Ordering number : EN2510B

SANYO Semiconductors

# DATA SHEET

An ON Semiconductor Company

# 2SC4134 — NPN Epitaxial Planar Silicon Transistor
# High-Voltage Switching Applications

## 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

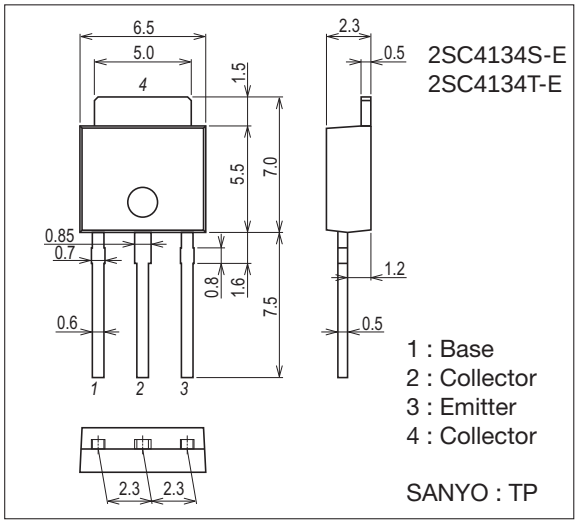
## Specifications

### Absolute Maximum Ratings at Ta=25°C

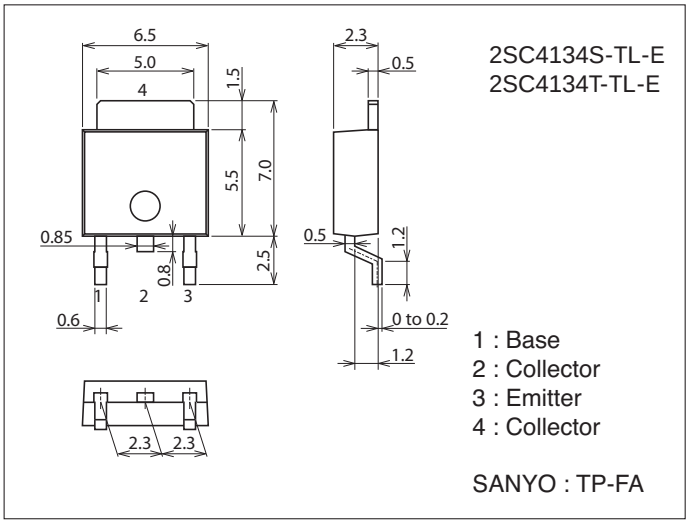
| Parameter | Symbol | Conditions | Ratings | Unit |
|---|---|---|---|---|
| Collector-to-Base Voltage | $V_{CBO}$ | | 120 | V |
| Collector-to-Emitter Voltage | $V_{CEO}$ | | 100 | V |
| Emitter-to-Base Voltage | $V_{EBO}$ | | 6 | V |
| Collector Current | $I_C$ | | 1 | A |
| Collector Current (Pulse)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

Continued on next page.

### Package Dimensions unit : mm (typ)
7518-003




### Package Dimensions unit : mm (typ)
7003-003

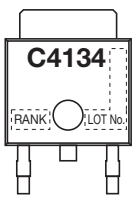



### Product & Package Information

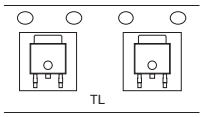
- Package : TP
- JEITA, JEDEC : SC-64, TO-251
- Minimum Packing Quantity : 500 pcs./bag

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

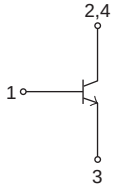
### Marking (TP, TP-FA)




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




### Electrical Connection



Continued from preceding page.

| Parameter | Symbol | Conditions | Ratings | Unit |
|---|---|---|---|---|
| Collector Dissipation | $P_C$ | | 0.8 | W |
| | | Tc=25°C | 10 | W |
| Junction Temperature | Tj | | 150 | °C |
| Storage Temperature | Tstg | | −55 to +150 | °C |

