



MCH6331 — P-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

- Low ON-resistance
- 4V drive
- Halogen free compliance

Specifications

Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|------------------|--|-------------|------|
| Drain-to-Source Voltage | V _{DSS} | | -30 | V |
| Gate-to-Source Voltage | V _{GSS} | | ±20 | V |
| Drain Current (DC) | I _D | | -3.5 | A |
| Drain Current (Pulse) | I _{DP} | PW≤10μs, duty cycle≤1% | -14 | A |
| Allowable Power Dissipation | P _D | When mounted on ceramic substrate (1200mm ² ×0.8mm) | 1.5 | W |
| Channel Temperature | T _{ch} | | 150 | °C |
| Storage Temperature | T _{stg} | | -55 to +150 | °C |

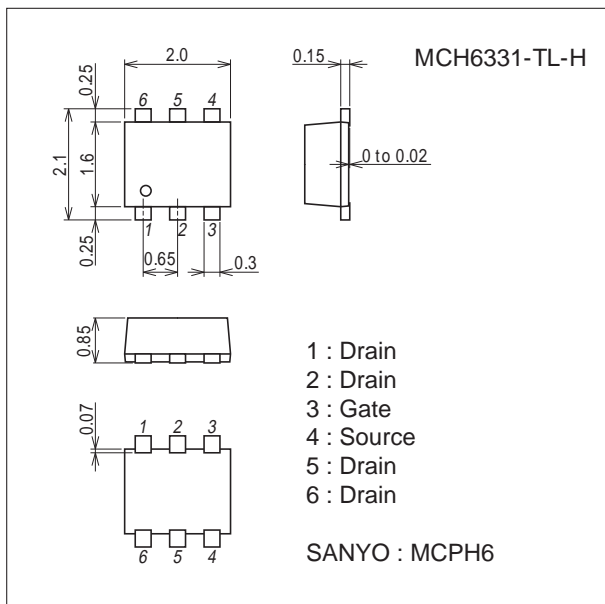
This product is designed to "ESD immunity < 200V**", so please take care when handling.

* Machine Model

Package Dimensions

unit : mm (typ)

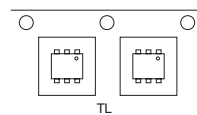
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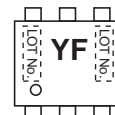
Product & Package Information

- Package : MCPH6
- JEITA, JEDEC : SC-88, SC-70-6, SOT-363
- Minimum Packing Quantity : 3,000 pcs./reel

