



SANYO Semiconductors

# DATA SHEET

An ON Semiconductor Company

## ECH8663R — N-Channel Silicon MOSFET — General-Purpose Switching Device Applications

### Features

- Low ON-resistance
- 2.5V drive
- Common-drain type
- Protection diode in
- Built-in gate protection resistor
- Best suited for LiB charging and discharging switch
- Halogen free compliance

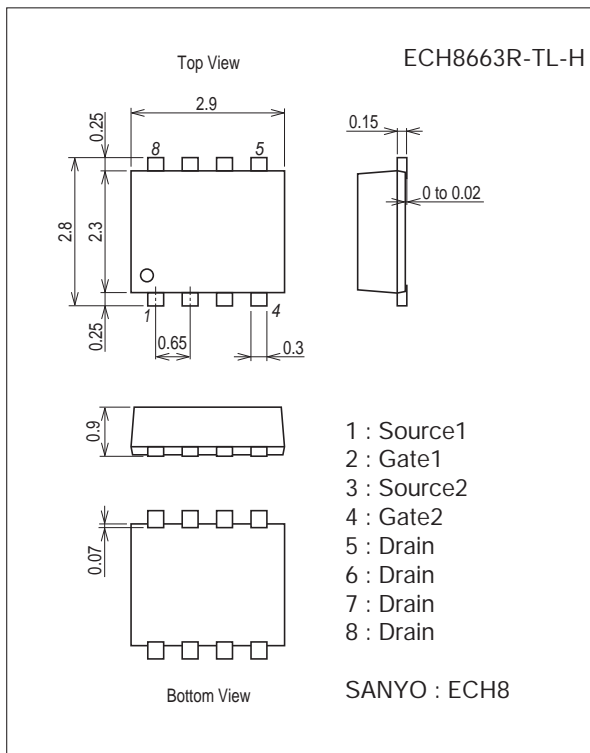
### Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	VDSS		30	V
Gate-to-Source Voltage	VGSS		±12	V
Drain Current (DC)	ID		8	A
Drain Current (Pulse)	IDP	PW≤10μs, duty cycle≤1%	60	A
Allowable Power Dissipation	PD	When mounted on ceramic substrate (900mm <sup>2</sup> ×0.8mm) 1unit	1.4	W
Total Power Dissipation	PT	When mounted on ceramic substrate (900mm <sup>2</sup> ×0.8mm)	1.5	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C

