



SANYO Semiconductors

# DATA SHEET

An ON Semiconductor Company

## CPH6354 — P-Channel Silicon MOSFET General-Purpose Switching Device Applications

### Features

- ON-resistance  $R_{DS(on)} = 77\text{m}\Omega$  (typ.)
- 4V drive
- Halogen free compliance
- Protection diode in

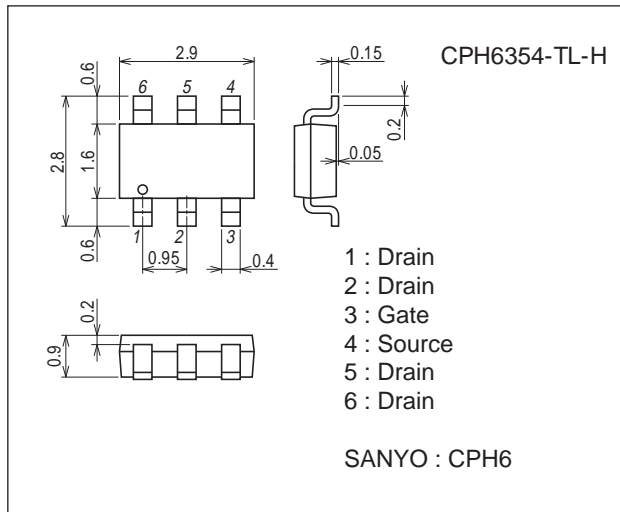
### Specifications

Absolute Maximum Ratings at  $T_a = 25^\circ\text{C}$

| Parameter                   | Symbol    | Conditions  | Ratings     | Unit             |
|-----------------------------|-----------|---|-------------|------------------|
| Drain-to-Source Voltage     | $V_{DSS}$ |   | -60         | V                |
| Gate-to-Source Voltage      | $V_{GSS}$ |   | $\pm 20$    | V                |
| Drain Current (DC)          | $I_D$     |   | -4          | A                |
| Drain Current (Pulse)       | $I_{DP}$  | $PW \leq 10\mu\text{s}$ , duty cycle $\leq 1\%$                 | -16         | A                |
| Allowable Power Dissipation | $P_D$     | When mounted on ceramic substrate (1500mm <sup>2</sup> × 0.8mm) | 1.6         | W                |
| Channel Temperature         | $T_{ch}$  |   | 150         | $^\circ\text{C}$ |
| Storage Temperature         | $T_{stg}$ |   | -55 to +150 | $^\circ\text{C}$ |

### Package Dimensions

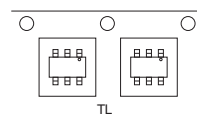
unit : mm (typ)  
7018A-003



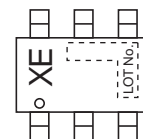
### Product & Package Information

- Package : CPH6
- JEITA, JEDEC : SC-74, SOT-26, SOT-457
- Minimum Packing Quantity : 3,000 pcs./reel