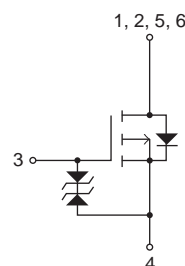
Packing Type : TL



Marking



Electrical Connection

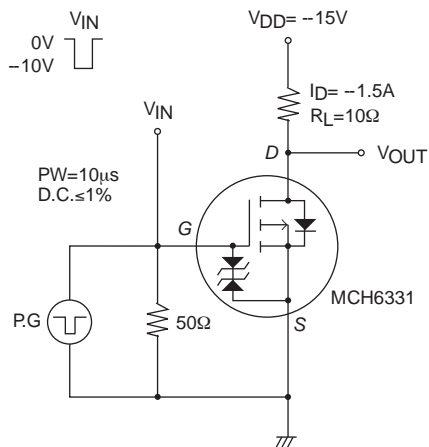


MCH6331

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=-1.5A | 1.68 | 2.8 | | S |
| Static Drain-to-Source On-State Resistance | RDS(on)1 | ID=-1.5A, VGS=-10V | | 75 | 98 | mΩ |
| | RDS(on)2 | ID=-0.75A, VGS=-4.5V | | 122 | 171 | mΩ |
| | RDS(on)3 | ID=-0.75A, VGS=-4V | | 142 | 199 | mΩ |
| Input Capacitance | Ciss | VDS=-10V, f=1MHz | | 250 | | pF |
| Output Capacitance | Coss | | | 65 | | pF |
| Reverse Transfer Capacitance | Crss | | | 46 | | pF |
| Turn-ON Delay Time | td(on) | | See specified Test Circuit. | | 5.4 | |
| Rise Time | tr | | | 12 | | ns |
| Turn-OFF Delay Time | td(off) | | | 26 | | ns |
| Fall Time | tf | | | 19 | | ns |
| Total Gate Charge | Qg | VDS=-10V, VGS=-10V, ID=-3.5A | | | 5.0 | |
| Gate-to-Source Charge | Qgs | | | 1.0 | | nC |
| Gate-to-Drain "Miller" Charge | Qgd | | | 1.2 | | nC |
| Diode Forward Voltage | VSD | IS=-3.5A, VGS=0V | | -0.86 | -1.5 | V |

