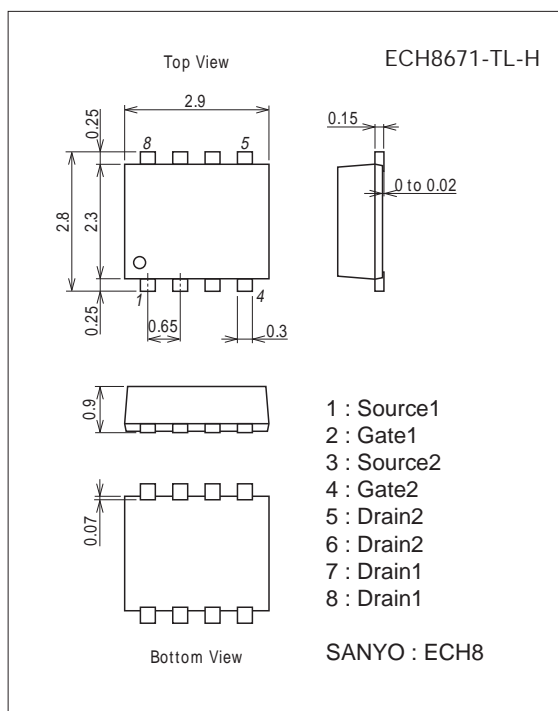
This product is designed to "ESD immunity < 200V\*\*", so please take care when handling.

\* Machine Model

### Package Dimensions

unit : mm (typ)

