



# ECH8410 — General-Purpose Switching Device Applications

N-Channel Silicon MOSFET

## Features

- Low ON-resistance.
- 4V drive.
- Halogen free compliance.
- Protection diode in

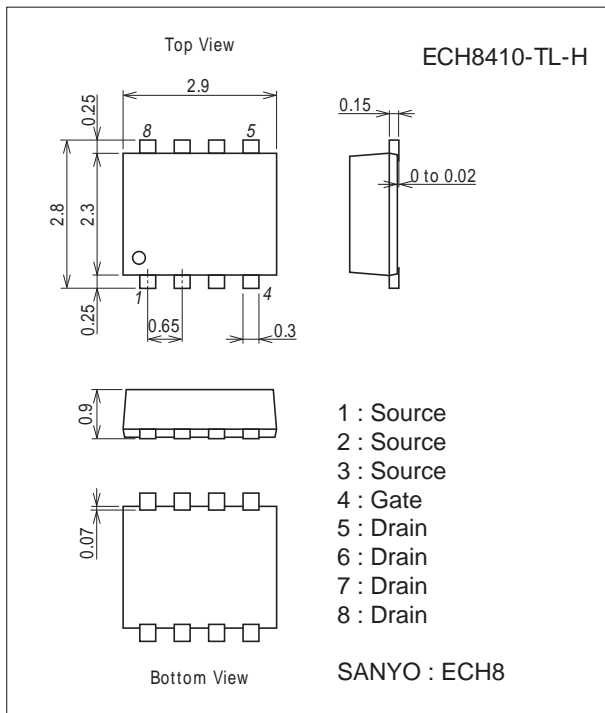
## Specifications

### Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		30	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±20	V
Drain Current (DC)	I <sub>D</sub>		12	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	60	A
Allowable Power Dissipation	P <sub>D</sub>	When mounted on ceramic substrate (900mm <sup>2</sup> ×0.8mm)	1.6	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