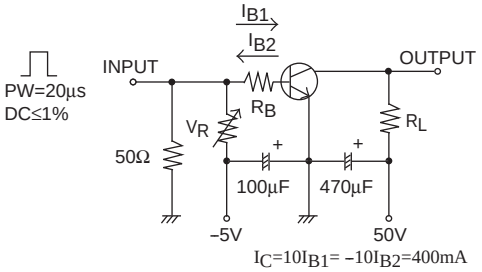
## Electrical Characteristics at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---|---|---|---|---|---|
| | | | min | typ | max | |
| Collector Cutoff Current | $I_{CBO}$ | $V_{CB}$=100V, $I_E$=0A | | | 100 | nA |
| Emitter Cutoff Current | $I_{EBO}$ | $V_{EB}$=4V, $I_C$=0A | | | 100 | nA |
| DC Current Gain | $h_{FE}$ | $V_{CE}$=5V, $I_C$=100mA | 100* | | 400* | |
| Gain-Bandwidth Product | $f_T$ | $V_{CE}$=10V, $I_C$=100mA | | 120 | | MHz |
| Output Capacitance | Cob | $V_{CB}$=10V, f=1MHz | | 8.5 | | pF |
| Collector-to-Emitter Saturation Voltage | $V_{CE}$(sat) | $I_C$=400mA, $I_B$=40mA | | 0.1 | 0.4 | V |
| Base-to-Emitter Saturation Voltage | $V_{BE}$(sat) | $I_C$=400mA, $I_B$=40mA | | 0.85 | 1.2 | V |
| Collector-to-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C$=10μA, $I_E$=0A | 120 | | | V |
| Collector-to-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C$=1mA, $R_{BE}$=∞ | 100 | | | V |
| Emitter-to-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E$=10μA, $I_C$=0A | 6 | | | V |
| Turn-ON Time | $t_{on}$ | See specified Test Circuit. | | 80 | | ns |
| Storage Time | $t_{stg}$ | | | 850 | | ns |
| Fall Time | $t_f$ | | | 50 | | ns |

* : The 2SC4134 is classified by 100mA $h_{FE}$ as follows :

| Rank | R | S | T |
|---|---|---|---|
| $h_{FE}$ | 100 to 200 | 140 to 280 | 200 to 400 |