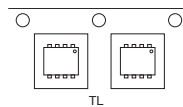
7011A-001



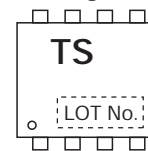
### Product & Package Information

- Package : ECH8
- JEITA, JEDEC : -
- Minimum Packing Quantity : 3,000 pcs./reel

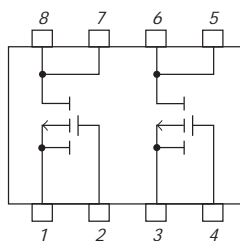
### Packing Type : TL



### Marking



### Electrical Connection

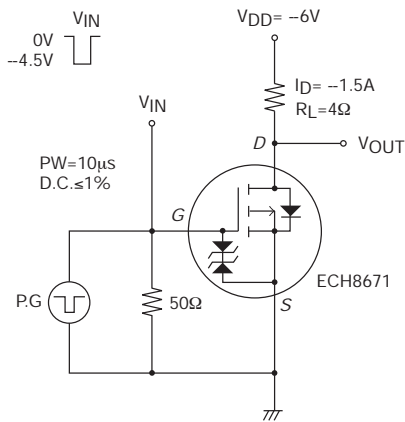


# ECH8671

## Electrical Characteristics at Ta=25°C

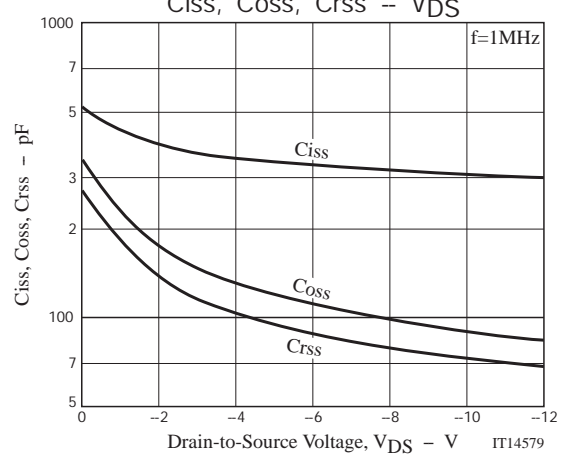
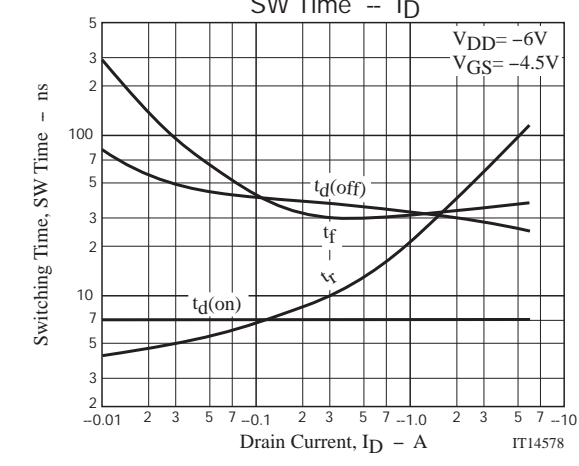
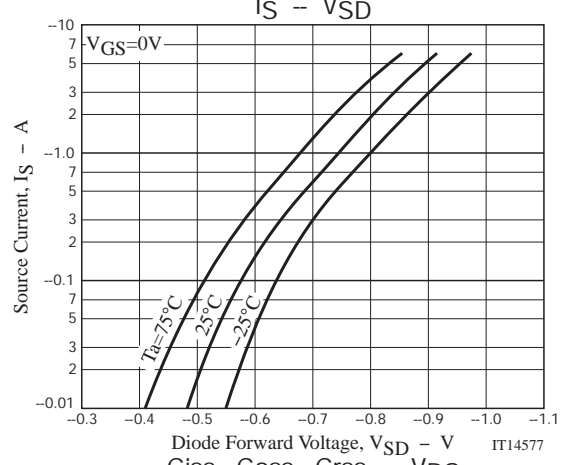
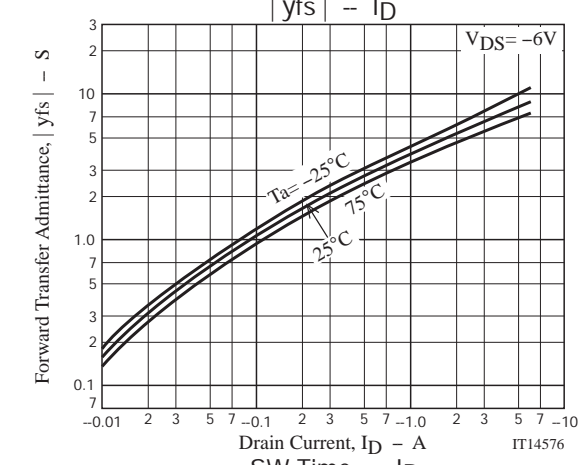
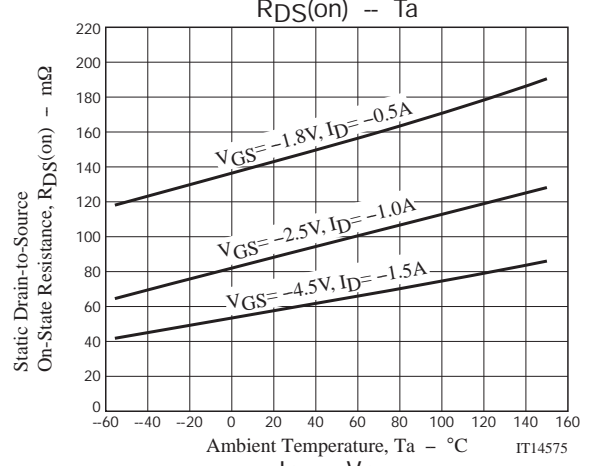
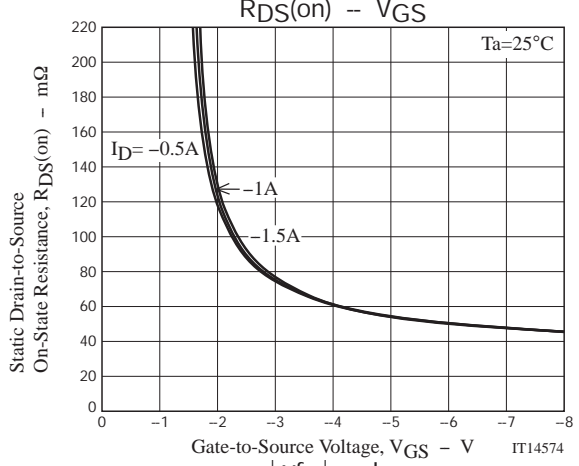
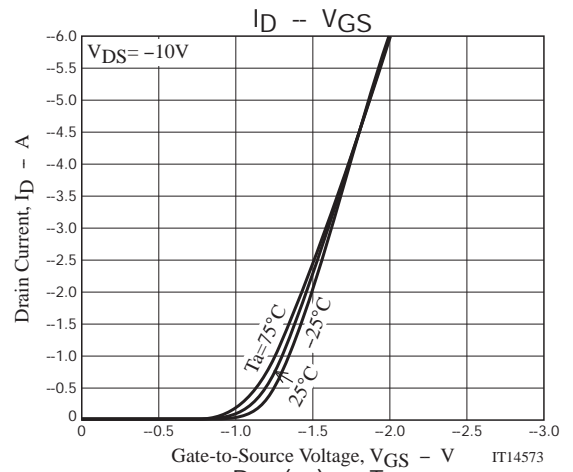
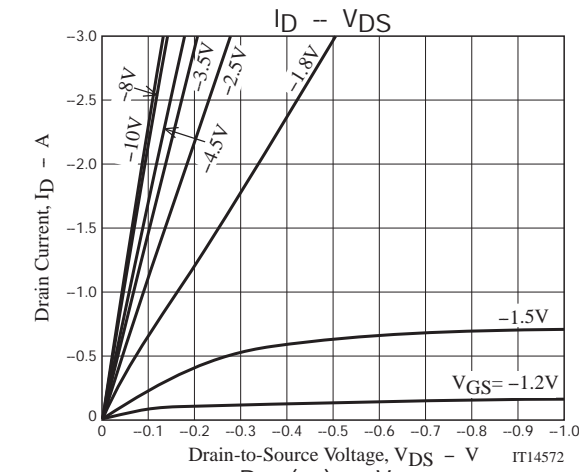
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1\text{mA}, V_{GS} = 0\text{V}$	-12			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -12\text{V}, V_{GS} = 0\text{V}$			-10	$\mu\text{A}$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 8\text{V}, V_{DS} = 0\text{V}$			$\pm 10$	$\mu\text{A}$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -6\text{V}, I_D = -1\text{mA}$	-0.4		-1.3	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -6\text{V}, I_D = -1.5\text{A}$	2.7	4.6		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = -1.5\text{A}, V_{GS} = -4.5\text{V}$		59	77	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D = -1\text{A}, V_{GS} = -2.5\text{V}$		90	126	$\text{m}\Omega$
	$R_{DS(on)3}$	$I_D = -0.5\text{A}, V_{GS} = -1.8\text{V}$		145	215	$\text{m}\Omega$
Input Capacitance	$C_{iss}$	$V_{DS} = -6\text{V}, f = 1\text{MHz}$		330		pF
Output Capacitance	$C_{oss}$			110		pF
Reverse Transfer Capacitance	$C_{rss}$			88		pF
Turn-ON Delay Time	$t_{d(on)}$		See specified Test Circuit.		7.1	
Rise Time	$t_r$			30		ns
Turn-OFF Delay Time	$t_{d(off)}$			31		ns
Fall Time	$t_f$			32		ns
Total Gate Charge	$Q_g$	$V_{DS} = -6\text{V}, V_{GS} = -4.5\text{V}, I_D = -3.5\text{A}$			3.9	
Gate-to-Source Charge	$Q_{gs}$			0.6		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$			1.1		nC
Diode Forward Voltage	$V_{SD}$	$I_S = -3.5\text{A}, V_{GS} = 0\text{V}$		-0.85	-1.2	V

