



SANYO Semiconductors

## DATA SHEET

An ON Semiconductor Company

P-Channel Silicon MOSFET

# SFT1342 — General-Purpose Switching Device Applications

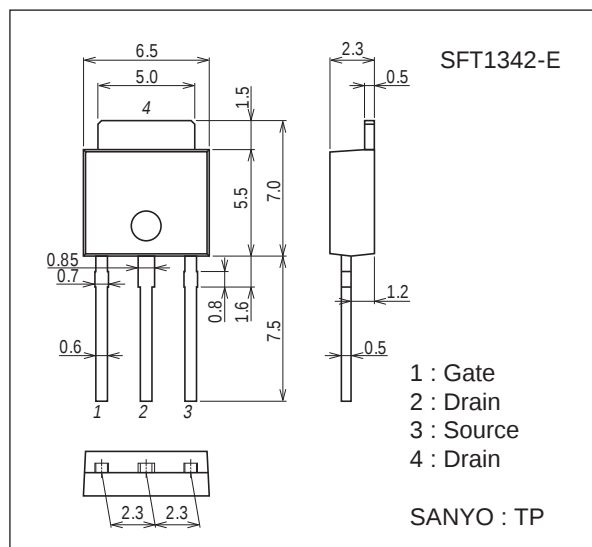
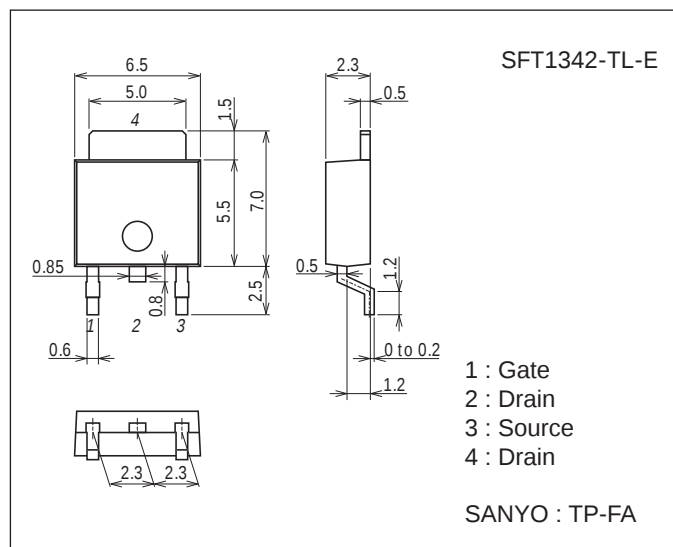
## Features

- Motor drive application
- Protection diode in
- 4V drive

## Specifications

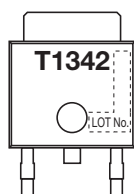
Absolute Maximum Ratings at  $T_a=25^\circ\text{C}$ 

| Parameter                                | Symbol    | Conditions                                      | Ratings     | Unit             |
|------------------------------------------|-----------|-------------------------------------------------|-------------|------------------|
| Drain-to-Source Voltage                  | $V_{DS}$  |                                                 | -60         | V                |
| Gate-to-Source Voltage                   | $V_{GS}$  |                                                 | $\pm 20$    | V                |
| Drain Current (DC)                       | $I_D$     |                                                 | -12         | A                |
| Drain Current (PW $\leq 10\mu\text{s}$ ) | $I_{DP}$  | PW $\leq 10\mu\text{s}$ , duty cycle $\leq 1\%$ | -48         | A                |
| Allowable Power Dissipation              | $P_D$     |                                                 | 1.0         | W                |
|                                          |           | $T_c=25^\circ\text{C}$                          | 15          | W                |
| Channel Temperature                      | $T_{ch}$  |                                                 | 150         | $^\circ\text{C}$ |
| Storage Temperature                      | $T_{stg}$ |                                                 | -55 to +150 | $^\circ\text{C}$ |

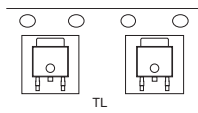
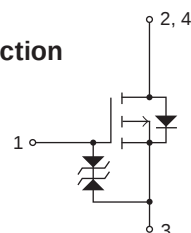
**Package Dimensions** unit : mm (typ)  
7518-004

**Package Dimensions** unit : mm (typ)  
7003-004


## Product & Package Information

- Package : TP
- JEITA, JEDEC : SC-64, TO-251
- Minimum Packing Quantity : 500 pcs./bag

**Marking**  
(TP, TP-FA)


- Package : TP-FA
- JEITA, JEDEC : SC-63, TO-252
- Minimum Packing Quantity : 700 pcs./reel

**Packing Type (TP-FA) : TL**

**Electrical Connection**


SANYO Semiconductor Co., Ltd.