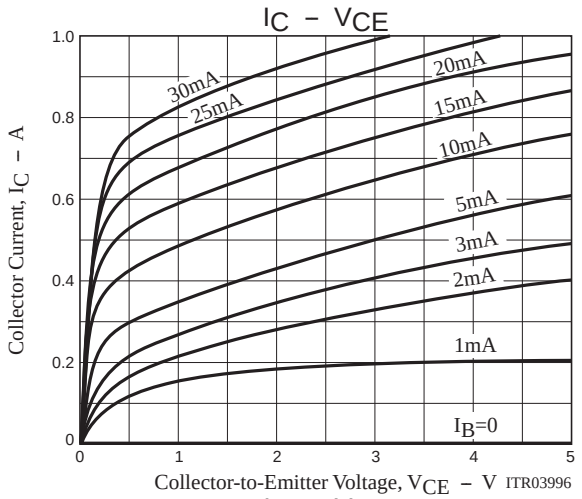
## Switching Time Test Circuit

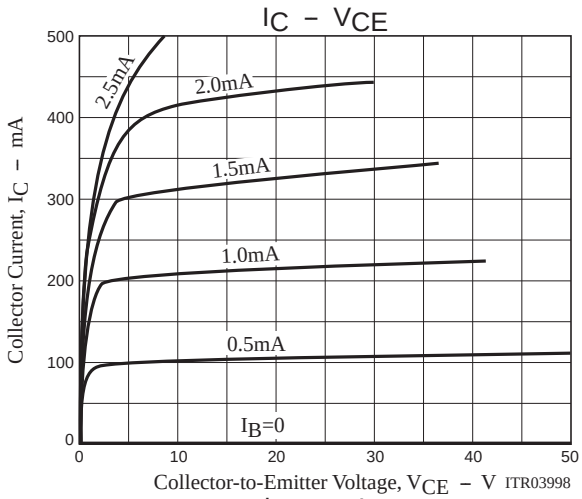


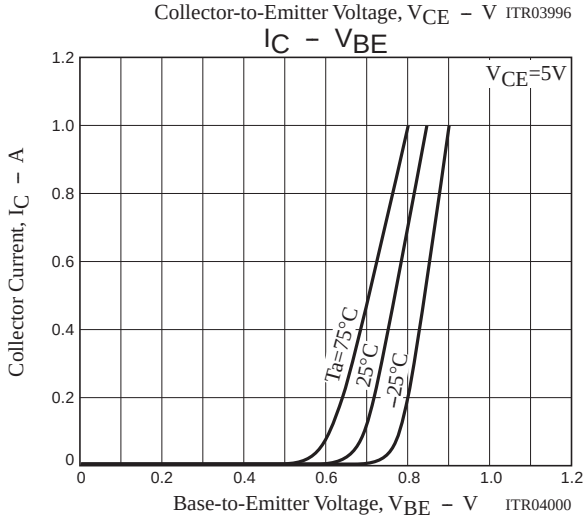

$I_C$=10$I_{B1}$= −10$I_{B2}$=400mA

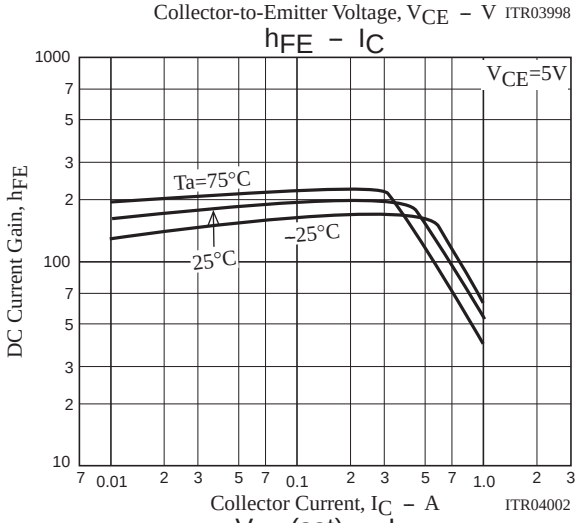
## Ordering Information

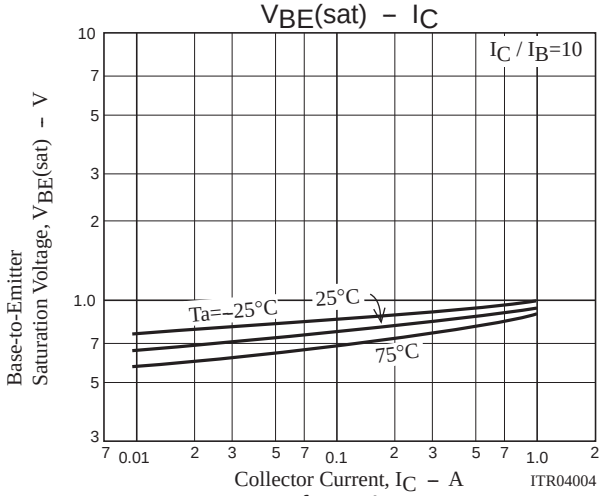
| Device | Package | Shipping | memo |
|---|---|---|---|
| 2SC4134S-E | TP | 500pcs./bag | Pb Free |
| 2SC4134T-E | TP | 500pcs./bag | |
| 2SC4134S-TL-E | TP-FA | 700pcs./reel | |
| 2SC4134T-TL-E | TP-FA | 700pcs./reel | |

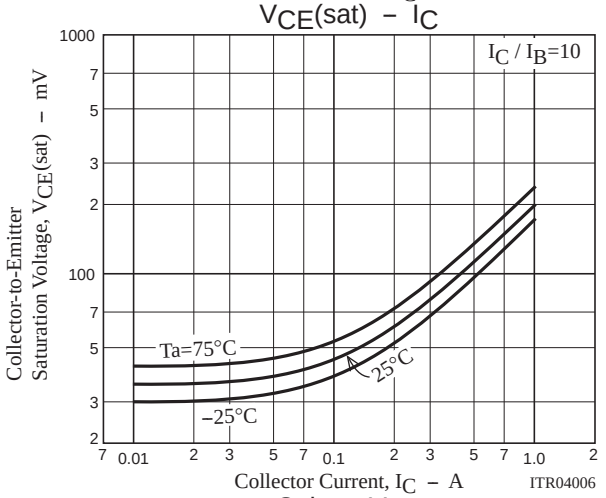

IC – VCE
Collector Current, IC – A
Collector-to-Emitter Voltage, VCE – V
ITR03996
30mA
25mA
20mA
15mA
10mA
5mA
3mA
2mA
1mA
IB=0

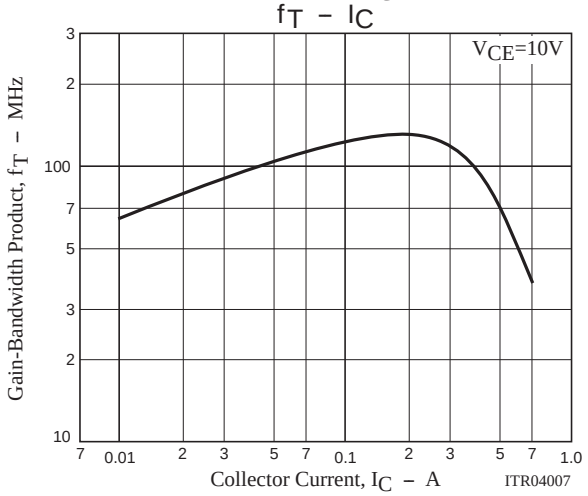

IC – VCE
Collector Current, IC – mA
Collector-to-Emitter Voltage, VCE – V
ITR03998
2.5mA
2.0mA
1.5mA
1.0mA
0.5mA
IB=0

