



# 2SC4134

## Bipolar Transistor

100V, 1A, Low  $V_{CE(sat)}$ , NPN Single TP/TP-FA

ON Semiconductor®

<http://onsemi.com>

### Applications

- Power supplies, relay drivers, lamp drivers

### Features

- Adoption FBET, MBIT processes
- Fast switching speed
- Small and slim package permitting 2SC4134-applied sets to be made more compact
- High breakdown voltage and large current capacity

### Specifications

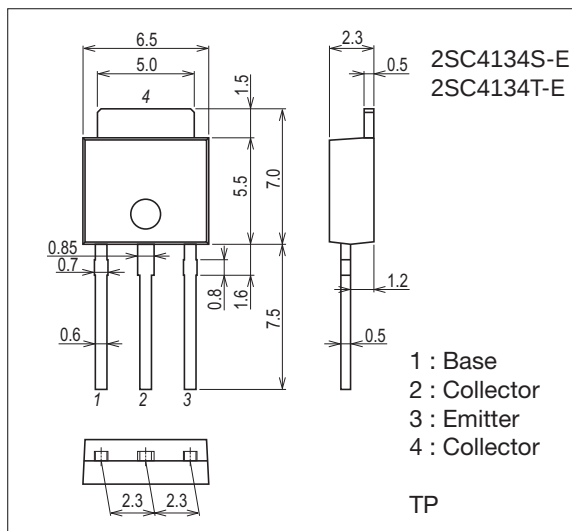
Absolute Maximum Ratings at  $T_a=25^\circ\text{C}$

| Parameter                    | Symbol    | Conditions | Ratings | Unit |
|------------------------------|-----------|------------|---------|------|
| Collector-to-Base Voltage    | $V_{CBO}$ |            | 120     | V    |
| Collector-to-Emitter Voltage | $V_{CEO}$ |            | 100     | V    |
| Emitter-to-Base Voltage      | $V_{EBO}$ |            | 6       | V    |
| Collector Current            | $I_C$     |            | 1       | A    |
| Collector Current (Pulse)    | $I_{CP}$  |            | 2       | A    |

Continued on next page.

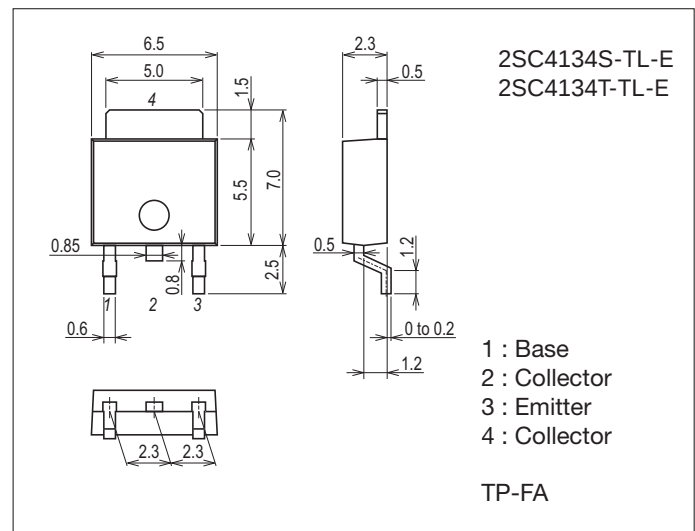
### Package Dimensions unit : mm (typ)

7518-003



### Package Dimensions unit : mm (typ)

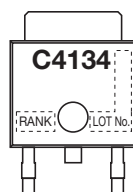
7003-003



### Product & Package Information

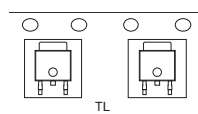
- Package : TP
- JEITA, JEDEC : SC-64, TO-251
- Minimum Packing Quantity : 500 pcs./bag

### Marking (TP, TP-FA)

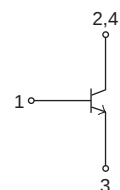


- Package : TP-FA
- JEITA, JEDEC : SC-63, TO-252
- Minimum Packing Quantity : 700 pcs./reel

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



### Electrical Connection



## 2SC4134

Continued from preceding page.

