



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

ECH8663R — P-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

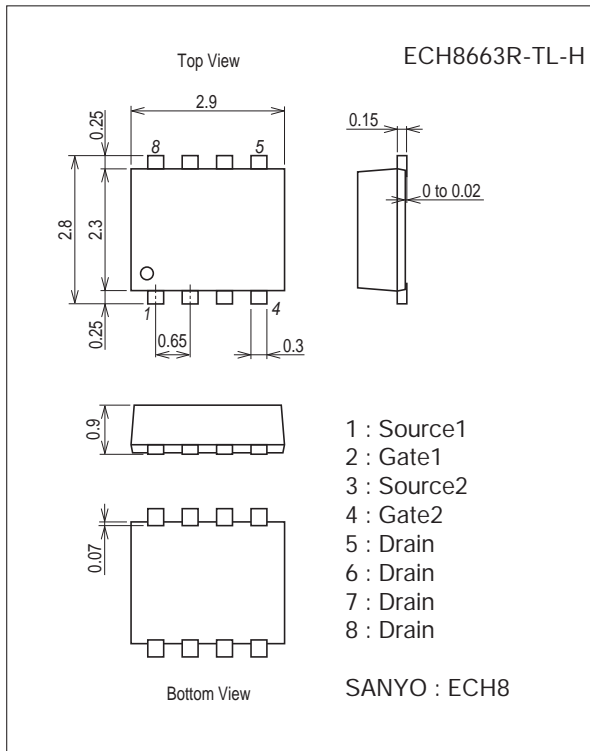
Specifications

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 cycles≤1% | 60 | A |
| Allowable Power Dissipation | PD | When mounted on ceramic substrate (900mm²×0.8mm) 1unit | 1.4 | W |
| Total Power Dissipation | PT | When mounted on ceramic substrate (900mm²×0.8mm) | 1.5 | W |
| Channel Temperature | Tch | | 150 | °C |
| Storage Temperature | Tstg | | -55 to +150 | °C |