### Package Dimensions

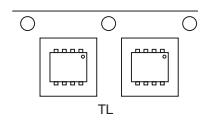
unit : mm (typ)  
7011A-003



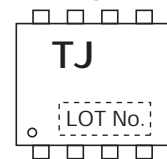
### Product & Package Information

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

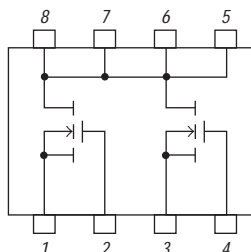
### Packing Type : TL



### Marking



### Electrical Connection

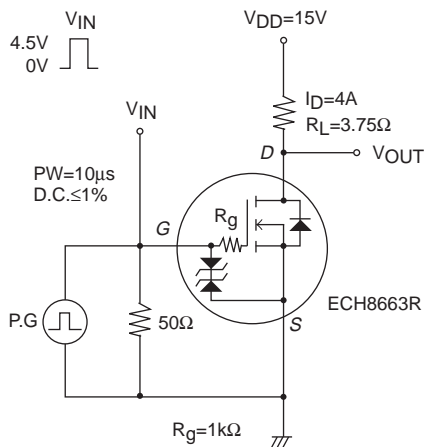


# ECH8663R

## Electrical Characteristics at Ta=25°C

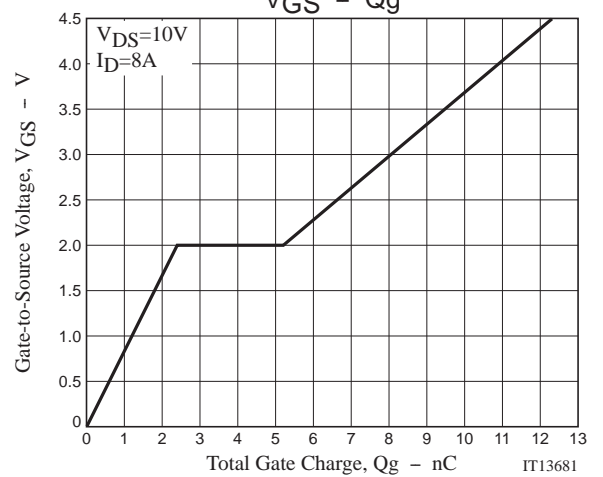
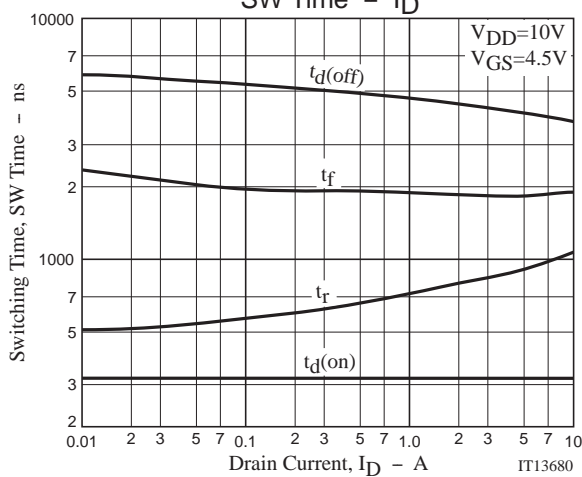
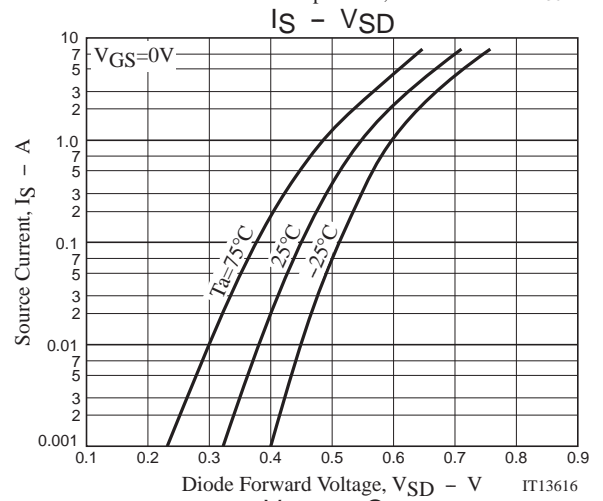
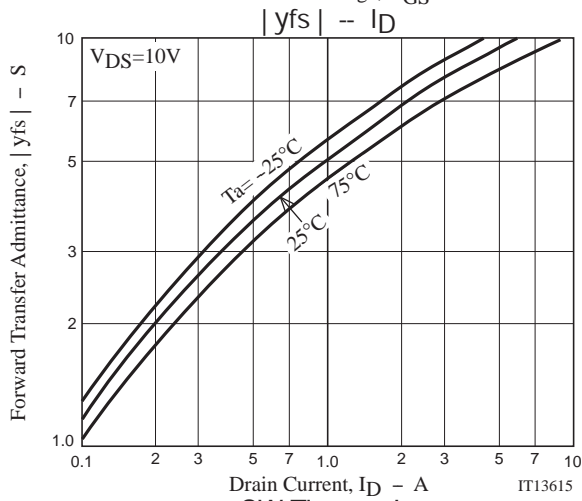
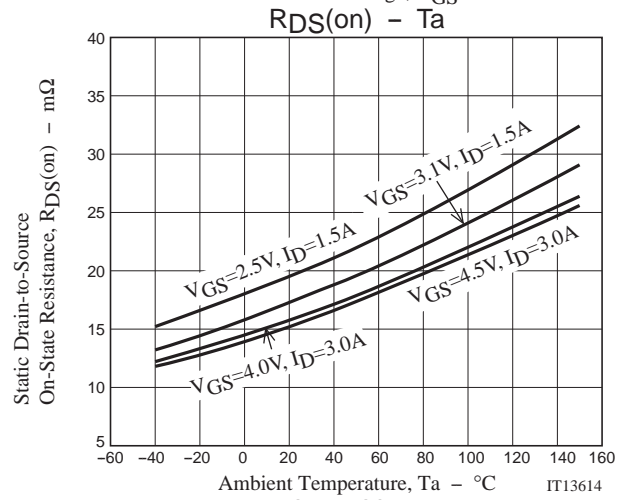
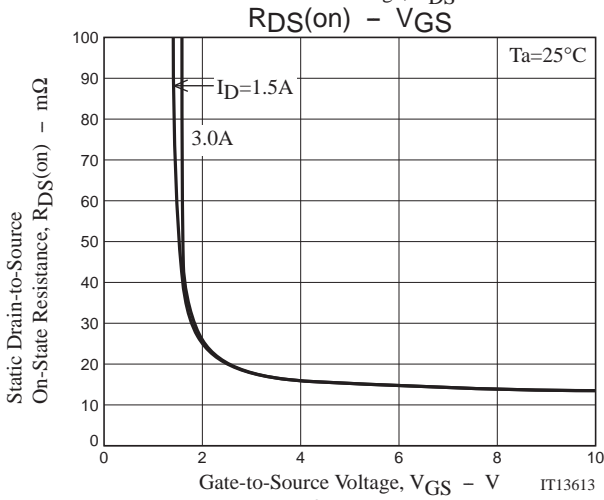
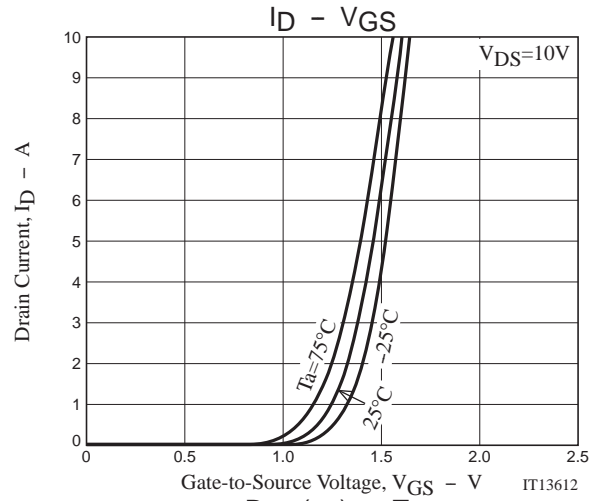
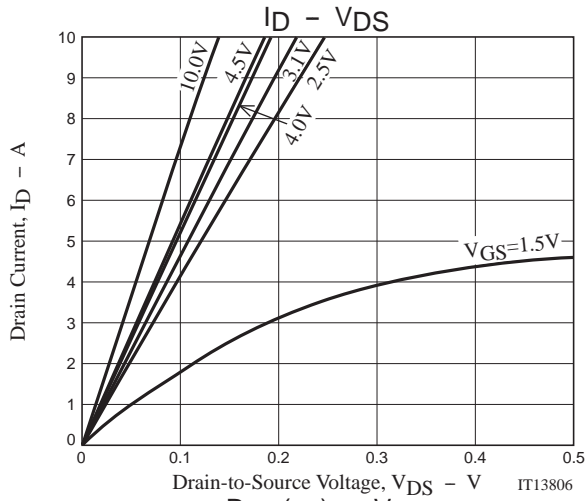
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V(BR)DSS	ID=1mA, VGS=0V	30			V