| Parameter             | Symbol           | Conditions           | Ratings     | Unit |
|-----------------------|------------------|----------------------|-------------|------|
| Collector Dissipation | P <sub>C</sub>   |                      | 0.8         | W    |
|                       |                  | T <sub>c</sub> =25°C | 10          | W    |
| Junction Temperature  | T <sub>j</sub>   |                      | 150         | °C   |
| Storage Temperature   | T <sub>stg</sub> |                      | -55 to +150 | °C   |

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

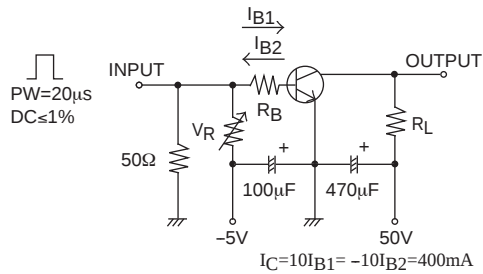
### Electrical Characteristics at T<sub>a</sub>=25°C

| Parameter                               | Symbol               | Conditions                                  | Ratings |      |      | Unit |
|-----------------------------------------|----------------------|---------------------------------------------|---------|------|------|------|
|                                         |                      |                                             | min     | typ  | max  |      |
| Collector Cutoff Current                | I <sub>CBO</sub>     | V <sub>CB</sub> =100V, I <sub>E</sub> =0A   |         |      | 100  | nA   |
| Emitter Cutoff Current                  | I <sub>EBO</sub>     | V <sub>EB</sub> =4V, I <sub>C</sub> =0A     |         |      | 100  | nA   |
| DC Current Gain                         | h <sub>FE</sub>      | V <sub>CE</sub> =5V, I <sub>C</sub> =100mA  | 100*    |      | 400* |      |
| Gain-Bandwidth Product                  | f <sub>T</sub>       | V <sub>CE</sub> =10V, I <sub>C</sub> =100mA |         | 120  |      | MHz  |
| Output Capacitance                      | C <sub>ob</sub>      | V <sub>CB</sub> =10V, f=1MHz                |         | 8.5  |      | pF   |
| Collector-to-Emitter Saturation Voltage | V <sub>CE(sat)</sub> | I <sub>C</sub> =400mA, I <sub>B</sub> =40mA |         | 0.1  | 0.4  | V    |
| Base-to-Emitter Saturation Voltage      | V <sub>BE(sat)</sub> | I <sub>C</sub> =400mA, I <sub>B</sub> =40mA |         | 0.85 | 1.2  | V    |
| Collector-to-Base Breakdown Voltage     | V <sub>(BR)CBO</sub> | I <sub>C</sub> =10μA, I <sub>E</sub> =0A    | 120     |      |      | V    |
| Collector-to-Emitter Breakdown Voltage  | V <sub>(BR)CEO</sub> | I <sub>C</sub> =1mA, R <sub>BE</sub> =∞     | 100     |      |      | V    |
| Emitter-to-Base Breakdown Voltage       | V <sub>(BR)EBO</sub> | I <sub>E</sub> =10μA, I <sub>C</sub> =0A    | 6       |      |      | V    |
| Turn-ON Time                            | t <sub>on</sub>      | See specified Test Circuit.                 |         | 80   |      | ns   |
| Storage Time                            | t <sub>stg</sub>     |                                             |         | 850  |      | ns   |
| Fall Time                               | t <sub>f</sub>       |                                             |         | 50   |      | ns   |

\* : The 2SC4134 is classified by 100mA h<sub>FE</sub> as follows :