## Package Dimensions

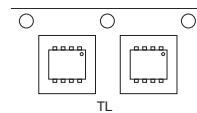
unit : mm (typ)  
7011A-002



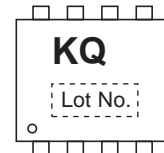
## Product & Package Information

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

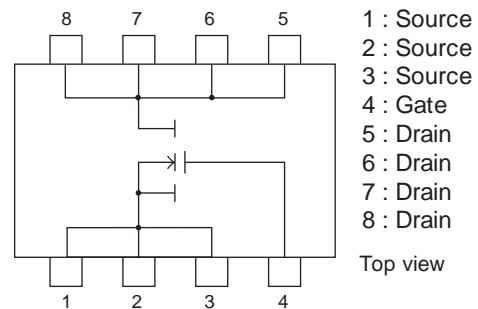
## Packing Type : TL



## Marking



## Electrical Connection

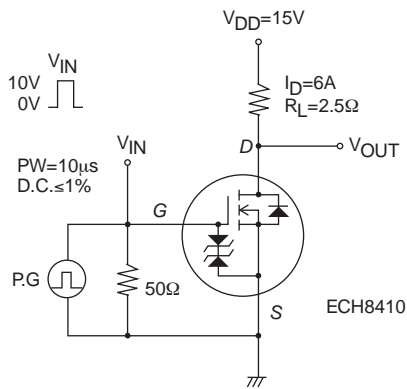


# ECH8410

## Electrical Characteristics at Ta=25°C

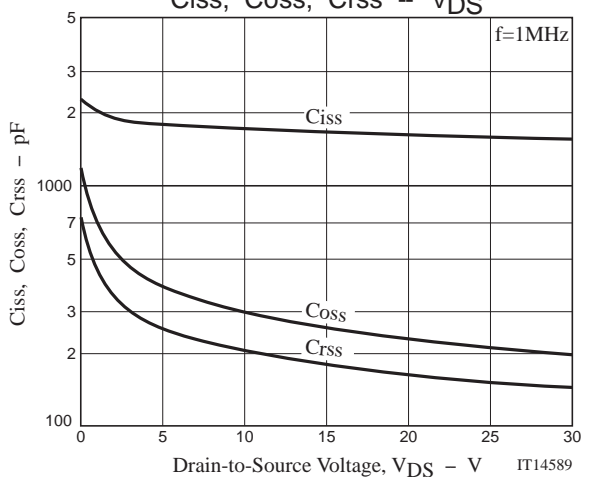
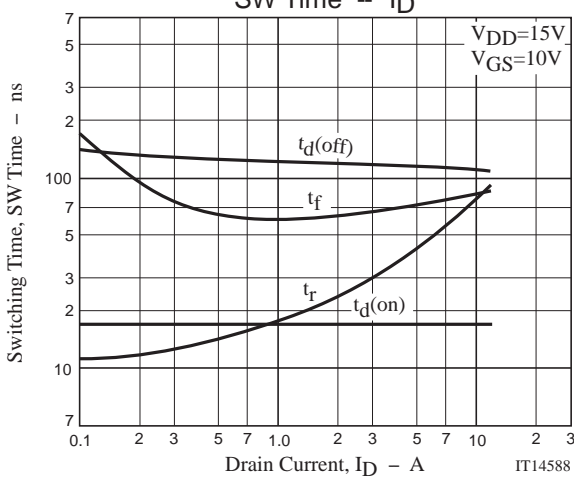
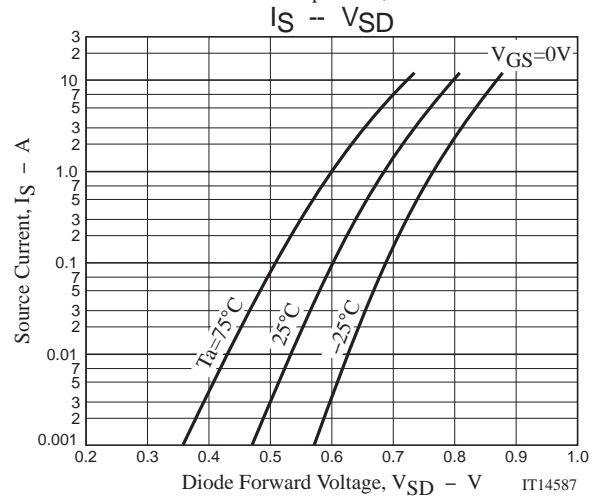
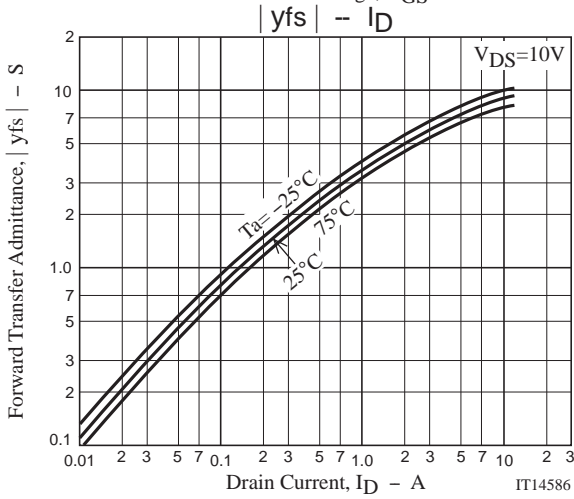
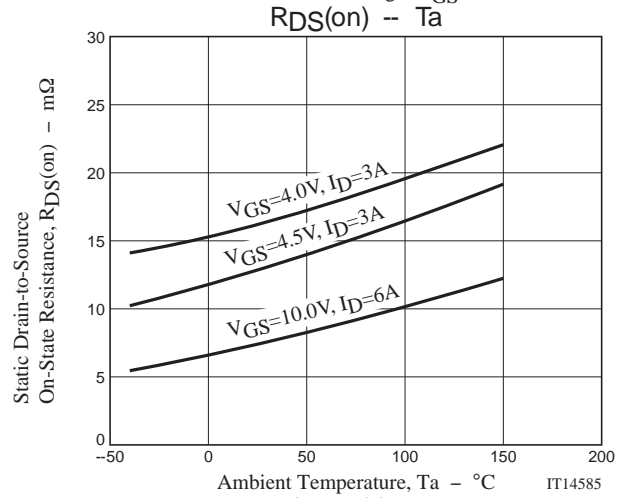
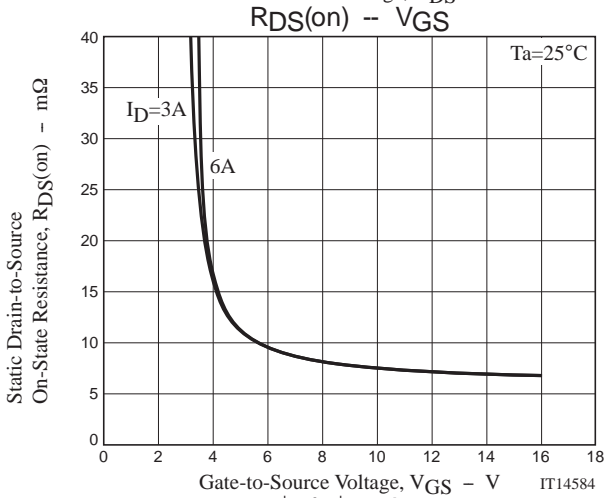
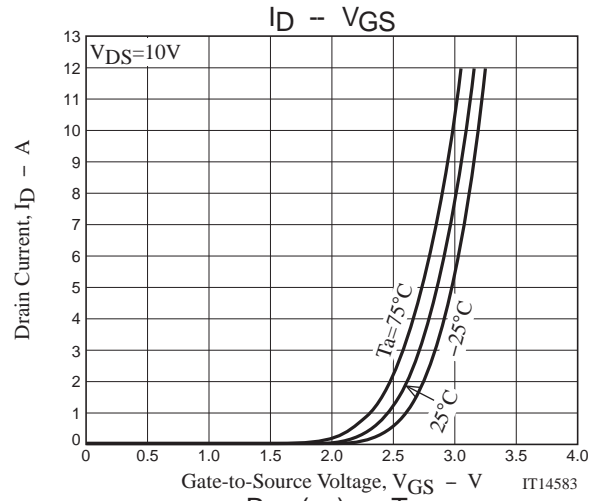
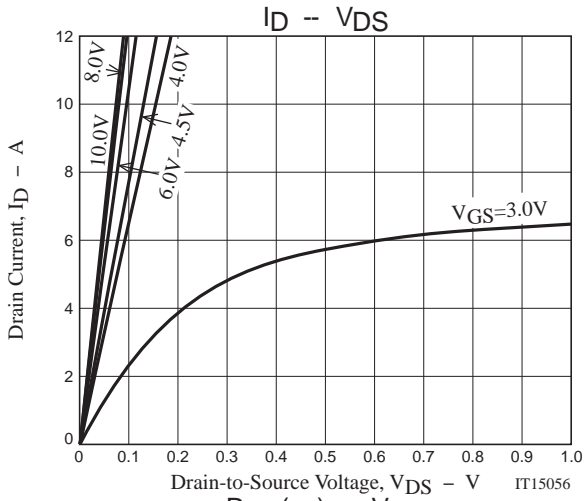
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V(BR)DSS	ID=1mA, VGS=0V	30			V