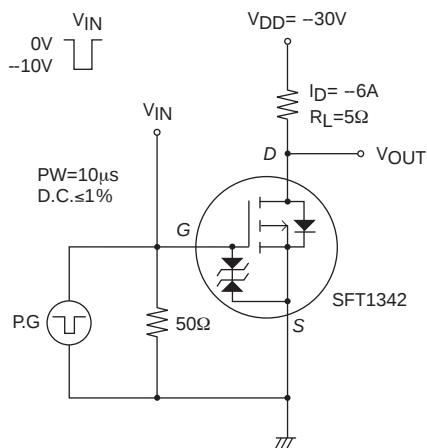
<http://semicon.sanyo.com/en/network>

## SFT1342

### Electrical Characteristics at Ta=25°C

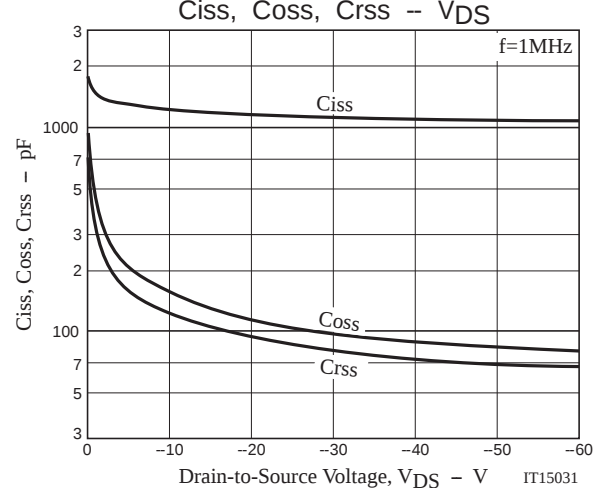
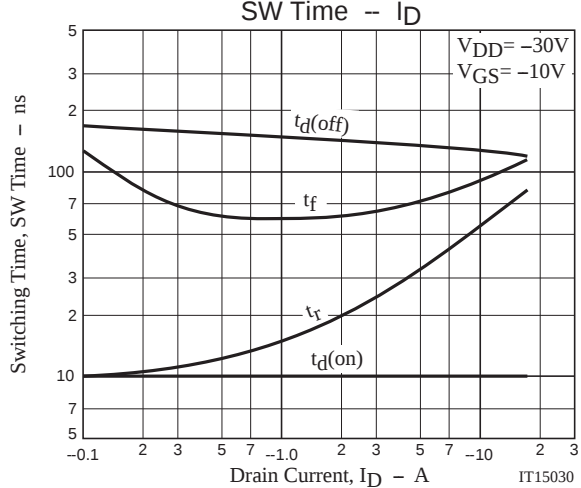
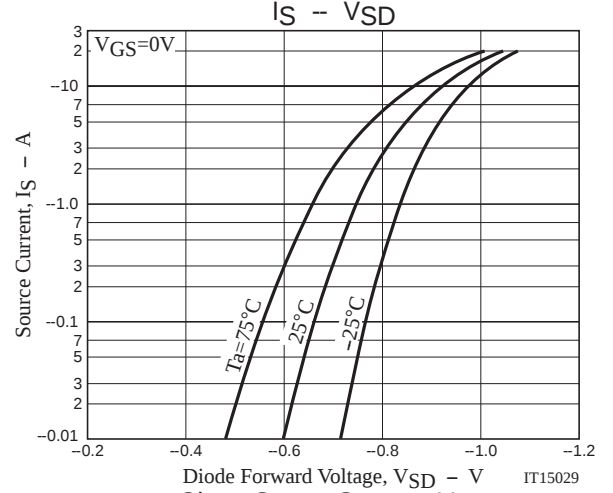
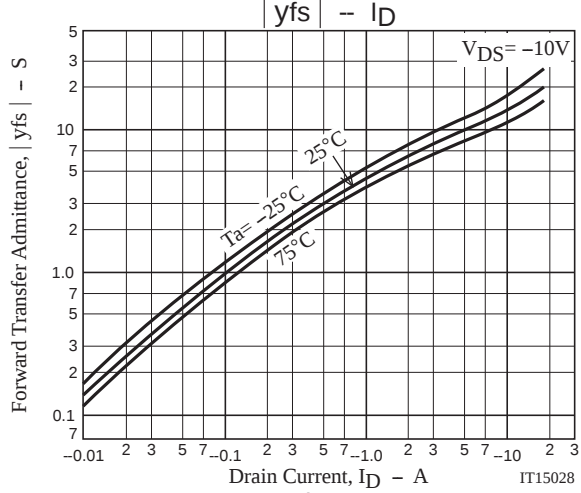
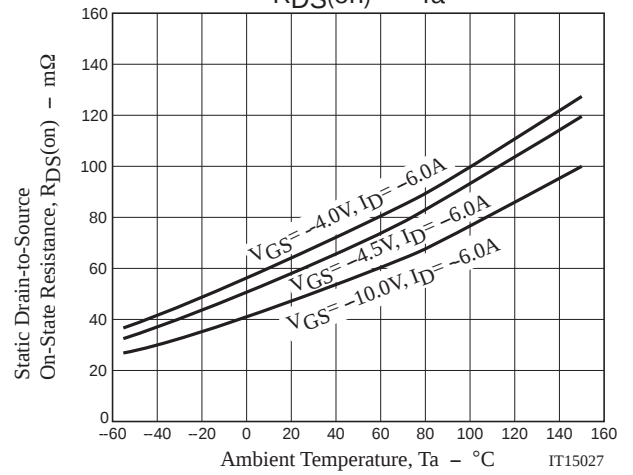
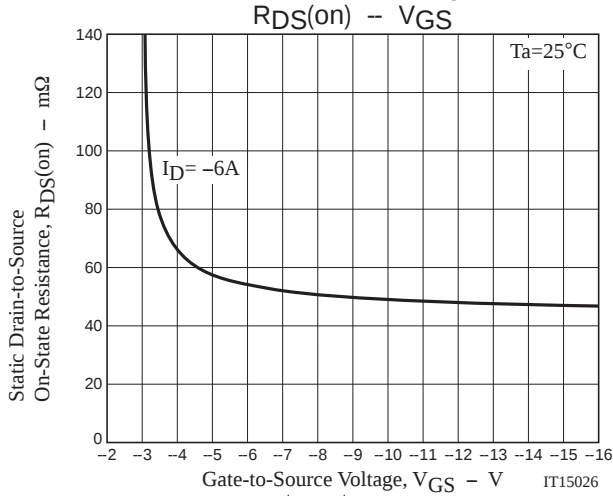
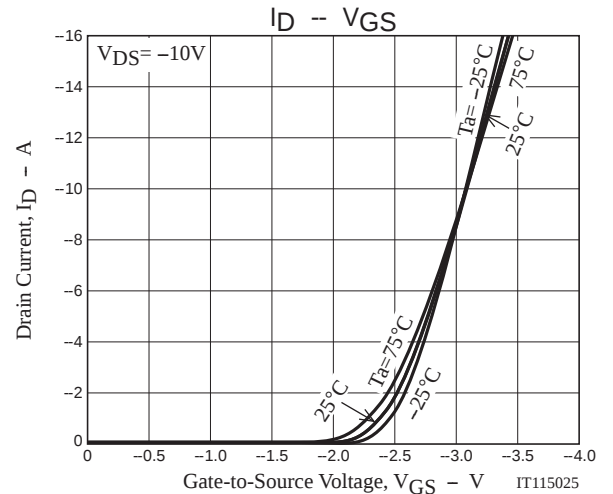
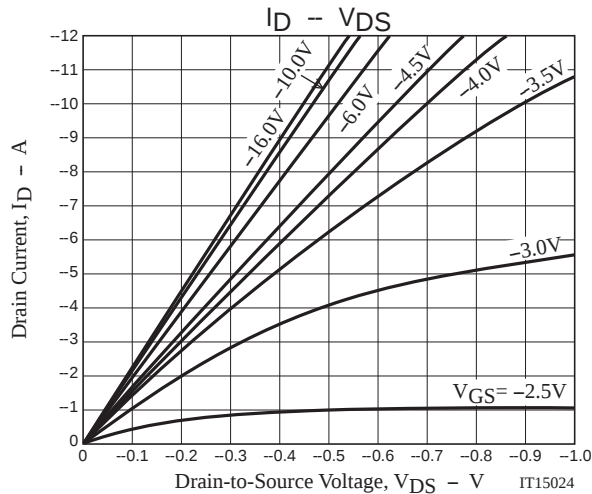
| Parameter                                  | Symbol        | Conditions                                 | Ratings |       |          | Unit       |
|--------------------------------------------|---------------|--------------------------------------------|---------|-------|----------|------------|
|                                            |               |                                            | min     | typ   | max      |            |
| Drain-to-Source Breakdown Voltage          | $V_{(BR)DSS}$ | $I_D = -1mA, V_{GS} = 0V$                  | -60     |       |          | V          |
| Zero-Gate Voltage Drain Current            | $I_{DSS}$     | $V_{DS} = -60V, V_{GS} = 0V$               |         |       | -1       | $\mu A$    |
| Gate-to-Source Leakage Current             | $I_{GSS}$     | $V_{GS} = \pm 16V, V_{DS} = 0V$            |         |       | $\pm 10$ | $\mu A$    |