Zero-Gate Voltage Drain Current	IDSS	VDS=30V, VGS=0V			1	μA
Gate-to-Source Leakage Current	IGSS	VGS=±8V, VDS=0V			±10	μA
Cutoff Voltage	VGS(off)	VDS=10V, ID=1mA	0.5		1.3	V
Forward Transfer Admittance	yfs	VDS=10V, ID=4A	5	8.5		S
Static Drain-to-Source On-State Resistance	RDS(on)1	ID=4A, VGS=4.5V	10.5	15.5	20.5	mΩ
	RDS(on)2	ID=4A, VGS=4.0V	11	16	21	mΩ
	RDS(on)3	ID=2A, VGS=3.1V	12	17.5	23	mΩ
	RDS(on)4	ID=2A, VGS=2.5V	12	20	28	mΩ
Turn-ON Delay Time	td(on)	See specified Test Circuit.		320		ns
Rise Time	tr			850		ns
Turn-OFF Delay Time	td(off)			4200		ns
Fall Time	tf			1800		ns
Total Gate Charge	Qg	VDS=10V, VGS=4.5V, ID=8A		12.3		nC
Gate-to-Source Charge	Qgs			2.4		nC
Gate-to-Drain "Miller" Charge	Qgd			2.8		nC
Diode Forward Voltage	VSD	IS=8A, VGS=0V		0.75	1.2	V