Package Dimensions

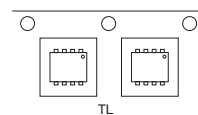
unit : mm (typ)
7011A-003



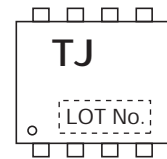
Product & Package Information

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

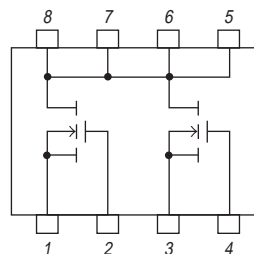
Packing Type : TL



Marking



Electrical Connection

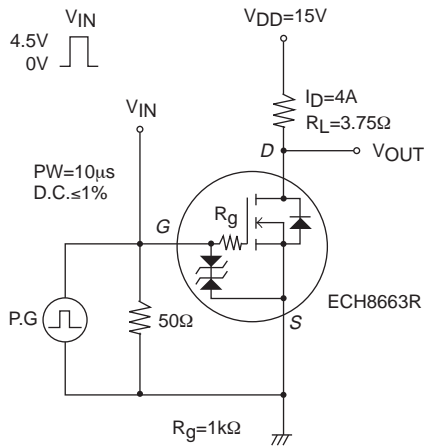


ECH8663R

Electrical Characteristics at Ta=25°C

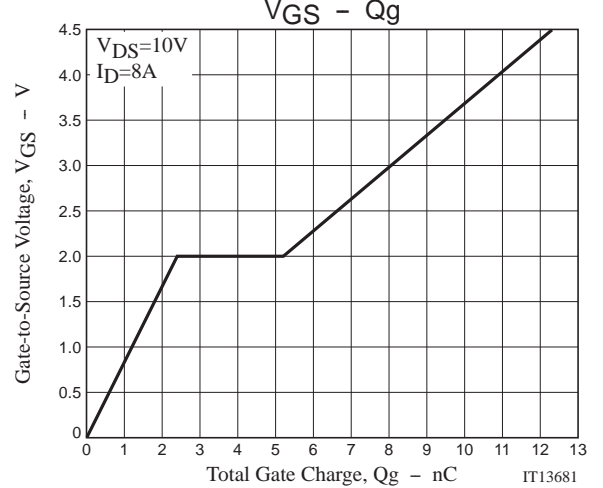
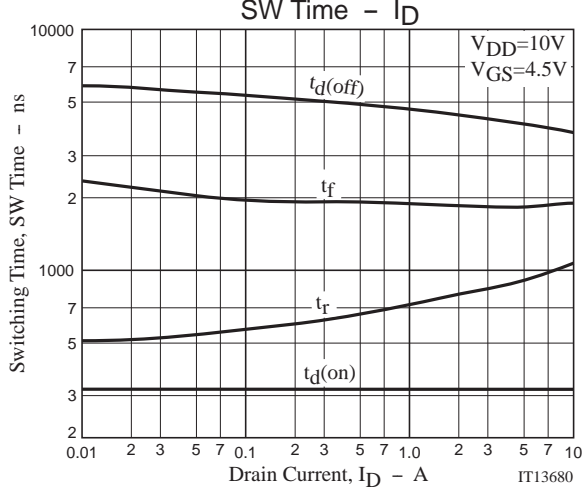
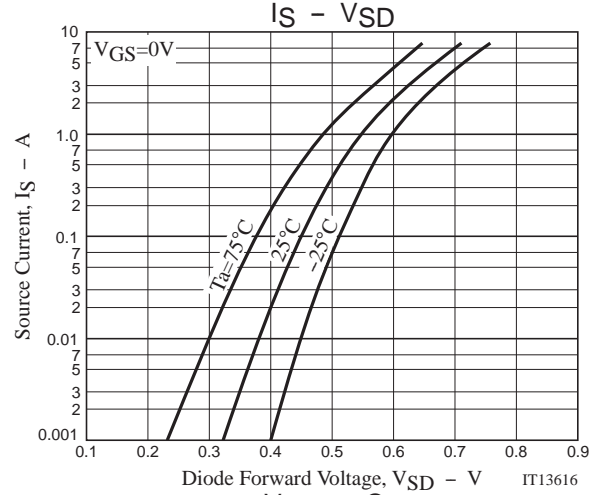
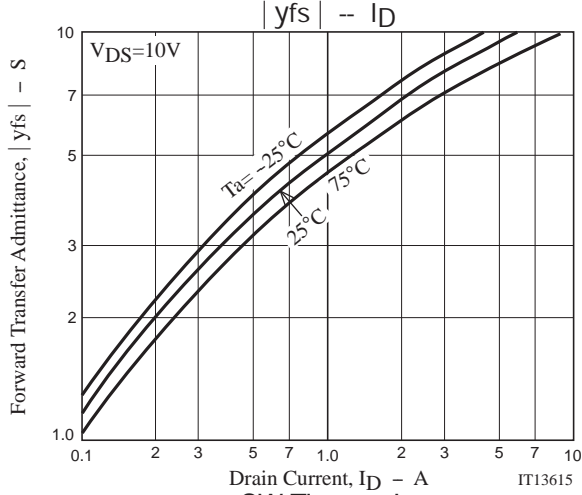
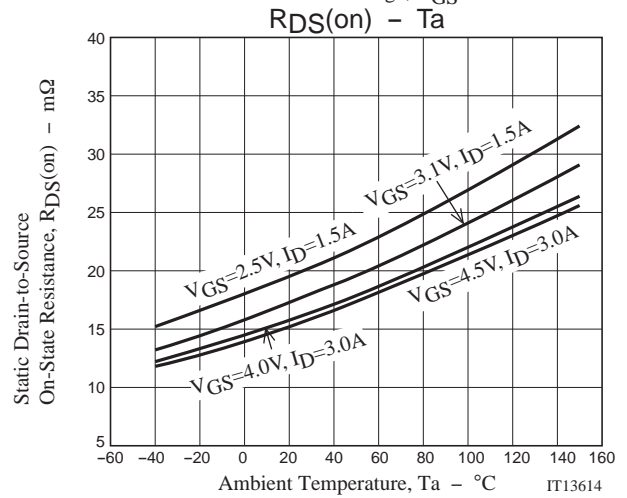
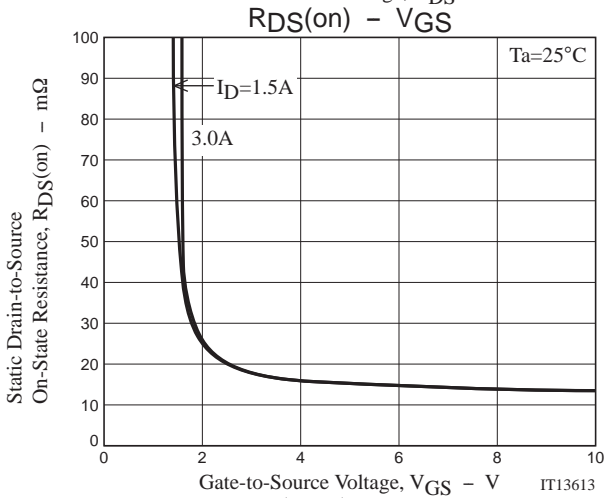
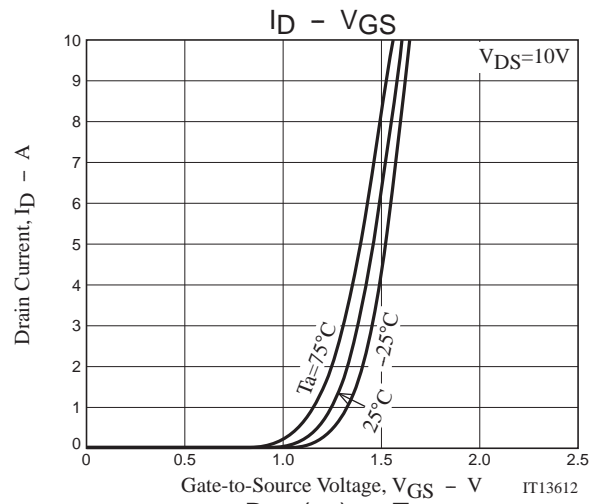
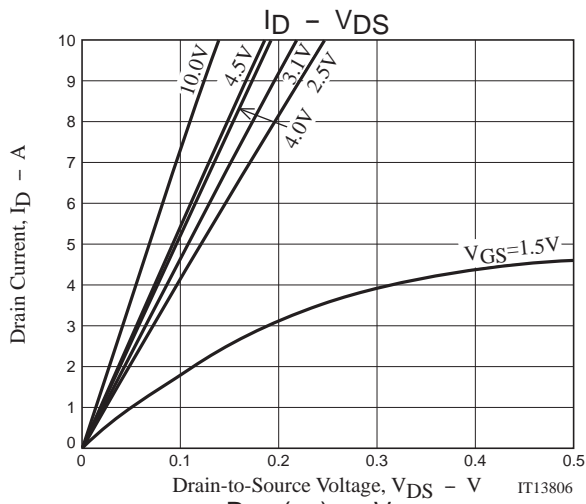
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|----------|-----------------------------|---------|------|------|------|
| | | | min | typ | max | |
| Drain-to-Source Breakdown Voltage | V(BR)DSS | ID=1mA, VGS=0V | 30 | | | V |
| Zero-Gate Voltage Drain Current | IDSS | VDS=30V, VGS=0V | | | 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