Zero-Gate Voltage Drain Current	IDSS	VDS=30V, VGS=0V			1	μA
Gate-to-Source Leakage Current	IGSS	VGS=±16V, VDS=0V			±10	μA
Cutoff Voltage	VGS(off)	VDS=10V, ID=1mA	1.2		2.6	V
Forward Transfer Admittance	yfs	VDS=10V, ID=6A		7.5		S
Static Drain-to-Source On-State Resistance	RDS(on)1	ID=6A, VGS=10V		7.5	10	mΩ
	RDS(on)2	ID=3A, VGS=4.5V		13	18.2	mΩ
	RDS(on)3	ID=3A, VGS=4V		15.5	22	mΩ
Input Capacitance	Ciss	VDS=10V, f=1MHz		1700		pF
Output Capacitance	Coss			300		pF
Reverse Transfer Capacitance	Crss			200		pF
Turn-ON Delay Time	td(on)		See specified Test Circuit.		17	
Rise Time	tr			50		ns
Turn-OFF Delay Time	td(off)			110		ns
Fall Time	tf			72		ns
Total Gate Charge	Qg	VDS=15V, VGS=10V, ID=12A			31	
Gate-to-Source Charge	Qgs			5.5		nC
Gate-to-Drain "Miller" Charge	Qgd			5.5		nC
Diode Forward Voltage	VSD	IS=12A, VGS=0V		0.8	1.2	V