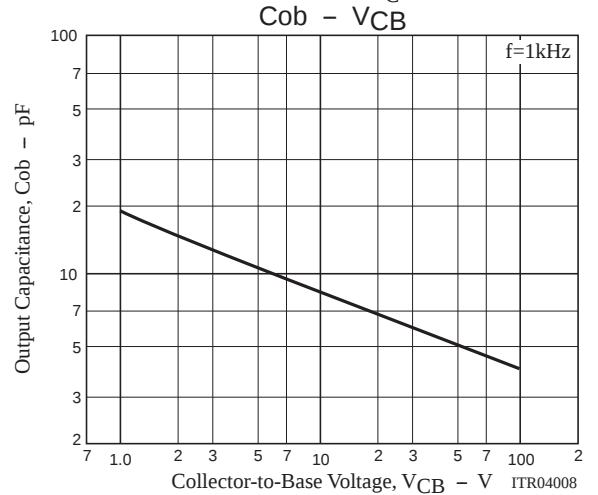
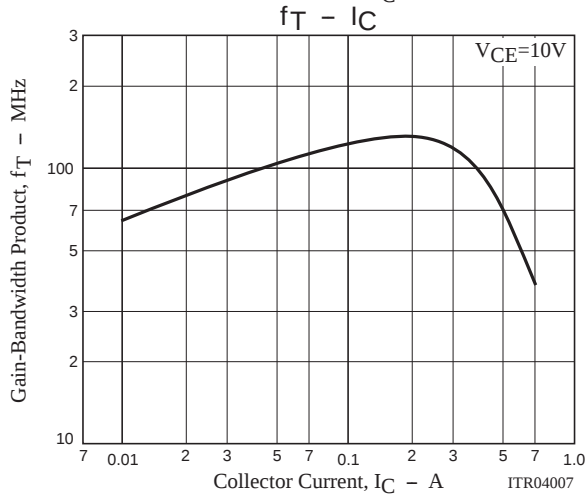
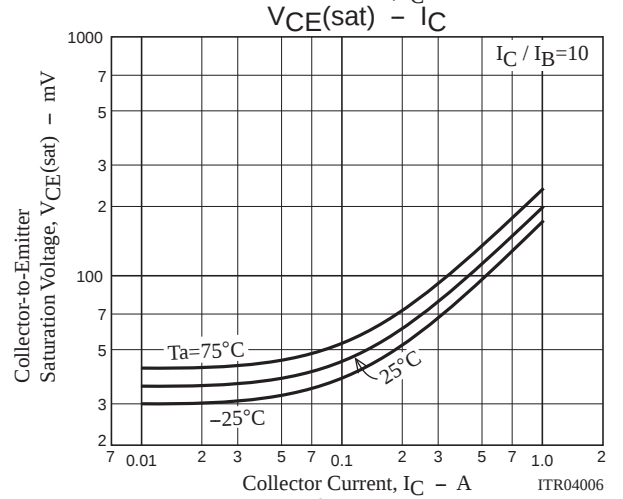
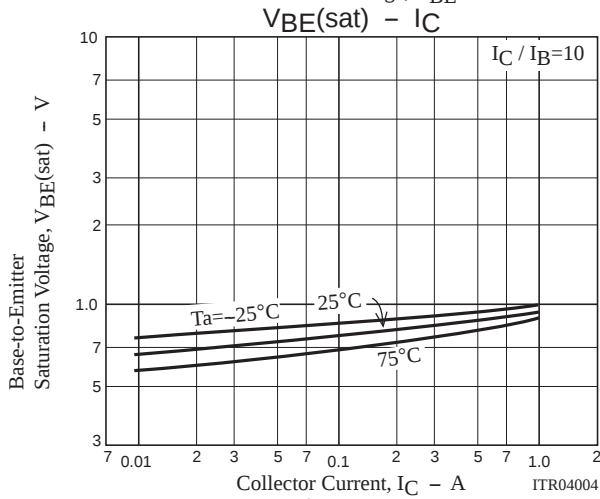
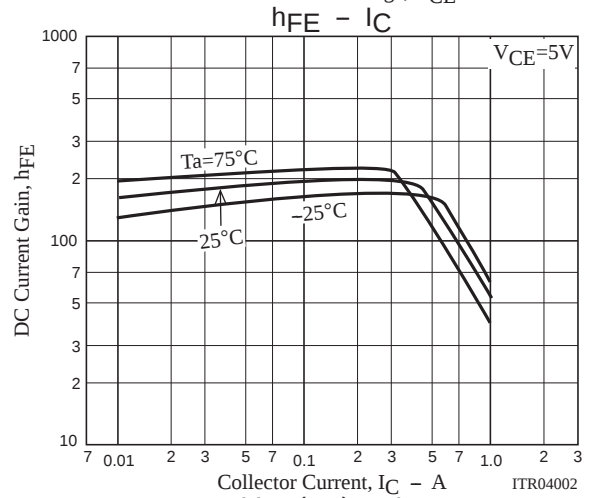
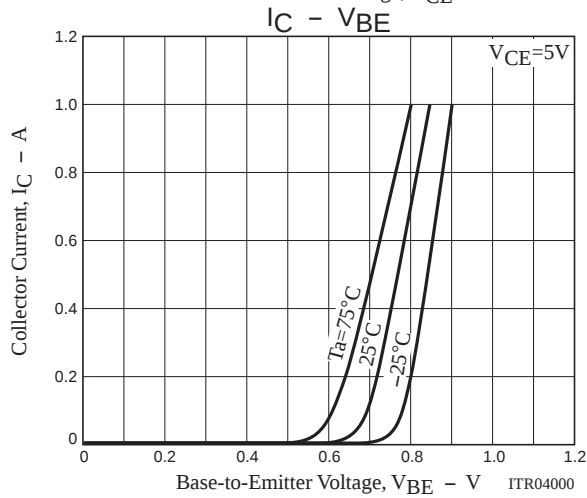
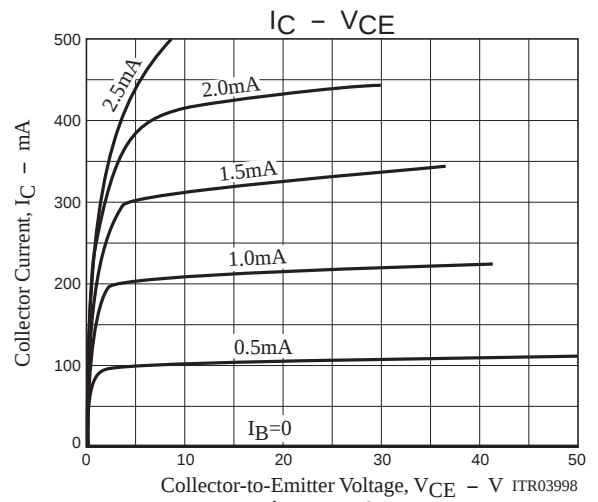
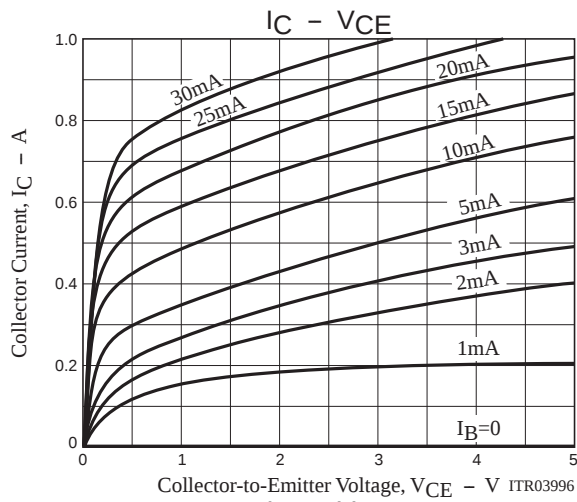
| Rank            | R          | S          | T          |
|-----------------|------------|------------|------------|
| h <sub>FE</sub> | 100 to 200 | 140 to 280 | 200 to 400 |