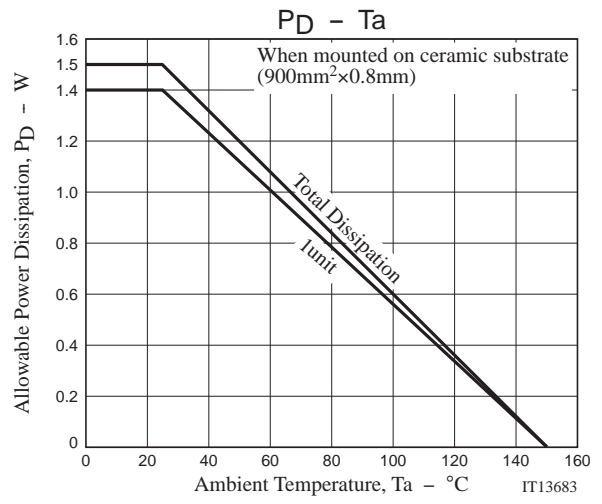
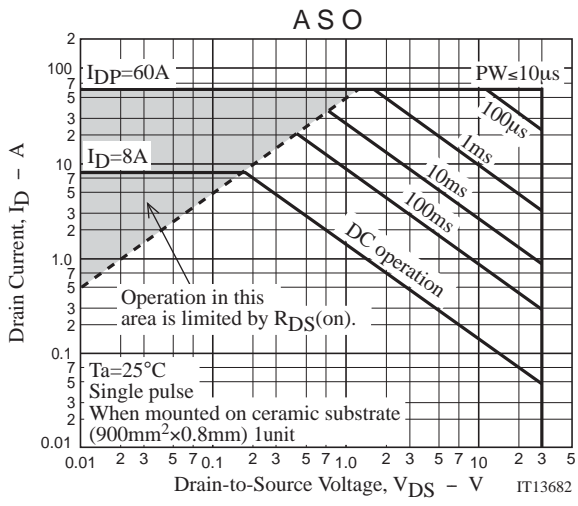