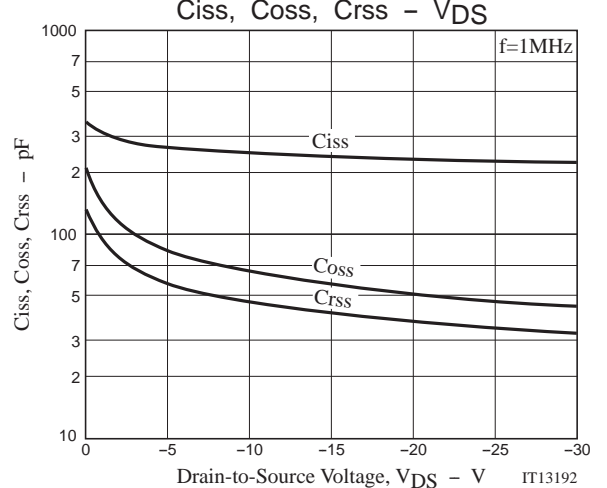
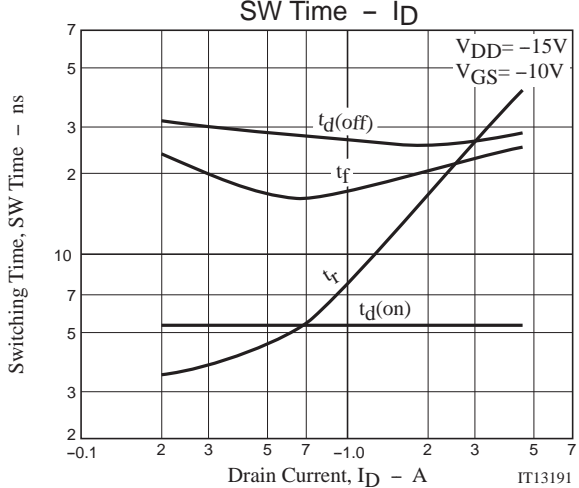
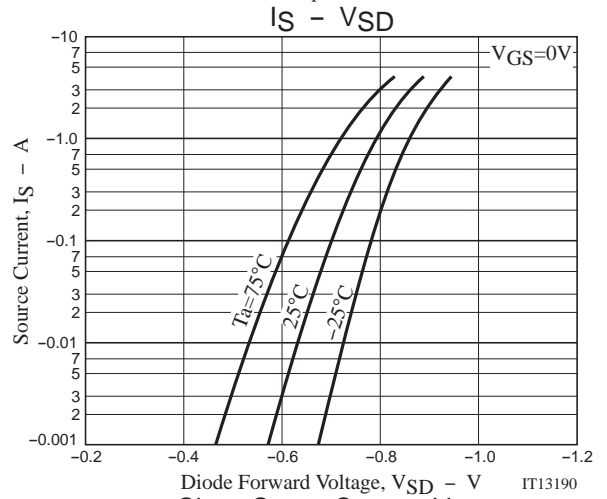
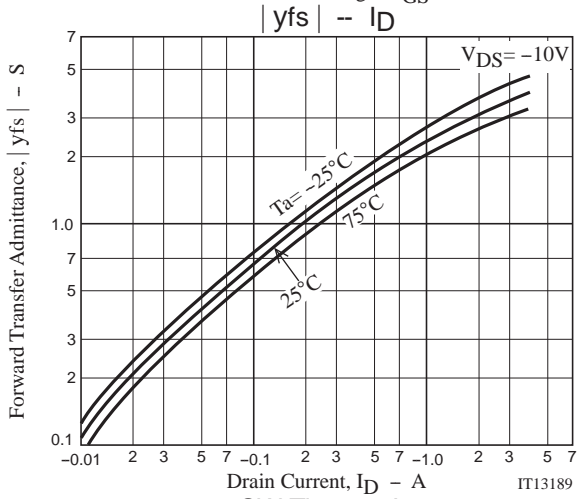
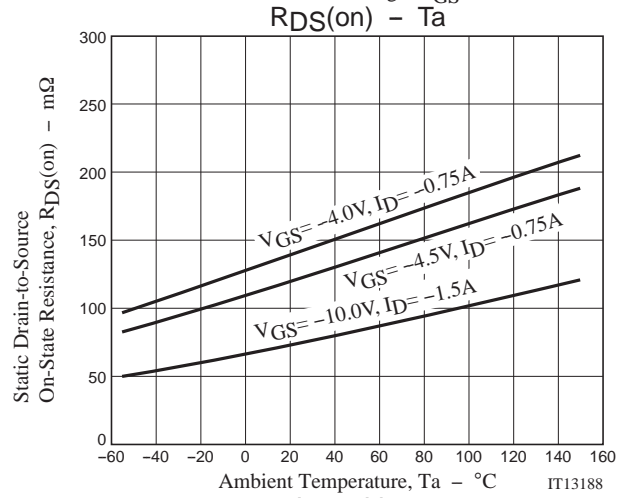
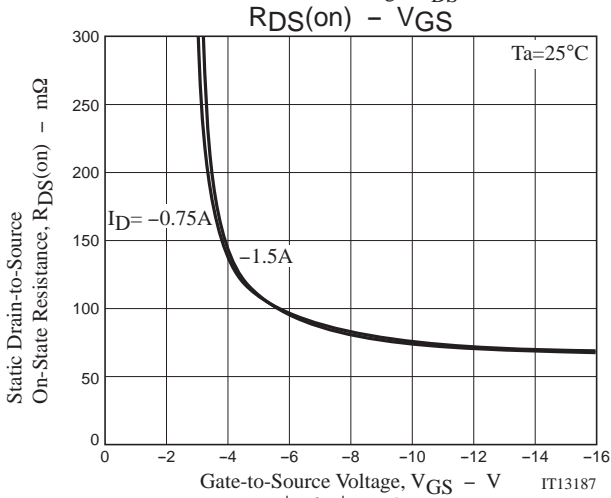
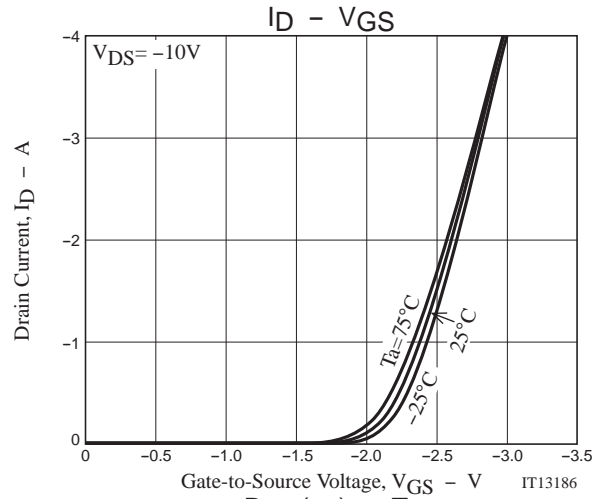
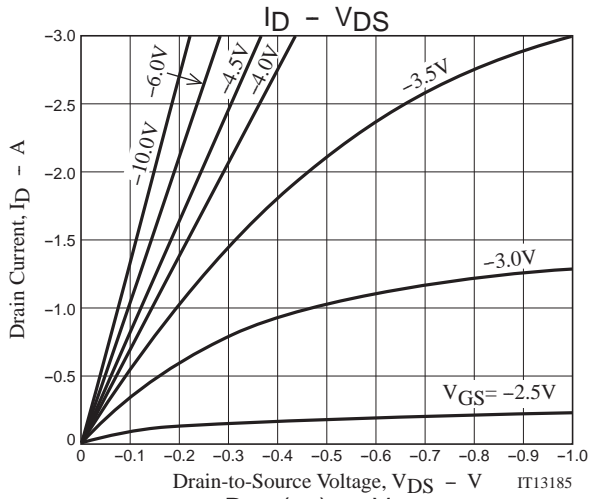
Switching Time Test Circuit