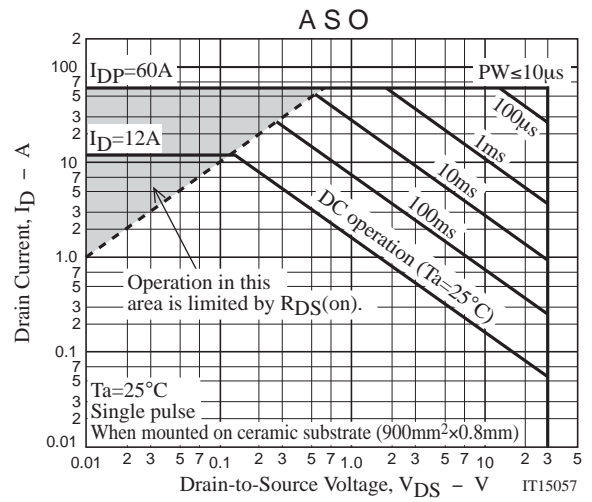
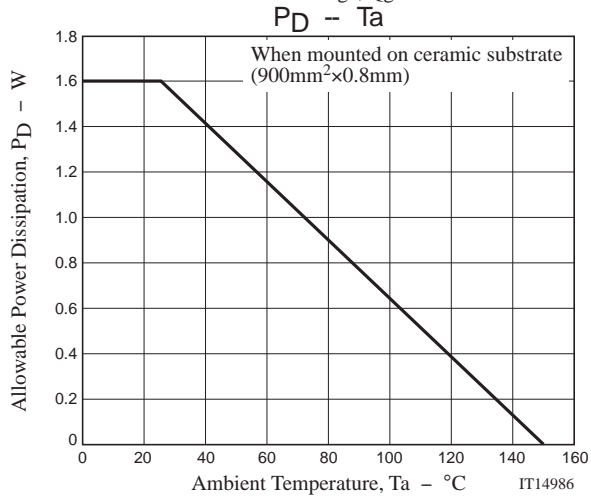
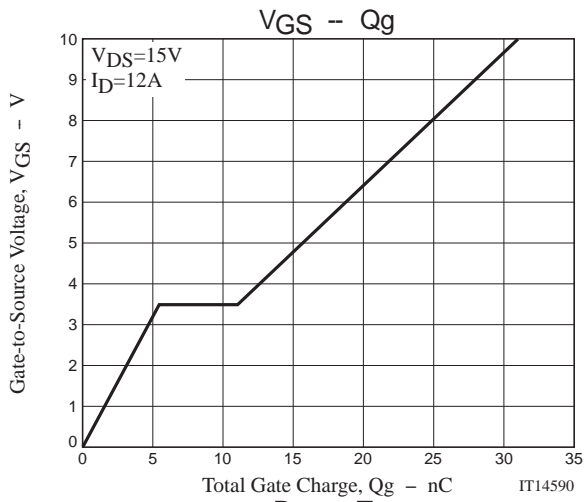
## Switching Time Test Circuit