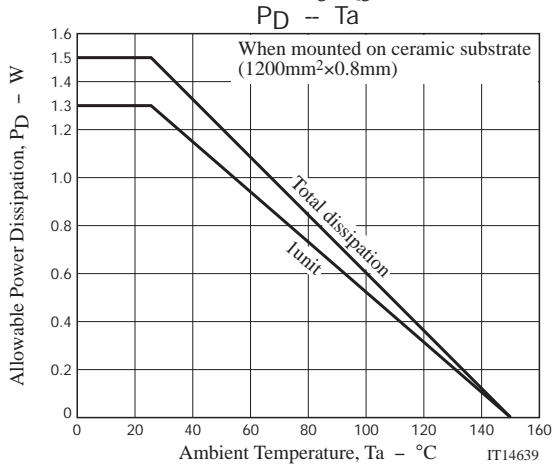
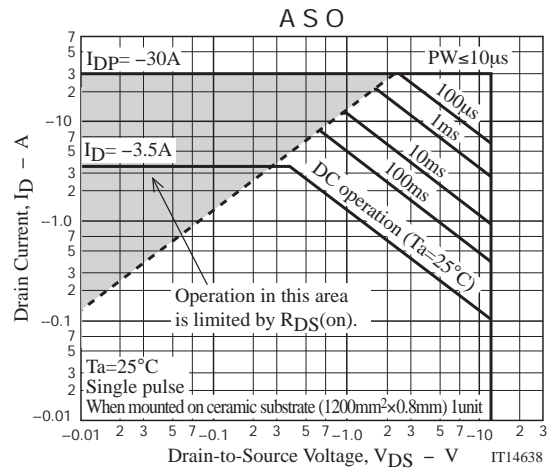
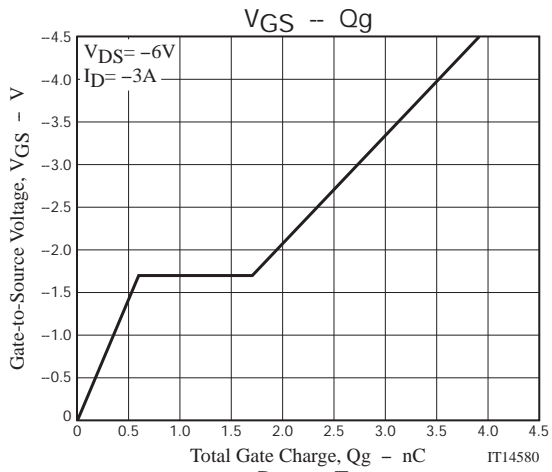
## Switching Time Test Circuit