| Cutoff Voltage                             | $V_{GS(off)}$ | $V_{DS} = -10V, I_D = -1mA$                | -1.2    |       | -2.6     | V          |
| Forward Transfer Admittance                | $ y_{fs} $    | $V_{DS} = -10V, I_D = -6A$                 |         | 11    |          | S          |
| Static Drain-to-Source On-State Resistance | $R_{DS(on)1}$ | $I_D = -6A, V_{GS} = -10V$                 |         | 47    | 62       | m $\Omega$ |
|                                            | $R_{DS(on)2}$ | $I_D = -6A, V_{GS} = -4.5V$                |         | 62    | 87       | m $\Omega$ |
|                                            | $R_{DS(on)3}$ | $I_D = -6A, V_{GS} = -4V$                  |         | 68    | 96       | m $\Omega$ |
|                                            |               |                                            |         |       |          |            |
| Input Capacitance                          | $C_{iss}$     | $V_{DS} = -20V, f = 1MHz$                  |         | 1150  |          | pF         |
| Output Capacitance                         | $C_{oss}$     |                                            |         | 115   |          | pF         |
| Reverse Transfer Capacitance               | $C_{rss}$     |                                            |         | 95    |          | pF         |
| Turn-ON Delay Time                         | $t_d(on)$     |                                            |         | 10    |          | ns         |
| Rise Time                                  | $t_r$         | See specified Test Circuit.                |         | 37    |          | ns         |
| Turn-OFF Delay Time                        | $t_d(off)$    |                                            |         | 135   |          | ns         |
| Fall Time                                  | $t_f$         |                                            |         | 75    |          | ns         |
| Total Gate Charge                          | $Q_g$         |                                            |         | 26    |          | nC         |
| Gate-to-Source Charge                      | $Q_{gs}$      | $V_{DS} = -30V, V_{GS} = -10V, I_D = -12A$ |         | 3.5   |          | nC         |
| Gate-to-Drain "Miller" Charge              | $Q_{gd}$      |                                            |         | 5     |          | nC         |
| Diode Forward Voltage                      | $V_{SD}$      | $I_S = -12A, V_{GS} = 0V$                  |         | -0.95 | -1.2     | V          |