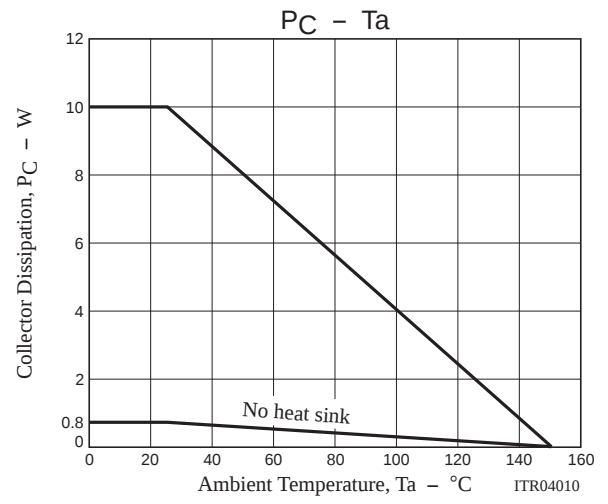
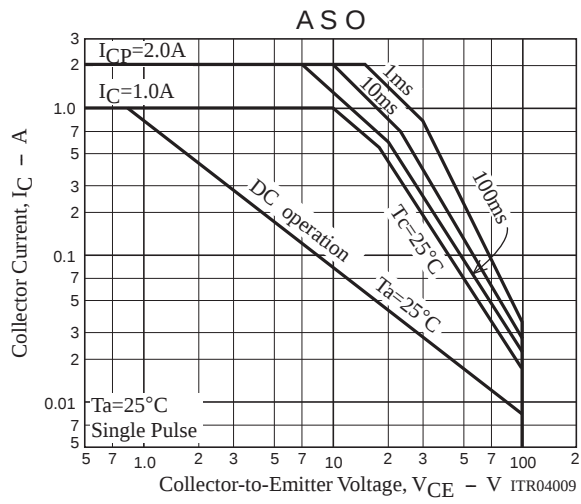
### Switching Time Test Circuit