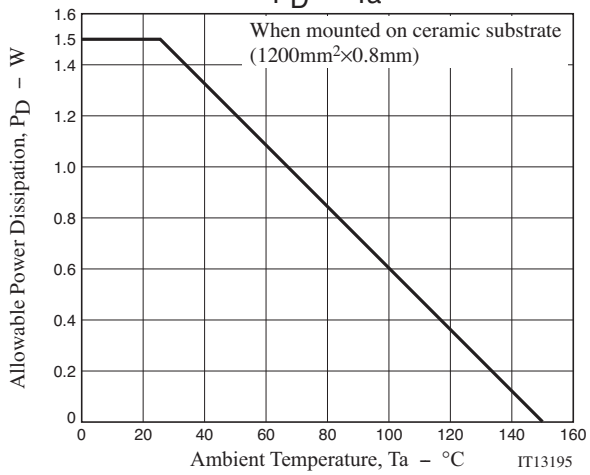
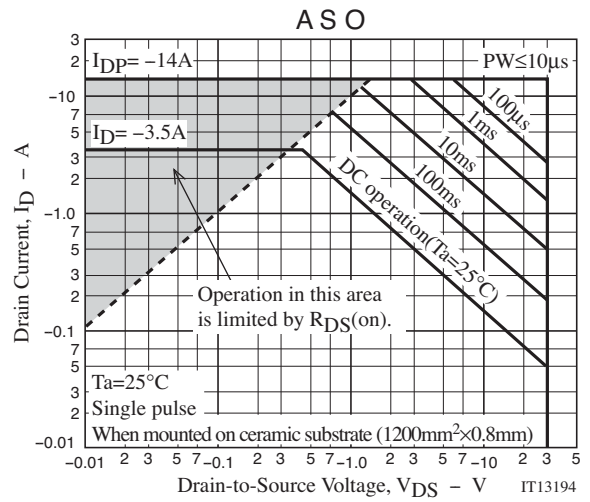
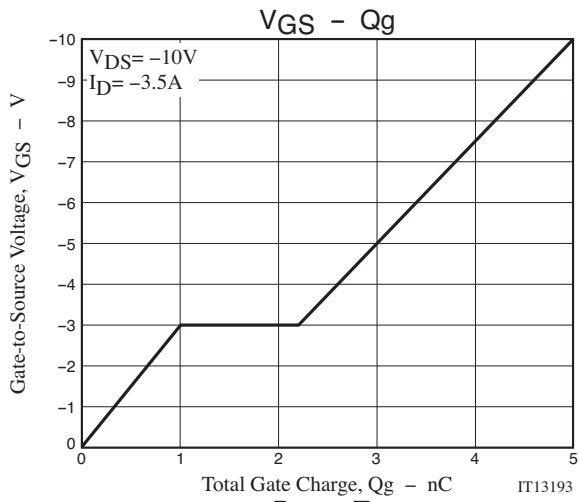
Ordering Information

| Device | Package | Shipping | memo |
|--------------|---------|----------------|--------------------------|
| MCH6331-TL-H | MCPH6 | 3,000pcs./reel | Pb Free and Halogen Free |