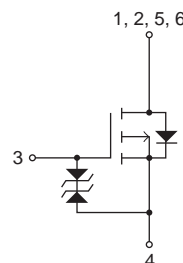
### Packing Type: TL



### Marking



### Electrical Connection

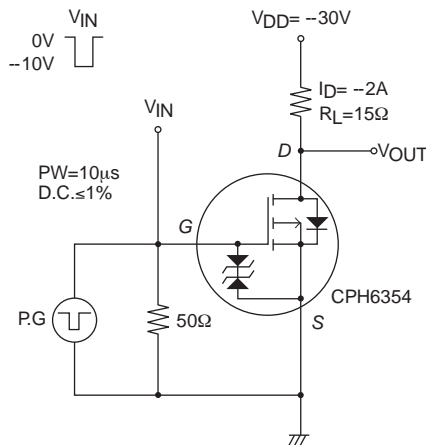


# CPH6354

## Electrical Characteristics at Ta=25°C

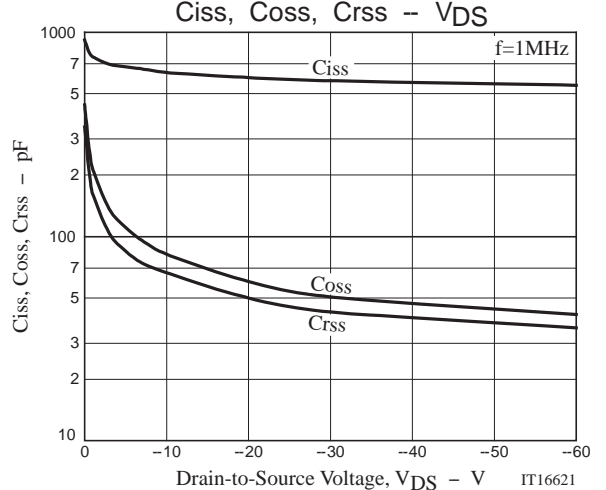
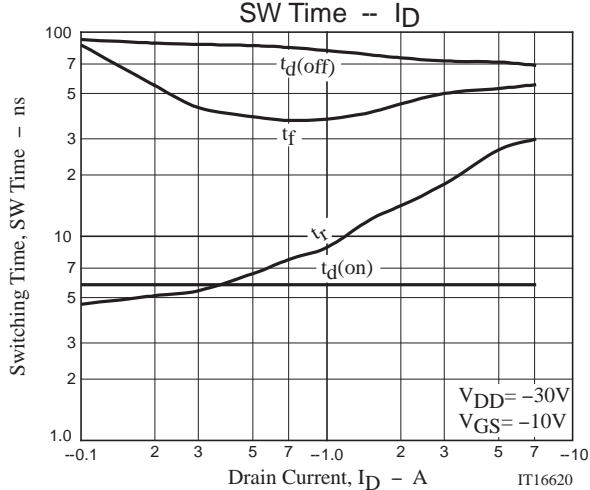
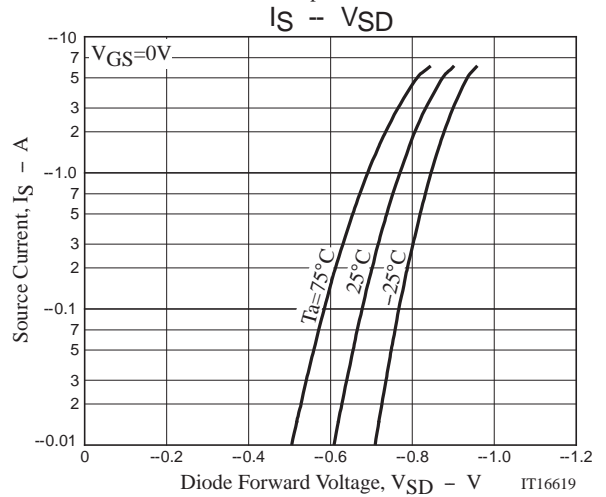
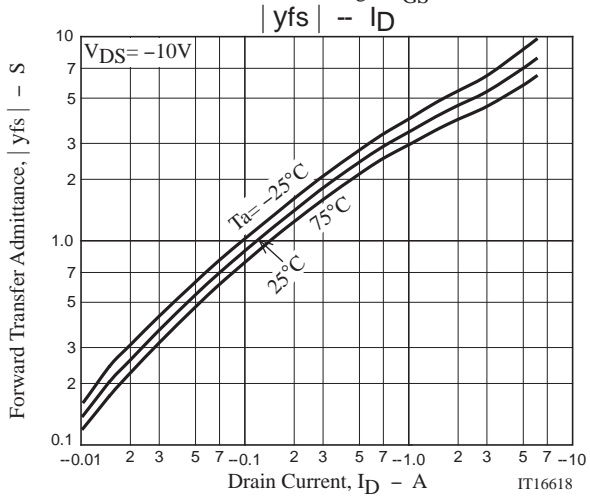
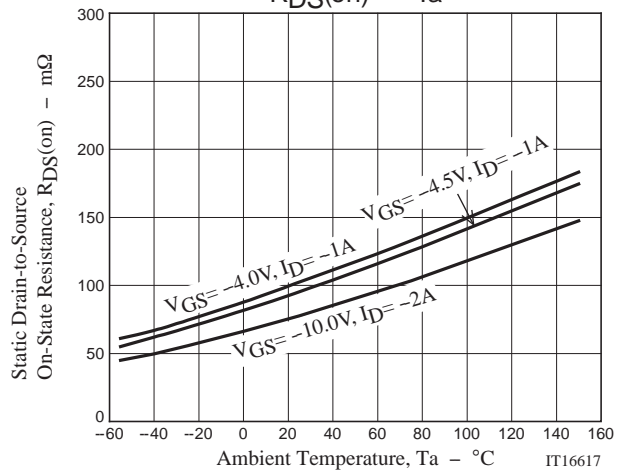
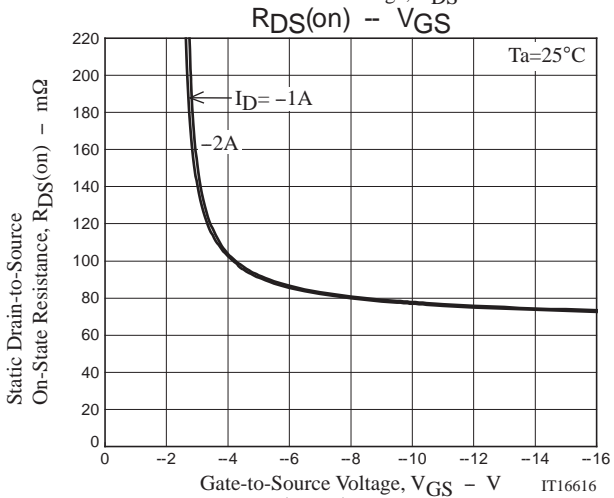
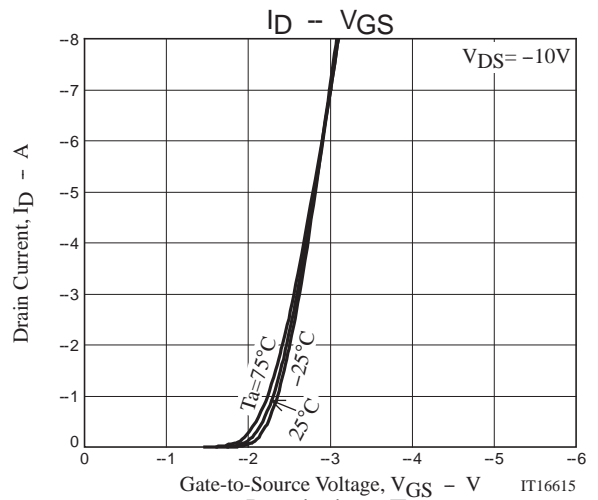
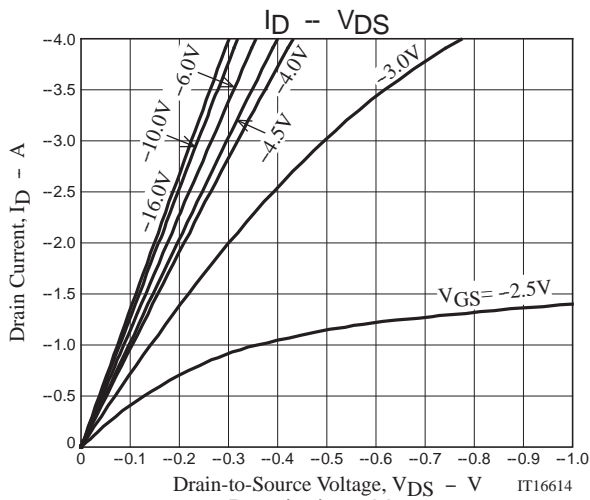
| Parameter                                  | Symbol               | Conditions  | Ratings |       |      | Unit |
|--|----------------------|---|---------|-------|------|------|
|  |                      |   | min     | typ   | max  |      |
| Drain-to-Source Breakdown Voltage          | V(BR)DSS             | I <sub>D</sub> =-1mA, V <sub>GS</sub> =0V                         | -60     |       |      | V    |
| Zero-Gate Voltage Drain Current            | I <sub>DSS</sub>     | V <sub>DS</sub> =-60V, V <sub>GS</sub> =0V                        |         |       | -1   | μA   |
| Gate-to-Source Leakage Current             | I <sub>GSS</sub>     | V <sub>GS</sub> =±16V, V <sub>DS</sub> =0V                        |         |       | ±10  | μA   |
| Cutoff Voltage                             | V <sub>GS(off)</sub> | V <sub>DS</sub> =-10V, I <sub>D</sub> =-1mA                       | -1.2    |       | -2.6 | V    |
| Forward Transfer Admittance                | y <sub>fs</sub>      | V <sub>DS</sub> =-10V, I <sub>D</sub> =-2A                        |         | 4.8   |      | S    |
| Static Drain-to-Source On-State Resistance | R <sub>DS(on)1</sub> | I <sub>D</sub> =-2A, V <sub>GS</sub> =-10V                        |         | 77    | 100  | mΩ   |