## Ordering Information

Device	Package	Shipping	memo
ECH8671-TL-H	ECH8	3,000pcs./reel	Pb Free and Halogen Free





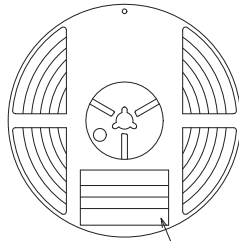
Embossed Taping Specification

ECH8671-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)
ECH8	CPH6	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

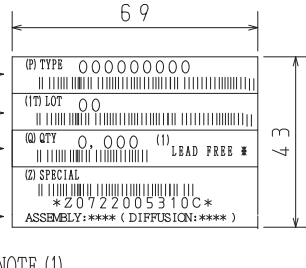
Packing method



Reel label

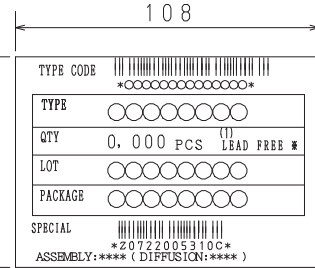
Type No.  
LOT No.  
Quantity  
Origin

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.



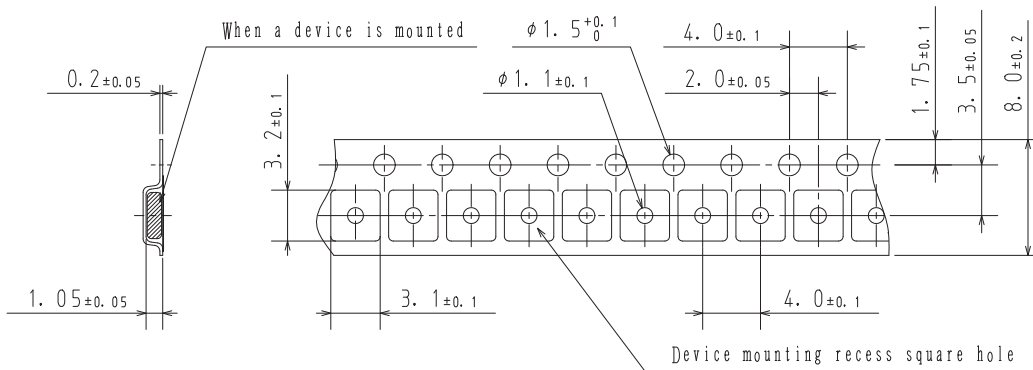
NOTE (1)