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MCH6331



MCH6331

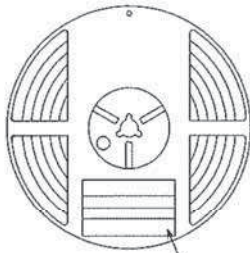
Taping Specification

MCH6331-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) |
| MCPH6 | MCP4 | 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 |

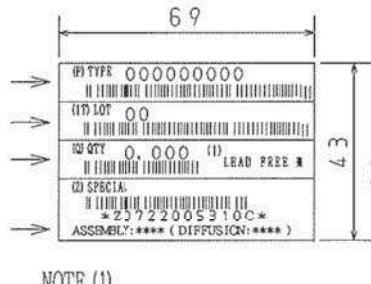
Packing method



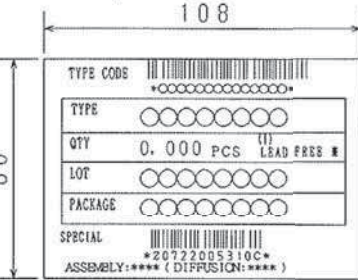
Reel label

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.)



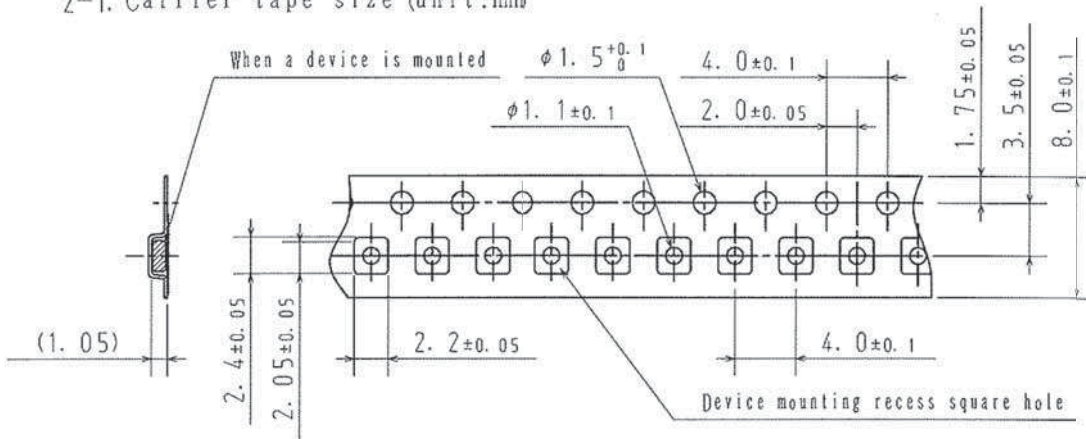
NOTE (1)

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

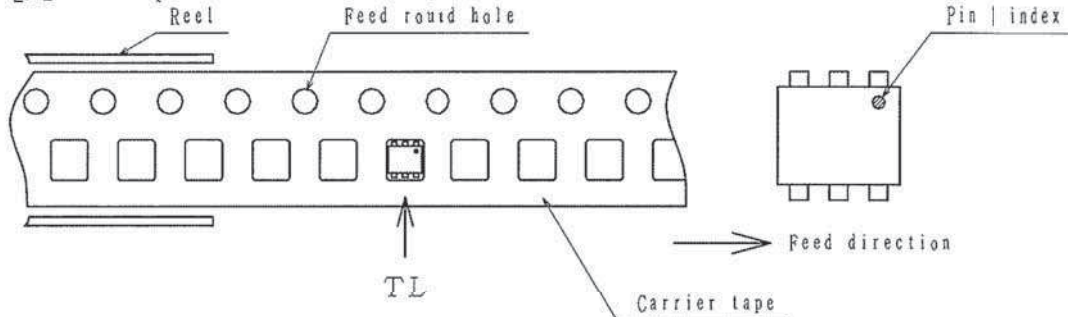
| Label | JEITA Phase |
|-------------|----------------|
| LEAD FREE 3 | JEITA Phase 3A |
| LEAD FREE 4 | JEITA Phase 3 |