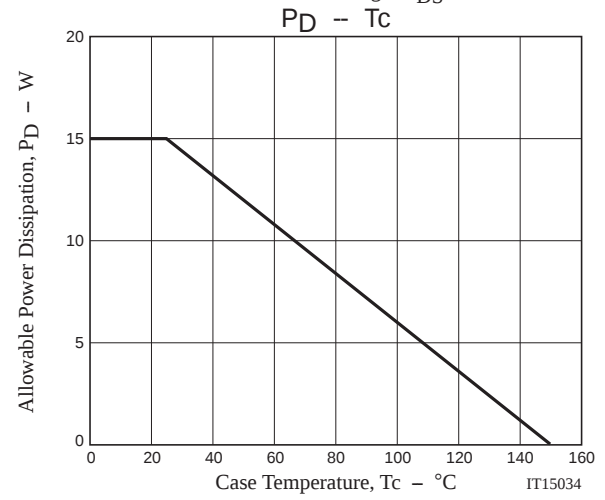
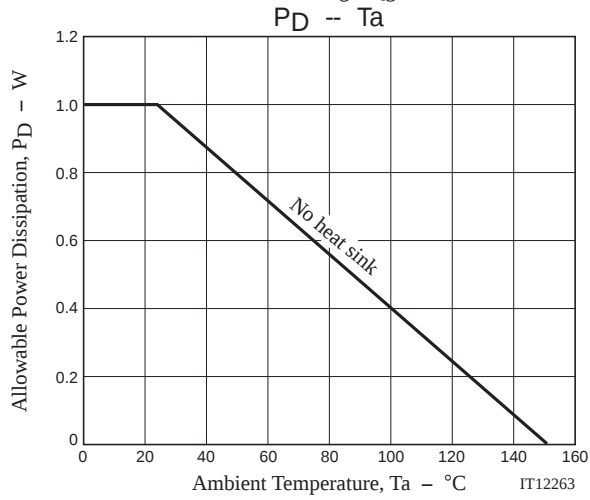
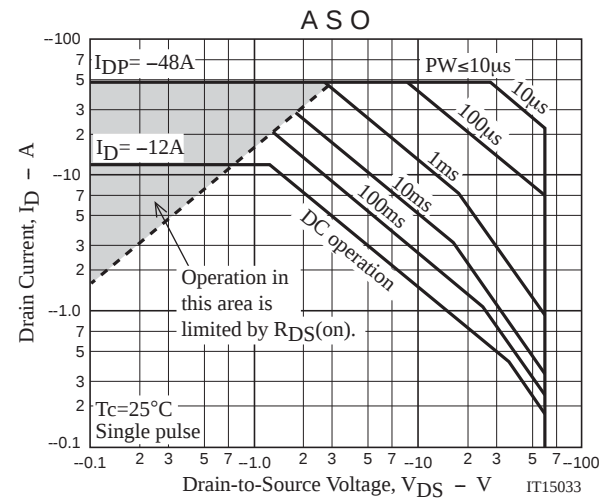
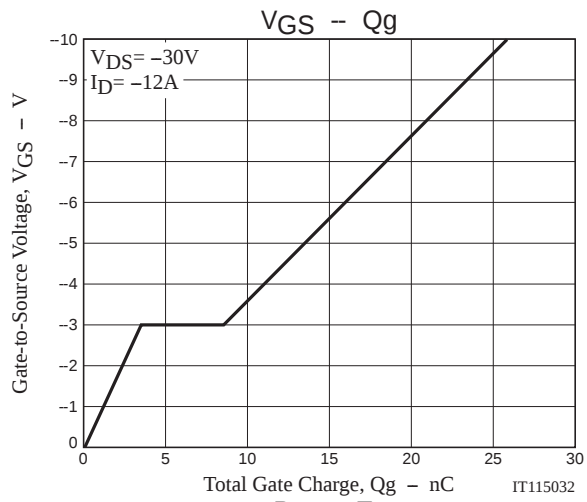
### Switching Time Test Circuit