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

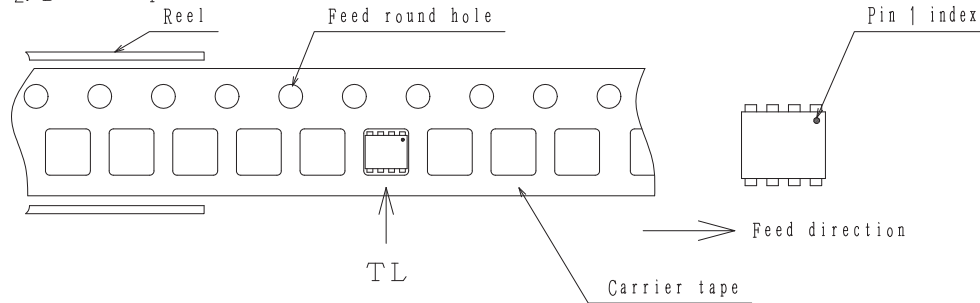
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



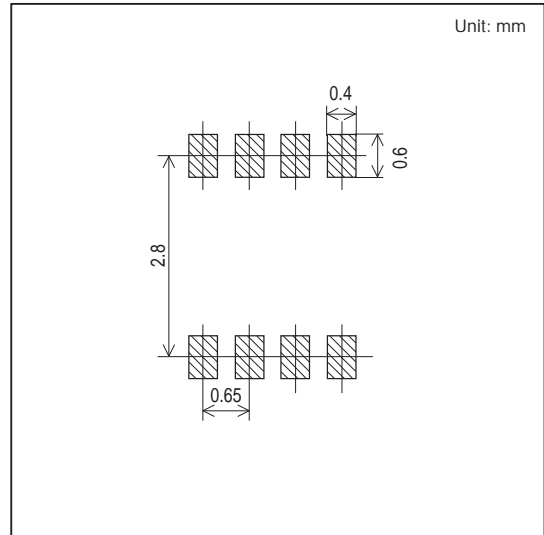
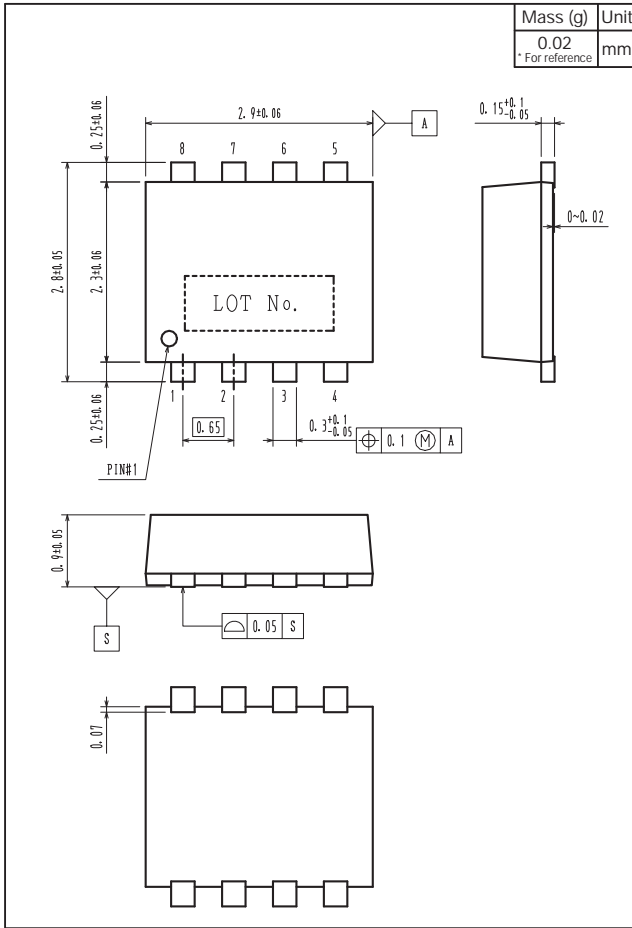
2-2. Device placement direction



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

Outline Drawing  
ECH8671-TL-H

Land Pattern Example



Note on usage : Since the ECH8671 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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