## Switching Time Test Circuit

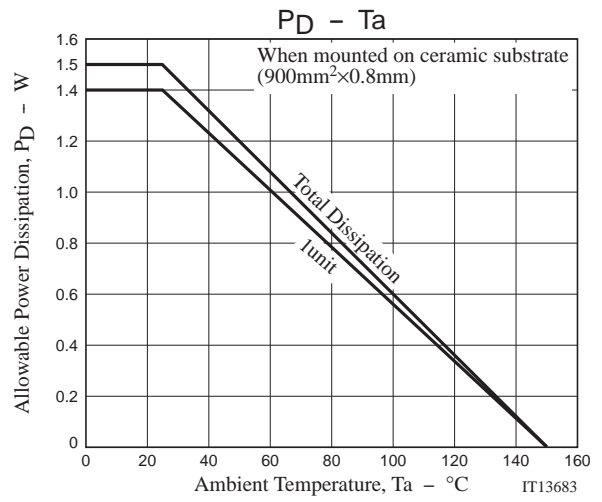
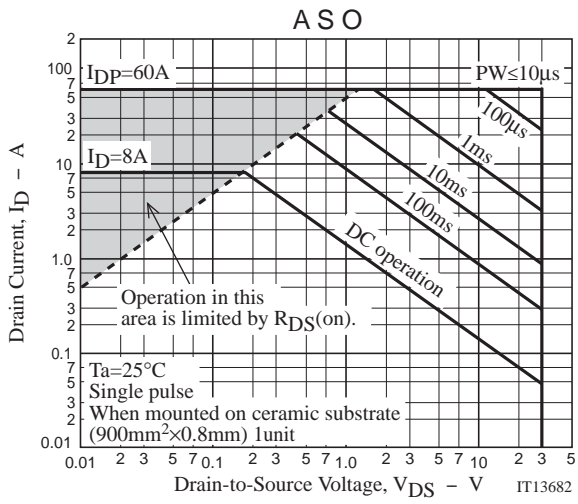


## Ordering Information

Device	Package	Shipping	memo
ECH8663R-TL-H	ECH8	3,000pcs./reel	Pb Free and Halogen Free



# ECH8663R



# ECH8663R

## Embossed Taping Specification

ECH8663R-TL-H

### 1. Packing Format

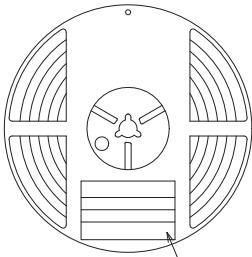
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
ECH8	CPH6	3,000	15,000	90,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

Reel label, Inner box label  
(unit :mm)

Outer box label

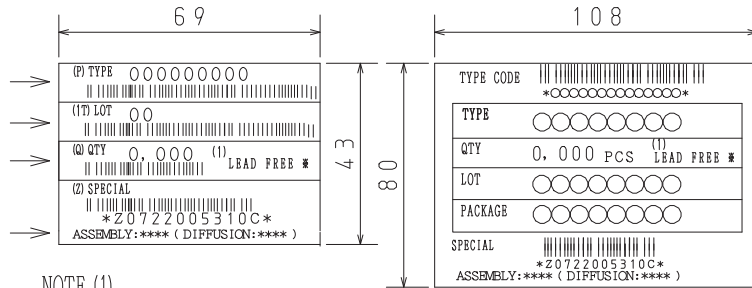
It is a label at the time of factory shipments.  
The form of a label may change in physical distribution process.

#### Packing method



Reel label

Type No.  
LOT No.  
Quantity  
Origin



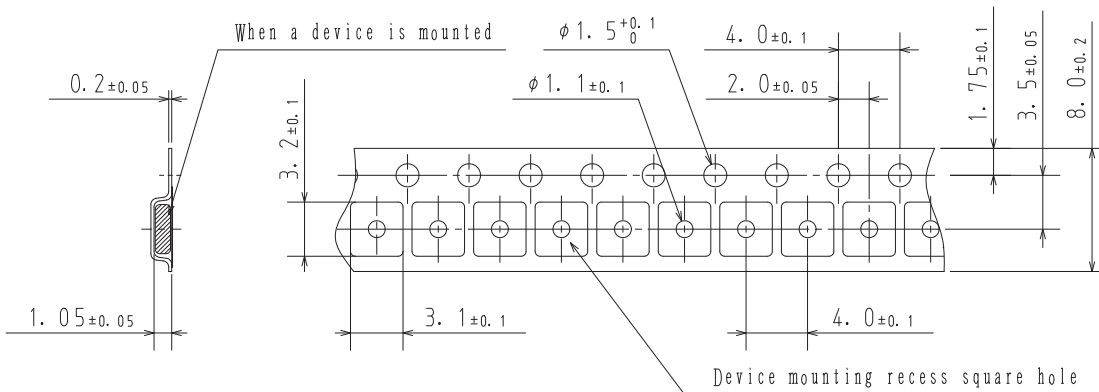
NOTE (1)