### Ordering Information

| Device       | Package | Shipping     | memo    |
|--------------|---------|--------------|---------|
| SFT1342-E    | TP      | 500pcs./bag  | Pb Free |
| SFT1342-TL-E | TP-FA   | 700pcs./reel |         |





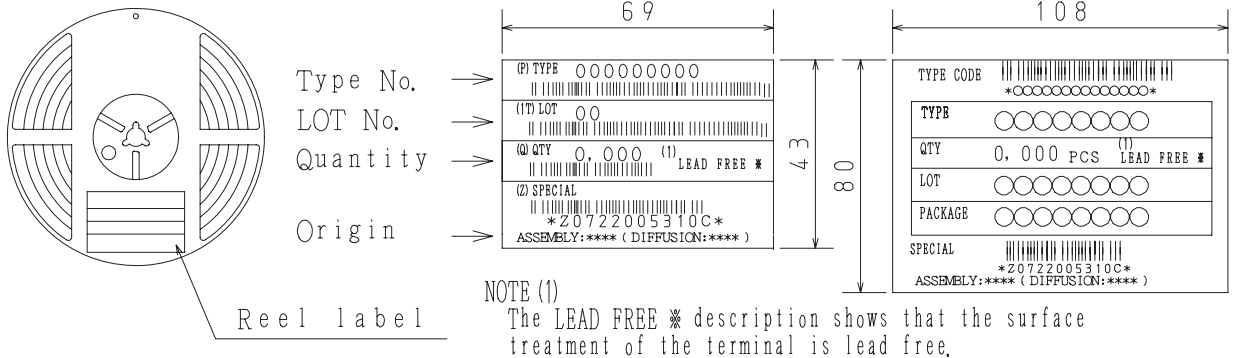
## Taping Specification

SFT1342-TL-E

## 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)                                                    |
| TP-FA        | TP                | 700                                       | 2, 100    | 12, 600   | 3 reels contained<br>Dimensions:mm (external)<br>183×72×185 | 6 inner boxes contained<br>Dimensions:mm (external)<br>440×195×210 |

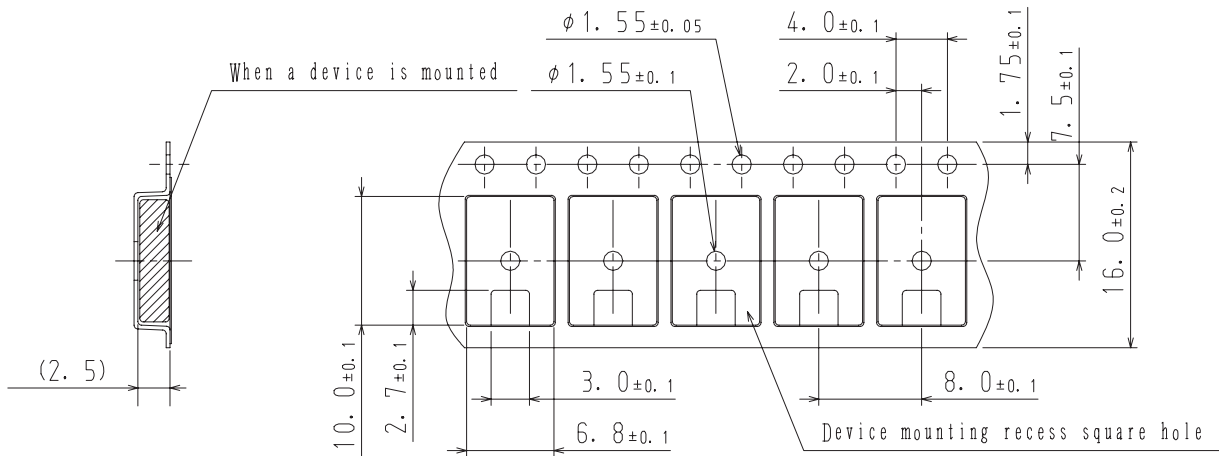
## Packing method



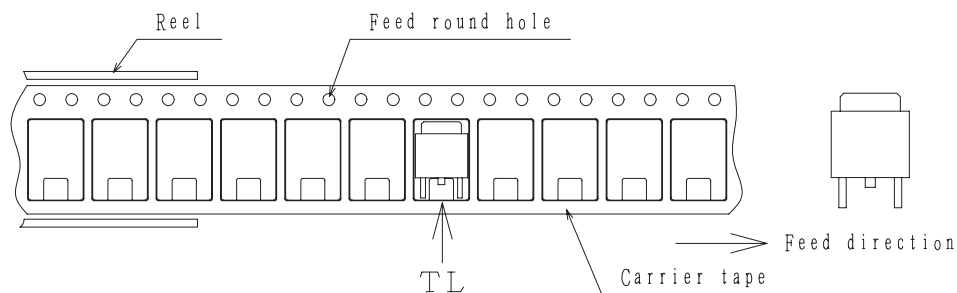
| Label       | JEITA Phase    |
|-------------|----------------|
| LEAD FREE 3 | JEITA Phase 3A |
| LEAD FREE 4 | JEITA Phase 3  |