## Ordering Information

Device	Package	Shipping	memo
ECH8410-TL-H	ECH8	3,000pcs./reel	Pb Free and Halogen Free





# ECH8410

## Embossed Taping Specification

ECH8410-TL-H

### 1. Packing Format

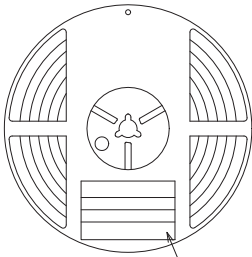
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
ECH8	CPH6	3,000	15,000	90,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

Reel label, Inner box label  
(unit :mm)

Outer box label

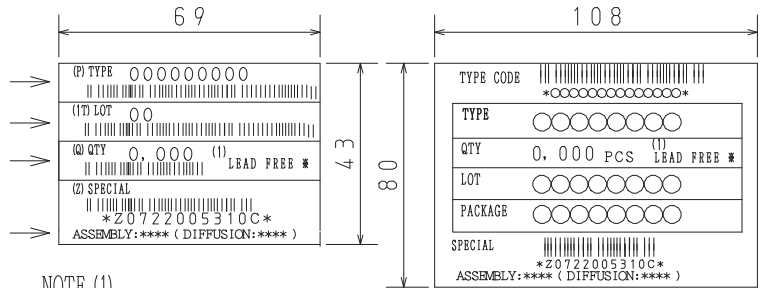
It is a label at the time of factory shipments.  
The form of a label may change in physical distribution process.

#### Packing method



Reel label

Type No.  
LOT No.  
Quantity  
Origin



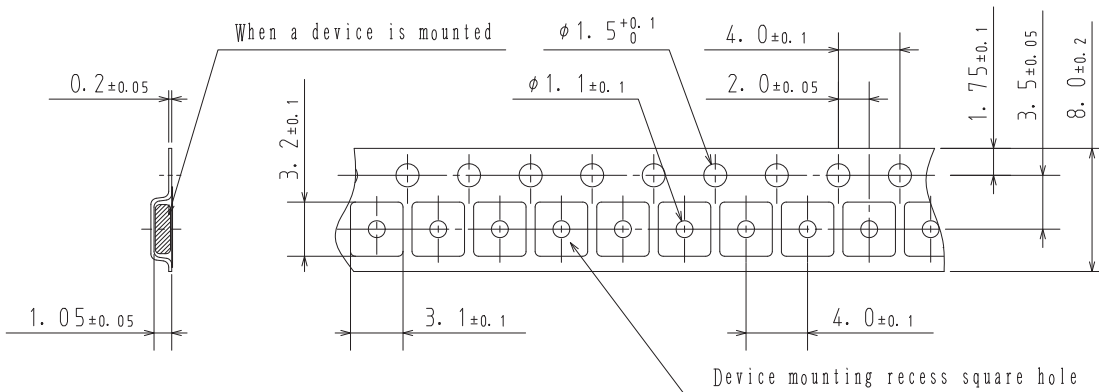
NOTE (1)

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

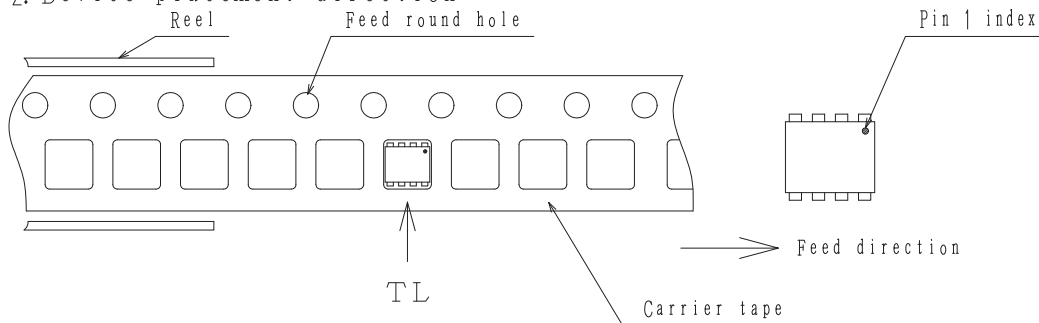
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