|  | R <sub>DS(on)2</sub> | I <sub>D</sub> =-1A, V <sub>GS</sub> =-4.5V                       |         | 96    | 135  | mΩ   |
|  | R <sub>DS(on)3</sub> | I <sub>D</sub> =-1A, V <sub>GS</sub> =-4V                         |         | 103   | 145  | mΩ   |
| Input Capacitance                          | C <sub>iss</sub>     |   |         | 600   |      | pF   |
| Output Capacitance                         | C <sub>oss</sub>     | V <sub>DS</sub> =-20V, f=1MHz                                     |         | 60    |      | pF   |
| Reverse Transfer Capacitance               | C <sub>rss</sub>     |   |         | 50    |      | pF   |
| Turn-ON Delay Time                         | t <sub>d(on)</sub>   | See specified Test Circuit.                                       |         | 5.8   |      | ns   |
| Rise Time                                  | t <sub>r</sub>       |   |         | 12    |      | ns   |
| Turn-OFF Delay Time                        | t <sub>d(off)</sub>  |   |         | 78    |      | ns   |
| Fall Time                                  | t <sub>f</sub>       |   |         | 40    |      | ns   |
| Total Gate Charge                          | Q <sub>g</sub>       |   |         |       | 14   |      |
| Gate-to-Source Charge                      | Q <sub>gs</sub>      | V <sub>DS</sub> =-30V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-4A |         | 1.6   |      | nC   |
| Gate-to-Drain "Miller" Charge              | Q <sub>gd</sub>      |   |         | 3.4   |      | nC   |
| Diode Forward Voltage                      | V <sub>SD</sub>      | I <sub>S</sub> =-4A, V <sub>GS</sub> =0V                          |         | -0.84 | -1.2 | V    |