## Taping configuration

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



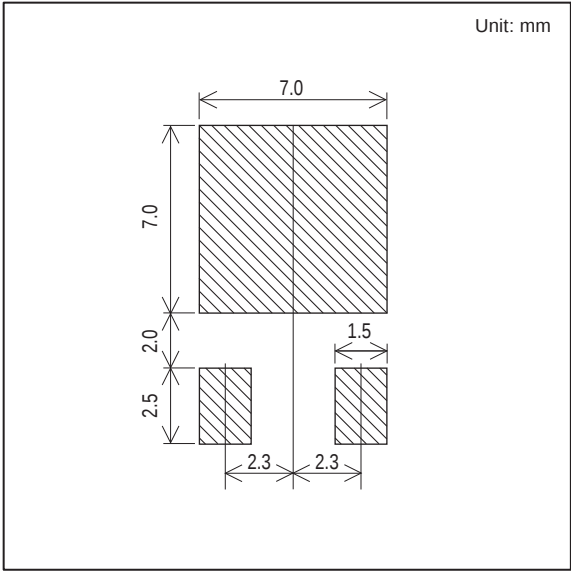
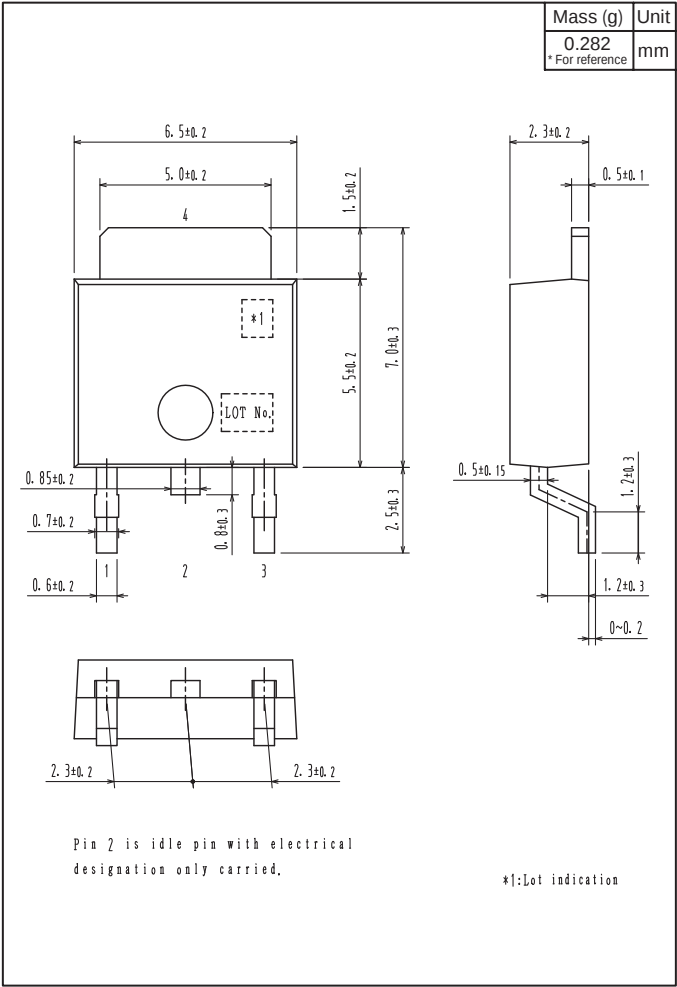
## 2. Device placement direction