### 2. Taping configuration

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



#### 2-2. Device placement direction

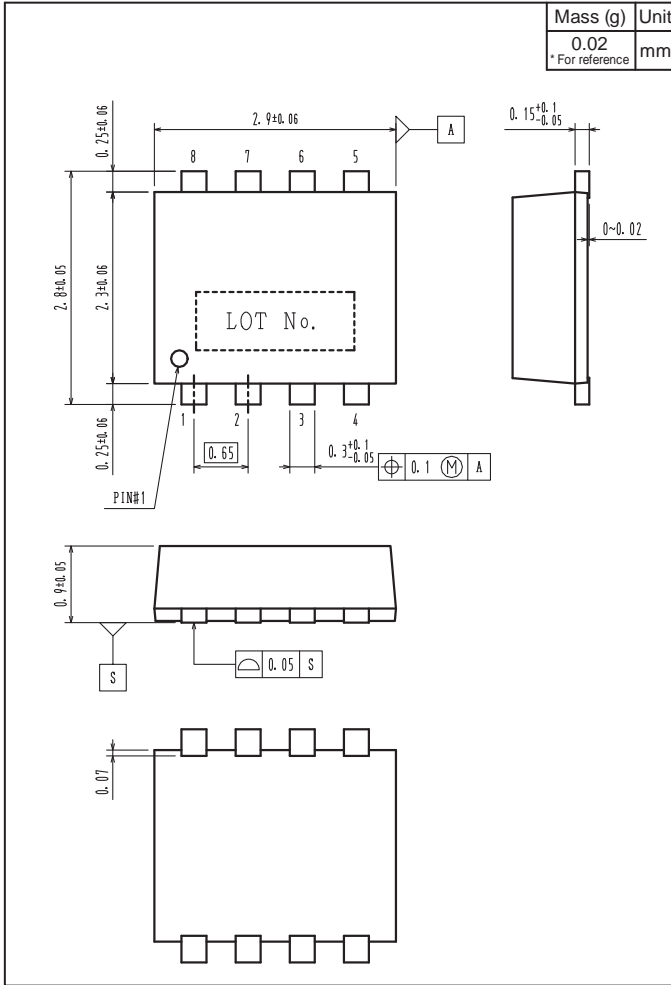


Those with pin 1 index on the feed hole side.....TL

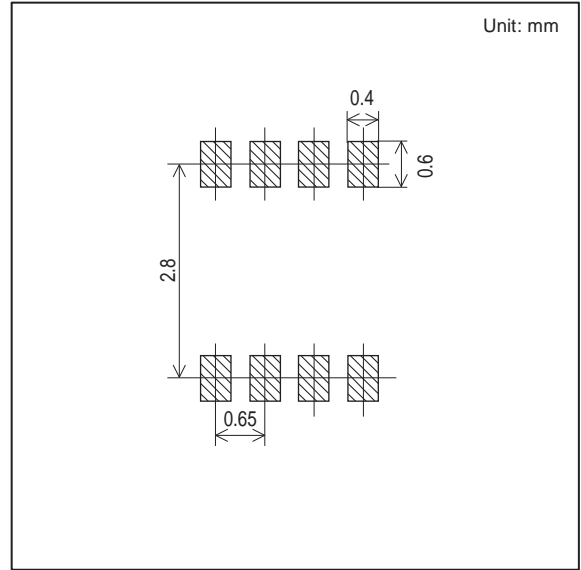
# ECH8410

## Outline Drawing

ECH8410-TL-H



## Land Pattern Example



Note on usage : Since the ECH8410 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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