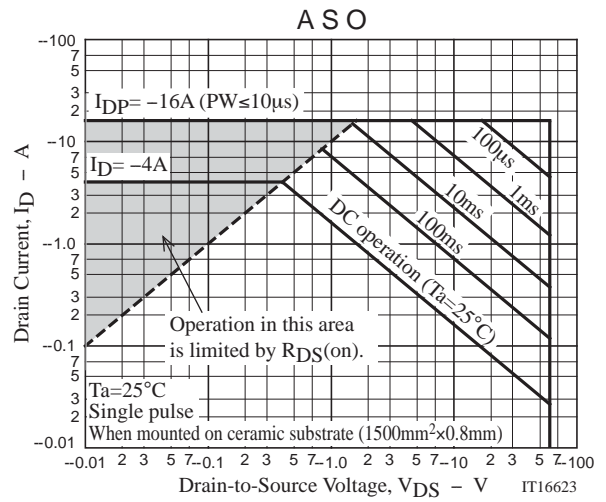
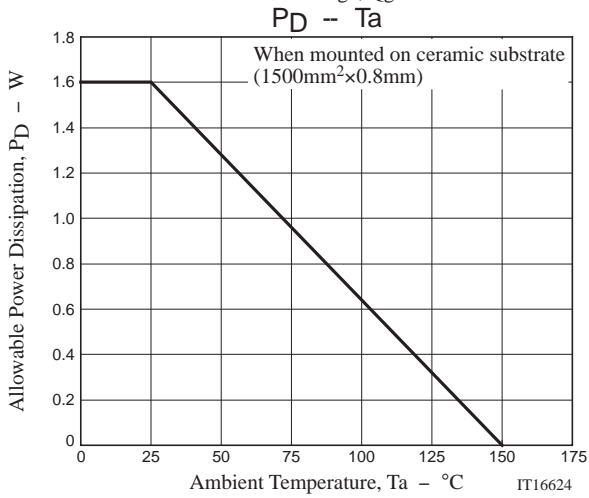
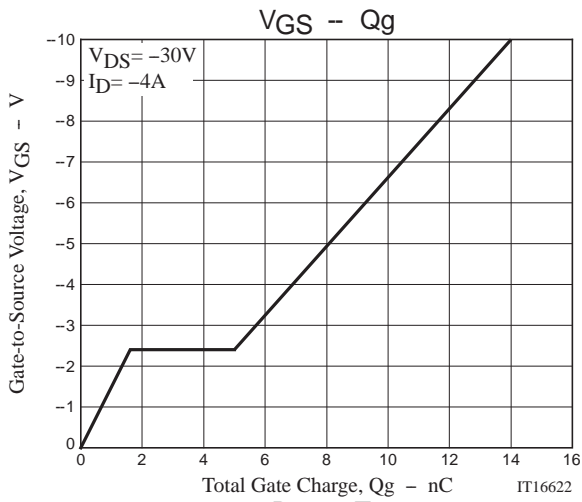
## Switching Time Test Circuit