2. Taping configuration

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



2-2. Device placement direction

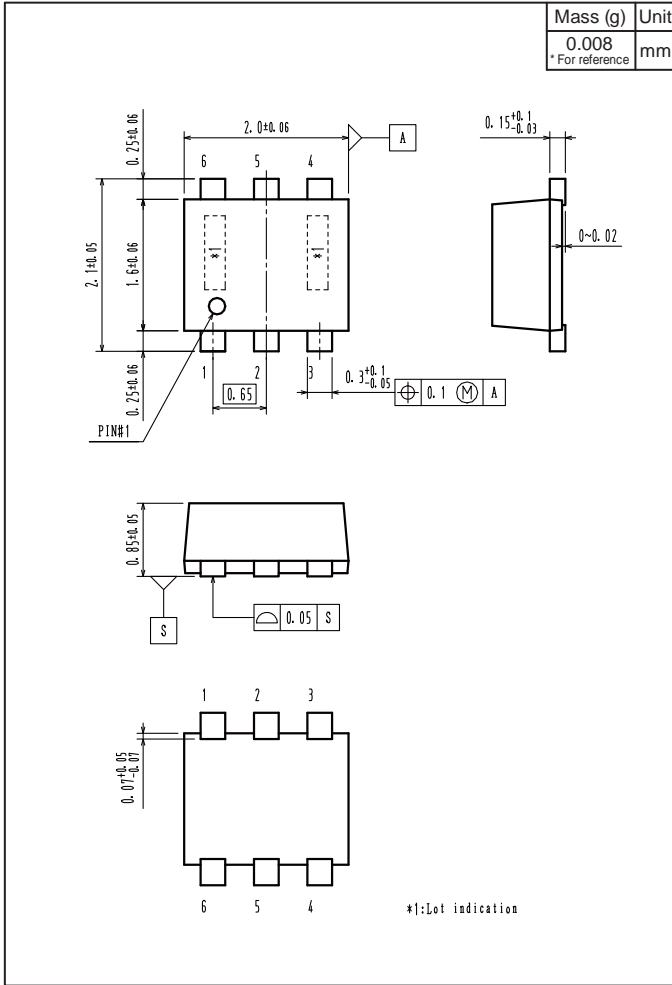


Those with pin | index on the feed hole side.....TL

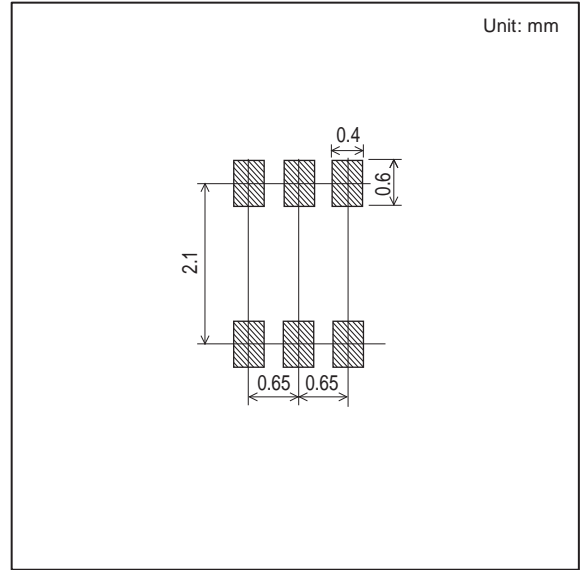
MCH6331

Outline Drawing

MCH6331-TL-H



Land Pattern Example



Note on usage : Since the MCH6331 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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