### Ordering Information

| Device        | Package | Shipping     | memo    |
|---------------|---------|--------------|---------|
| 2SC4134S-E    | TP      | 500pcs./bag  | Pb Free |
| 2SC4134T-E    | TP      | 500pcs./bag  |         |
| 2SC4134S-TL-E | TP-FA   | 700pcs./reel |         |
| 2SC4134T-TL-E | TP-FA   | 700pcs./reel |         |





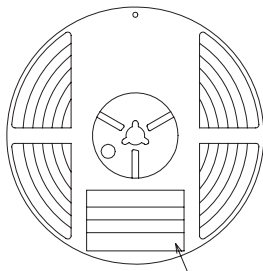
# Taping Specification

2SC4134S-TL-E, 2SC4134T-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



Reel label

Type No.  
LOT No.  
Quantity  
Origin

Reel label, Inner box label  
(unit:mm)

|                                |                       |
|--------------------------------|-----------------------|
| (P) TYPE                       | 00000000              |
| (1) LOT                        | 00                    |
| (Q) QTY                        | 0,000 (1) LEAD FREE * |
| (Z) SPECIAL                    | *20722005310C*        |
| ASSEMBLY:**** (DIFFUSION:****) |                       |

Outer box label

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

|                                |                           |
|--------------------------------|---------------------------|
| TYPE CODE                      |                           |
| TYPE                           | ○○○○○○○○                  |
| QTY                            | 0,000 PCS (1) LEAD FREE * |
| LOT                            | ○○○○○○○○                  |
| PACKAGE                        | ○○○○○○○○                  |
| SPECIAL                        |                           |
| ASSEMBLY:**** (DIFFUSION:****) |                           |

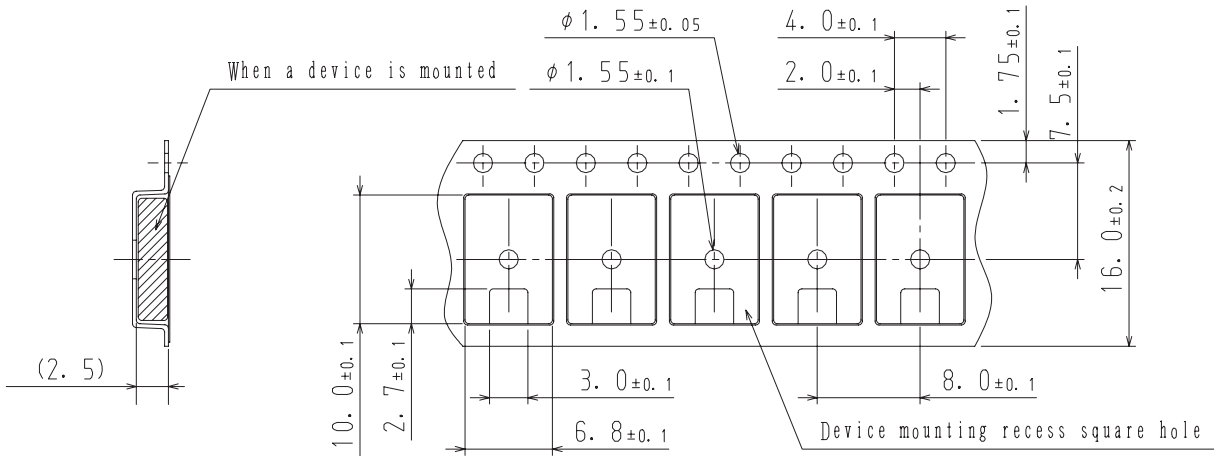
NOTE (1)