Ordering Information

| 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

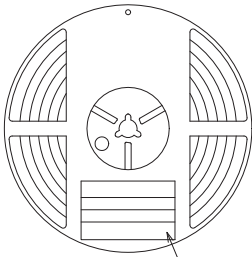
| Package Name | Carrier Tape Type | Maximum Number of devices contained (pcs) | | | Packing format | |
|--------------|-------------------|---|-----------|-----------|---|--|
| | | Reel | Inner box | Outer box | Inner BOX (C-1) | Outer BOX (A-7) |
| ECH8 | CPH6 | 3,000 | 15,000 | 90,000 | 5 reels contained 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

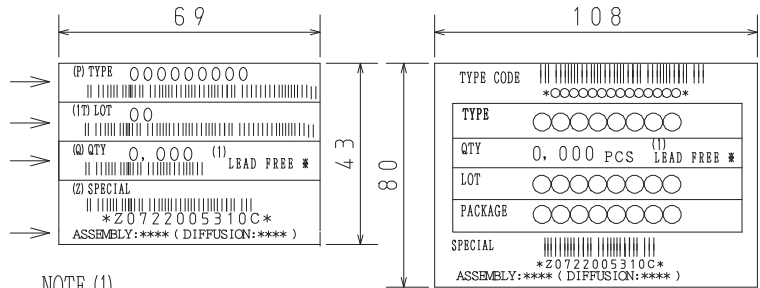
It is a label at the time of factory shipments.
The form of a label may change in physical distribution process.

Packing method



Reel label

Type No.
LOT No.
Quantity
Origin



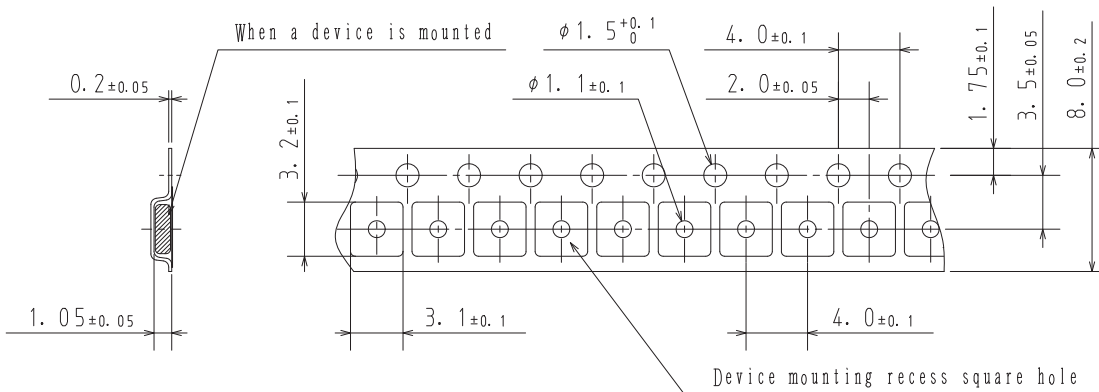
NOTE (1)

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

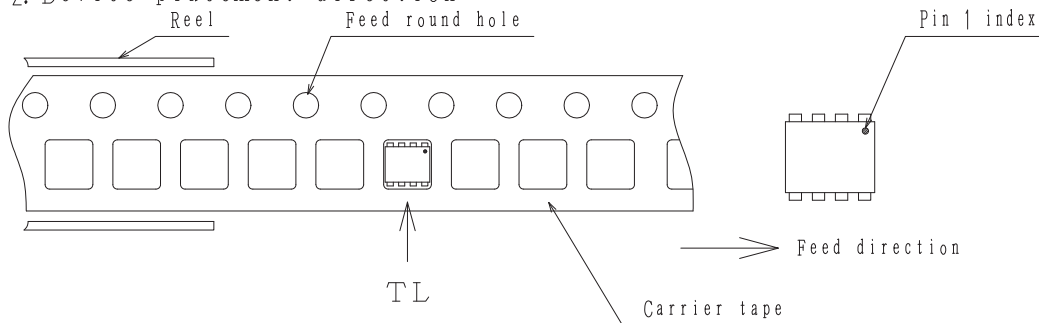
| Label | JEITA Phase |
|-------------|----------------|
| LEAD FREE 3 | JEITA Phase 3A |
| LEAD FREE 4 | JEITA Phase 3 |

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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