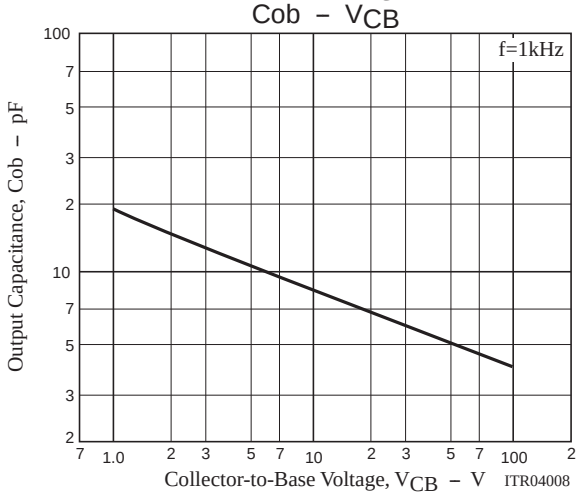

IC – VBE
VCE=5V
Collector Current, IC – A
Base-to-Emitter Voltage, VBE – V
ITR04000
Ta=75°C
25°C
–25°C

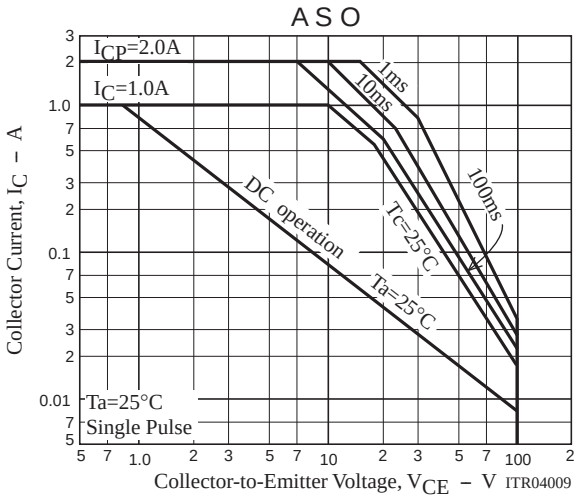

hFE – IC
VCE=5V
DC Current Gain, hFE
Collector Current, IC – A
ITR04002
Ta=75°C
25°C
–25°C

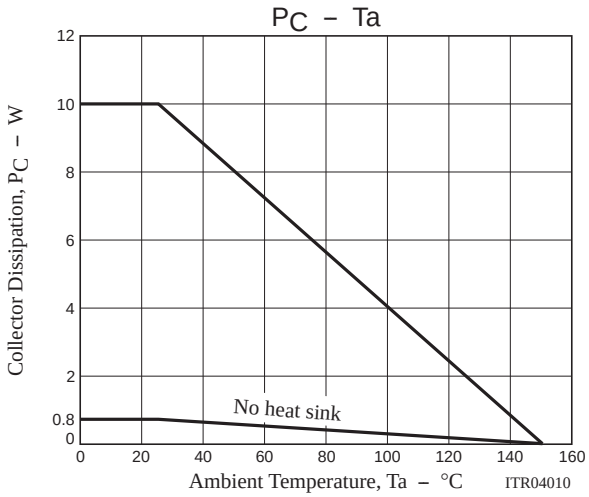

VBE(sat) – IC
IC / IB=10
Base-to-Emitter Saturation Voltage, VBE(sat) – V
Collector Current, IC – A
ITR04004
Ta=–25°C
25°C
75°C


VCE(sat) – IC
IC / IB=10
Collector-to-Emitter Saturation Voltage, VCE(sat) – mV
Collector Current, IC – A
ITR04006
Ta=75°C
25°C
–25°C


fT – IC
VCE=10V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – A
ITR04007


Cob – VCB
f=1kHz
Output Capacitance, Cob – pF
Collector-to-Base Voltage, VCB – V
ITR04008


A S O
$I_{CP}$=2.0A
$I_C$=1.0A
1ms
10ms
100ms
DC operation
Tc=25°C
Ta=25°C
Ta=25°C
Single Pulse
Collector Current, $I_C$ – A
Collector-to-Emitter Voltage, $V_{CE}$ – V
ITR04009


$P_C$ – Ta
No heat sink
Collector Dissipation, $P_C$ – W
Ambient Temperature, Ta – °C
ITR04010