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

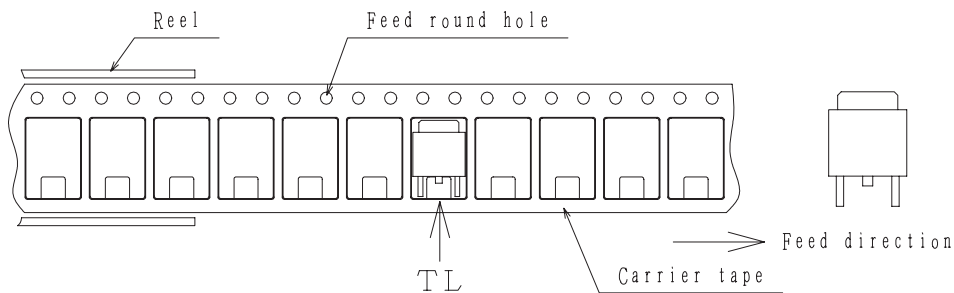
| Label       | JEITA Phase    |
|-------------|----------------|
| LEAD FREE 3 | JEITA Phase 3A |
| LEAD FREE 4 | JEITA Phase 3  |

## Taping configuration

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



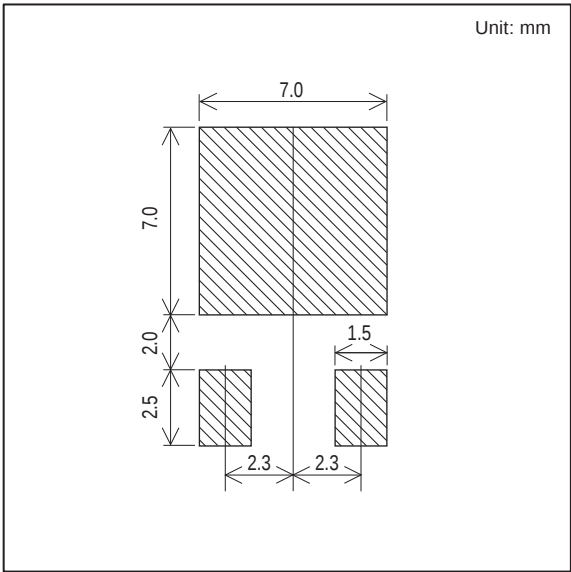
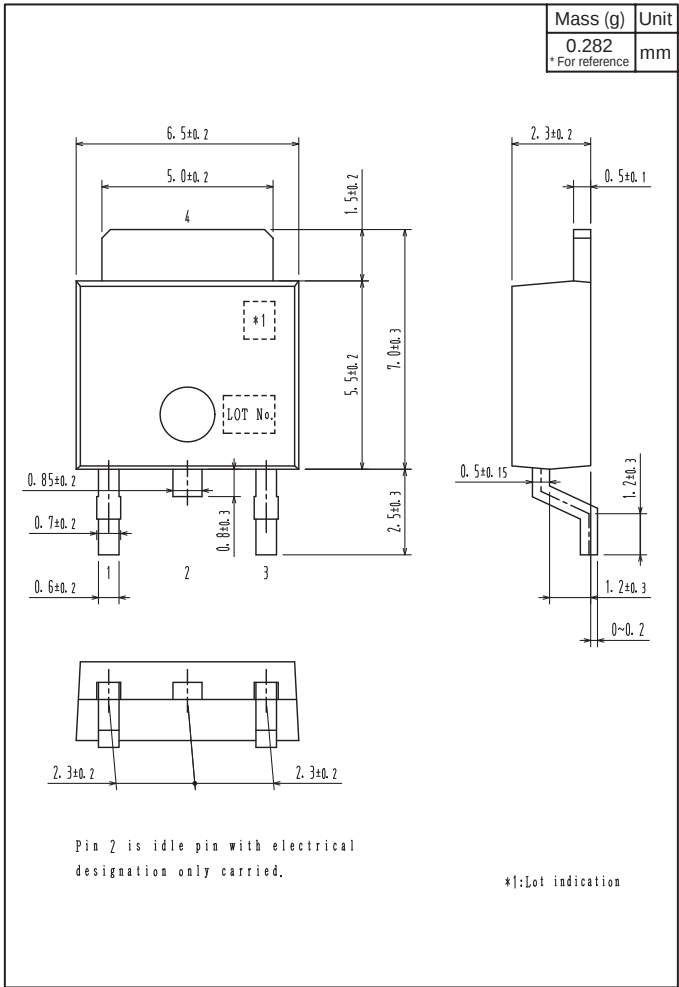
### 2. Device placement direction