Those with one electrode terminal on the feed hole side.....TL

Outline Drawing  
SFT1342-TL-E

Land Pattern Example

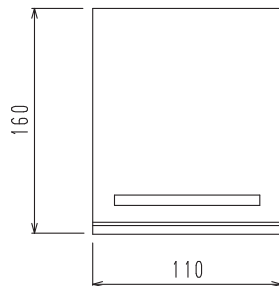
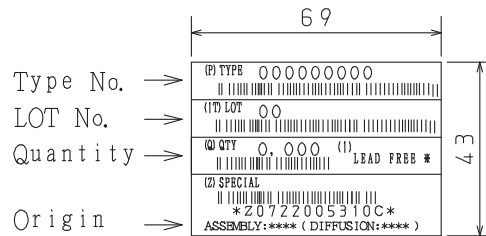


**Bag Packing Specification**

SFT1342-E

1. Packing Format

| Package Name | Maximum Number of devices contained (pcs) |                                           |             |             |
|--------------|-------------------------------------------|-------------------------------------------|-------------|-------------|
|              | Bag                                       | Inner box                                 | Outer box   |             |
| TP           | 500                                       | B-1                                       | A-1         | A-2         |
|              |                                           | 10, 000                                   | 50, 000     | 30, 000     |
|              |                                           | Packing format (Dimensions:mm (external)) |             |             |
|              |                                           | Inner box                                 | Outer box   |             |
|              |                                           | B-1                                       | A-1         | A-2         |
|              |                                           | 445×225×55                                | 470×250×300 | 470×250×190 |

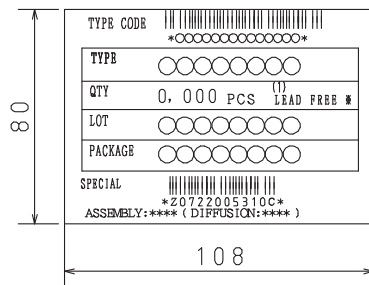
2. Bag dimensions  
(unit:mm)3. Bag label, Inner box label  
(unit:mm)4. Outer box label  
(unit:mm)

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

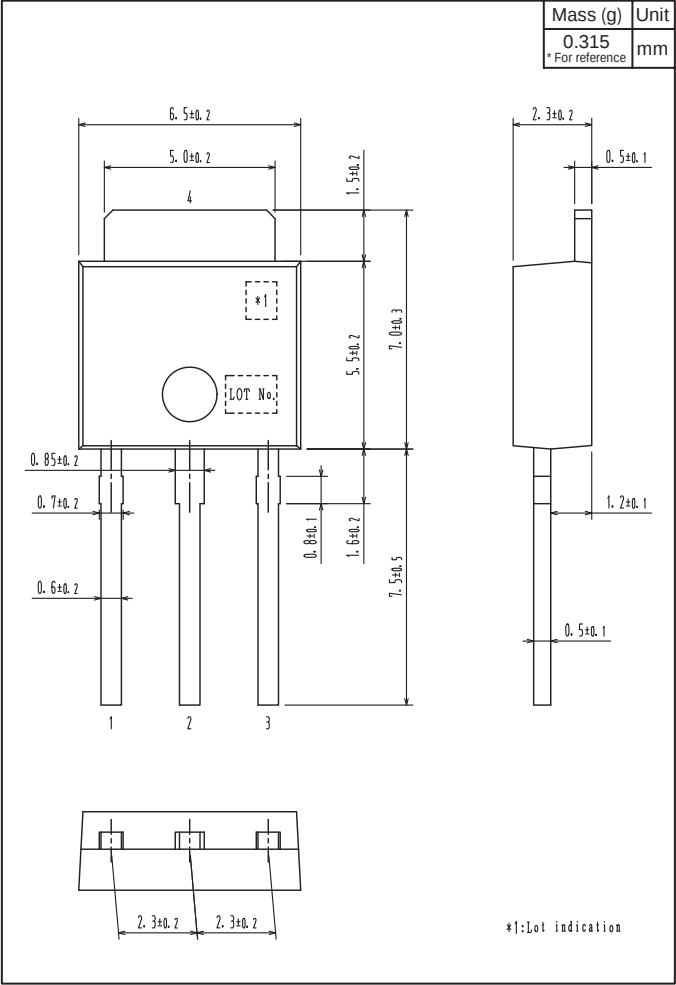
## NOTE (1)

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  |



Outline Drawing  
SFT1342-E



Note on usage : Since the SFT1342 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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