## Ordering Information

| Device       | Package | Shipping       | memo                     |
|--------------|---------|----------------|--------------------------|
| CPH6354-TL-H | CPH6    | 3,000pcs./reel | Pb Free and Halogen Free |





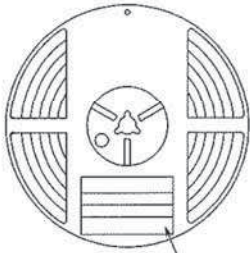
Embossed Taping Specification

CPH6354-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)  |
| CPH6         | CPH6              | 3,000                                     | 15,000    | 90,000    | 5 reels contained<br>Dimensions:mm (external)<br>183×72×185 | 6 inner boxes contained<br>Dimensions:mm (external)<br>440×195×210 |

Packing method

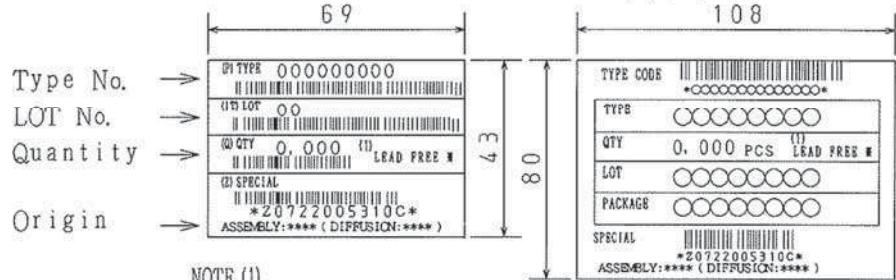


Reel label

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.



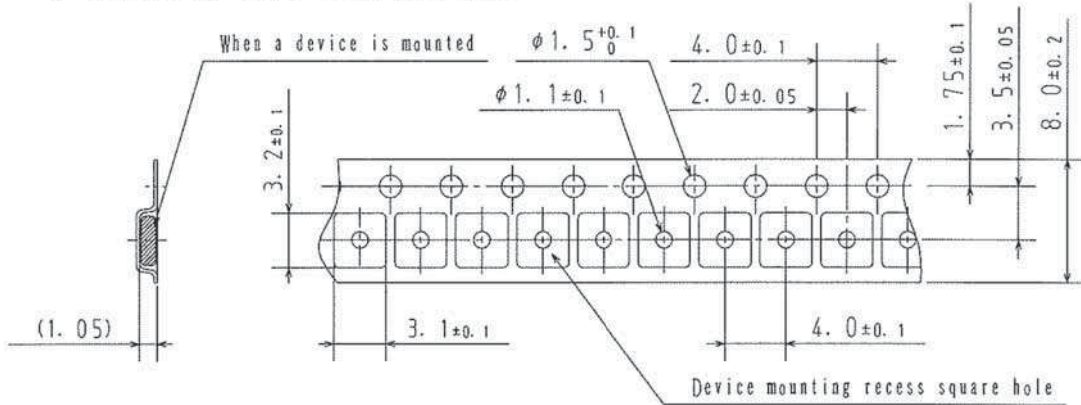
NOTE (1)