Outline Drawing

2SC4134S-TL-E, 2SC4134T-TL-E

Land Pattern Example

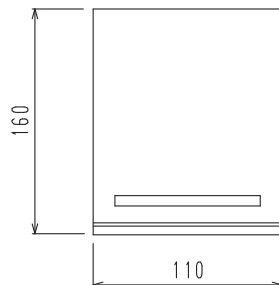


**Bag Packing Specification**

2SC4134S-E, 2SC4134T-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)

|            |                                                                 |    |
|------------|-----------------------------------------------------------------|----|
| Type No. → | (P) TYPE 0000000000                                             | 43 |
| LOT No. →  | (1) LOT 00                                                      |    |
| Quantity → | (Q) QTY 0,000 (1) LEAD FREE *                                   |    |
| Origin →   | (2) SPECIAL<br>*20722005310C*<br>ASSEMBLY:**** (DIFFUSION:****) |    |

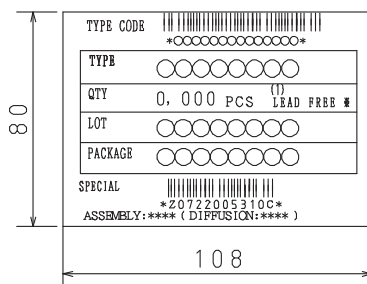
4. Outer box label  
(unit:mm)

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

## NOTE (1)

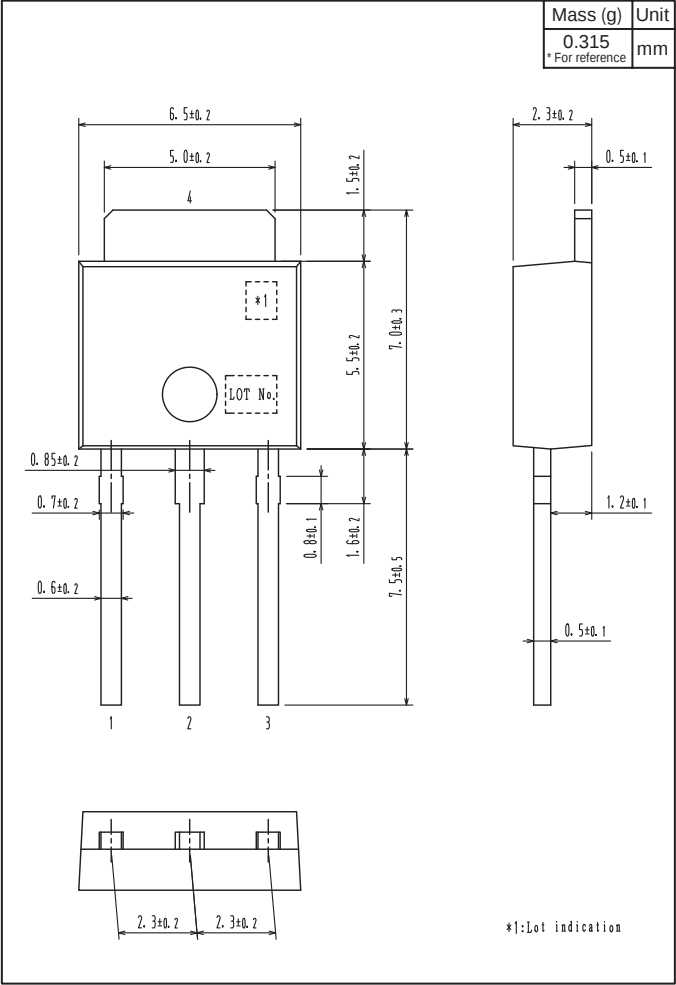
The LEAD FREE \* description shows that the  
surface treatment of the terminal is lead free.

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



Outline Drawing

2SC4134S-E, 2SC4134T-E



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