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

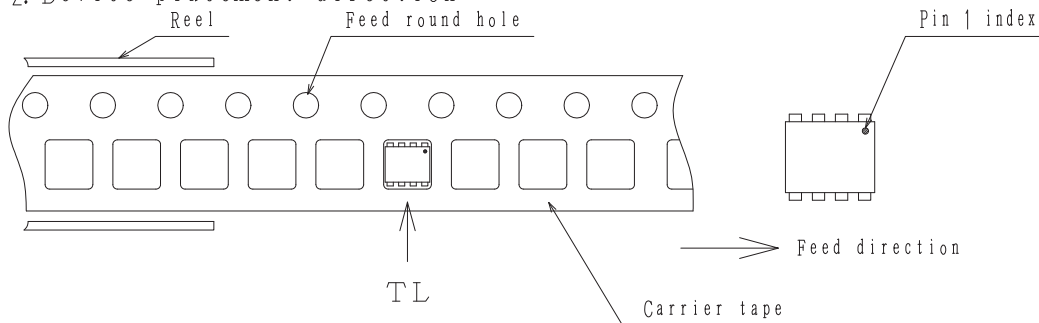
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

### 2. Taping configuration

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



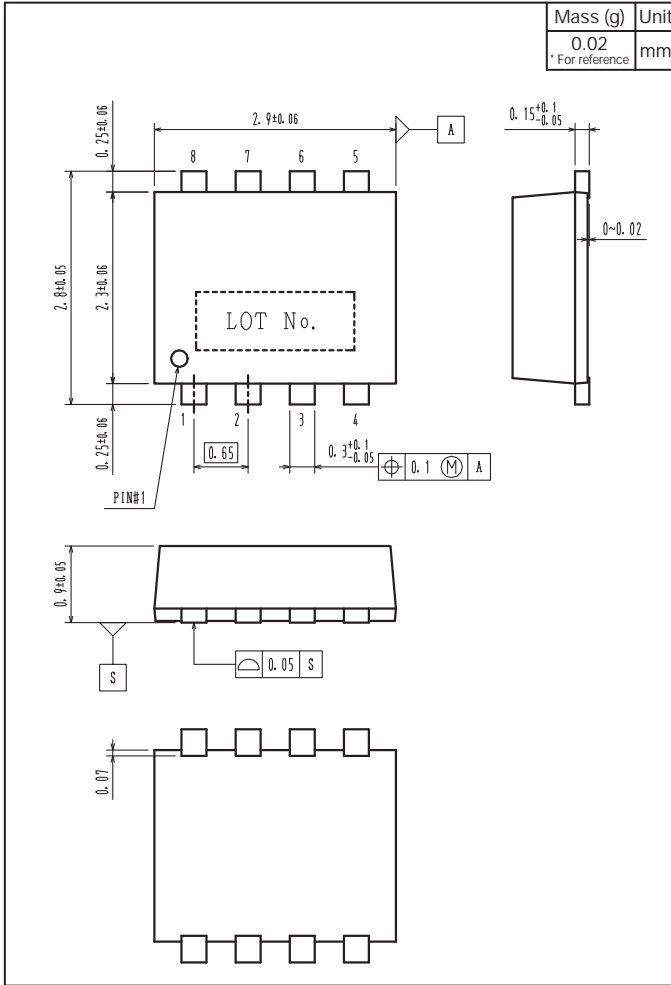
#### 2-2. Device placement direction



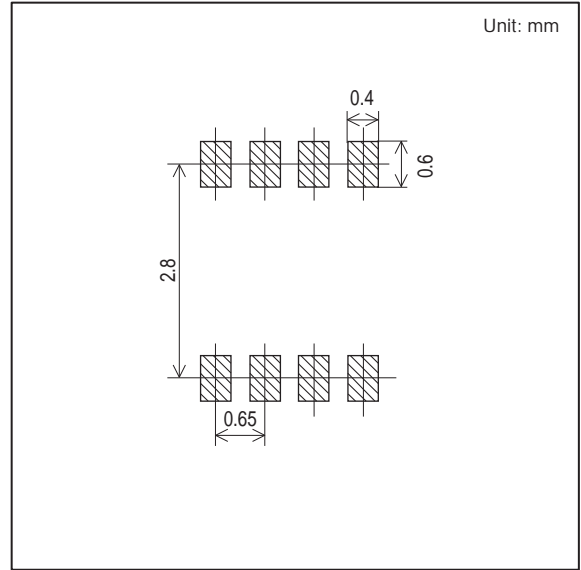
Those with pin 1 index on the feed hole side.....TL

# ECH8663R

## Outline Drawing ECH8663R-TL-H



## Land Pattern Example



Note on usage : Since the ECH8663R is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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