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

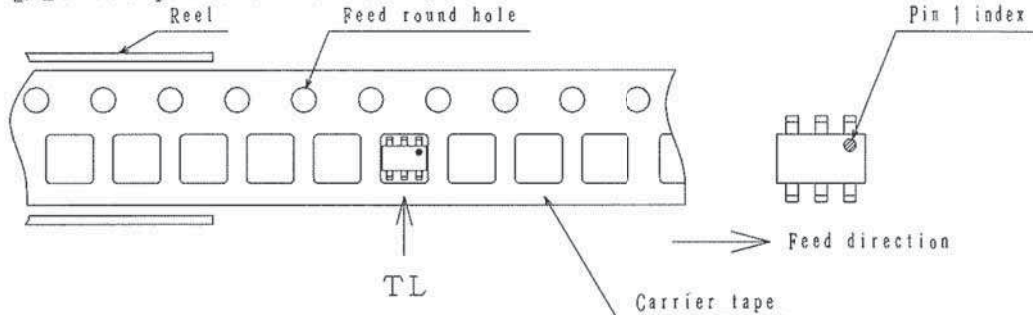
| Label       | JEITA Phase    |
|-------------|----------------|
| LEAD FREE 3 | JEITA Phase 3A |
| LEAD FREE 4 | JEITA Phase 3  |

2. Taping configuration

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



2-2. Device placement direction

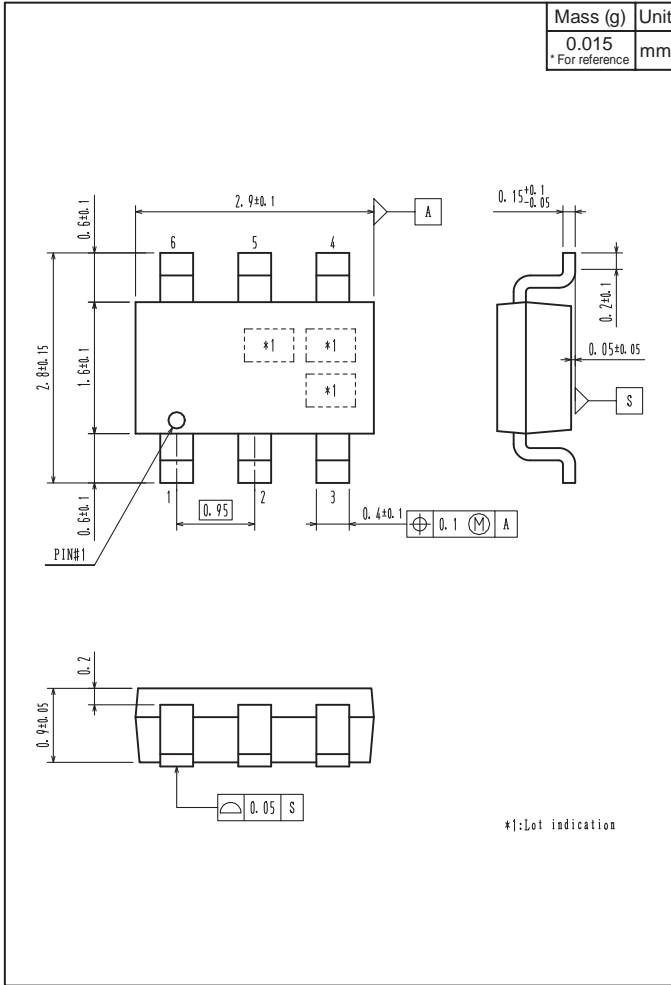


Those with pin 1 index on the feed hole side.....TL

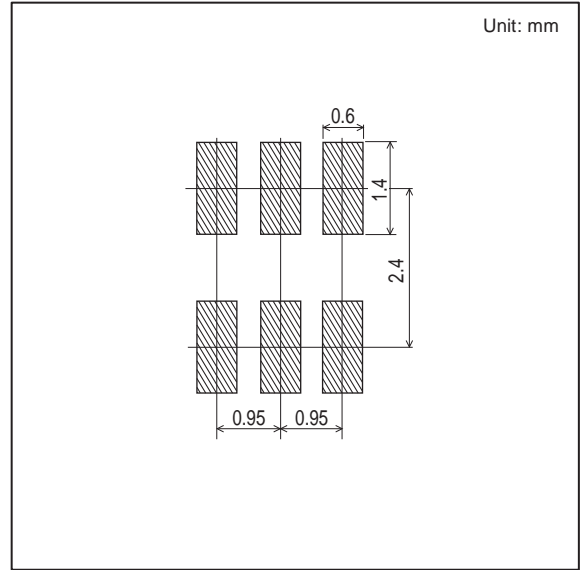
# CPH6354

## Outline Drawing

CPH6354-TL-H



## Land Pattern Example



Note on usage : Since the CPH6354 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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