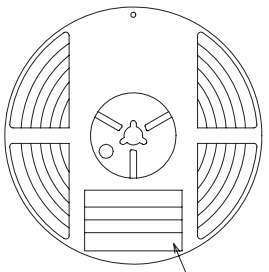
**Taping Specification**

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 |

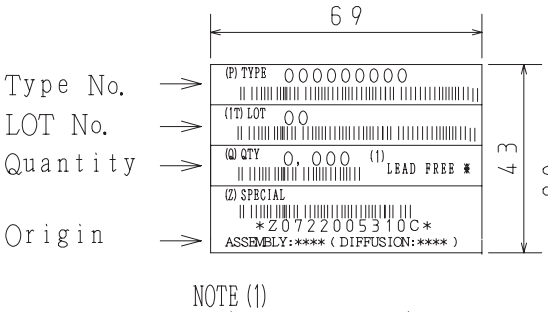
### Packing method



Reel label

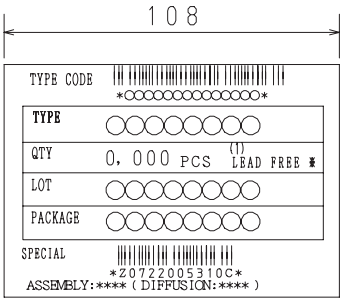
### Reel label, Inner box label

(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.

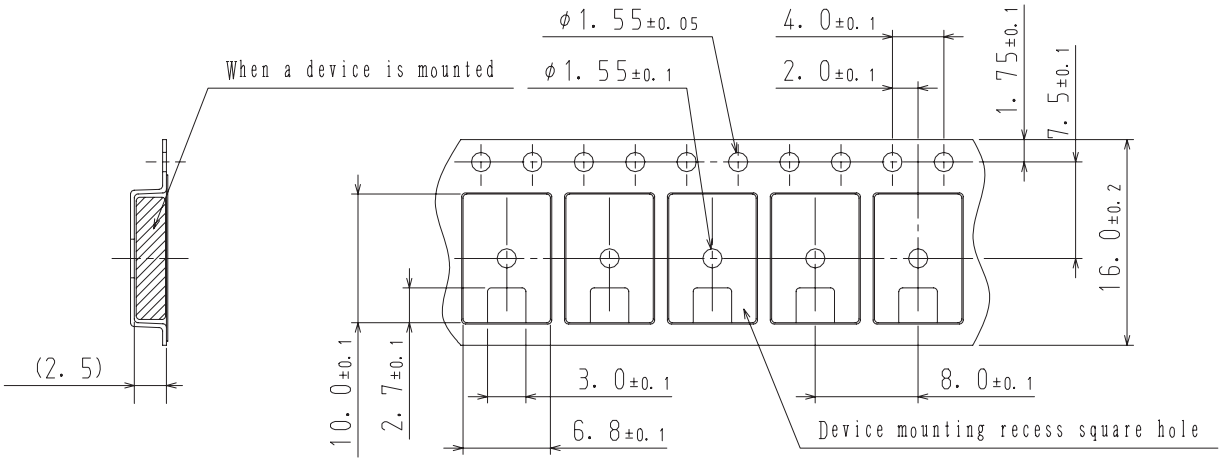



NOTE (1)
The LEAD FREE ※ description shows that the surface treatment of the terminal is lead free.

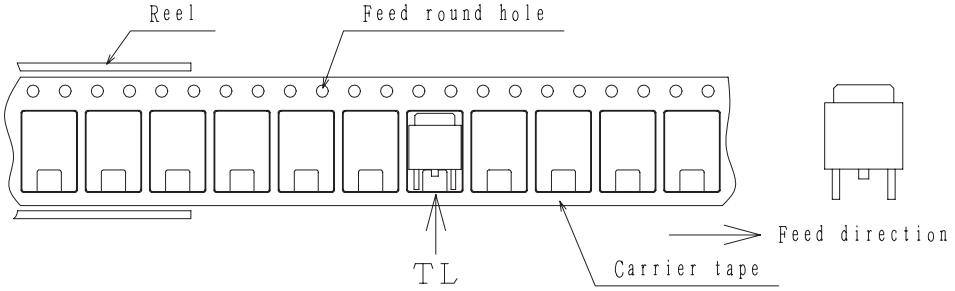
| Label | JEITA Phase |
|---|---|
| LEAD FREE 3 | JEITA Phase 3A |
| LEAD FREE 4 | JEITA Phase 3 |

## Taping configuration

1. Carrier tape size (unit:mm)



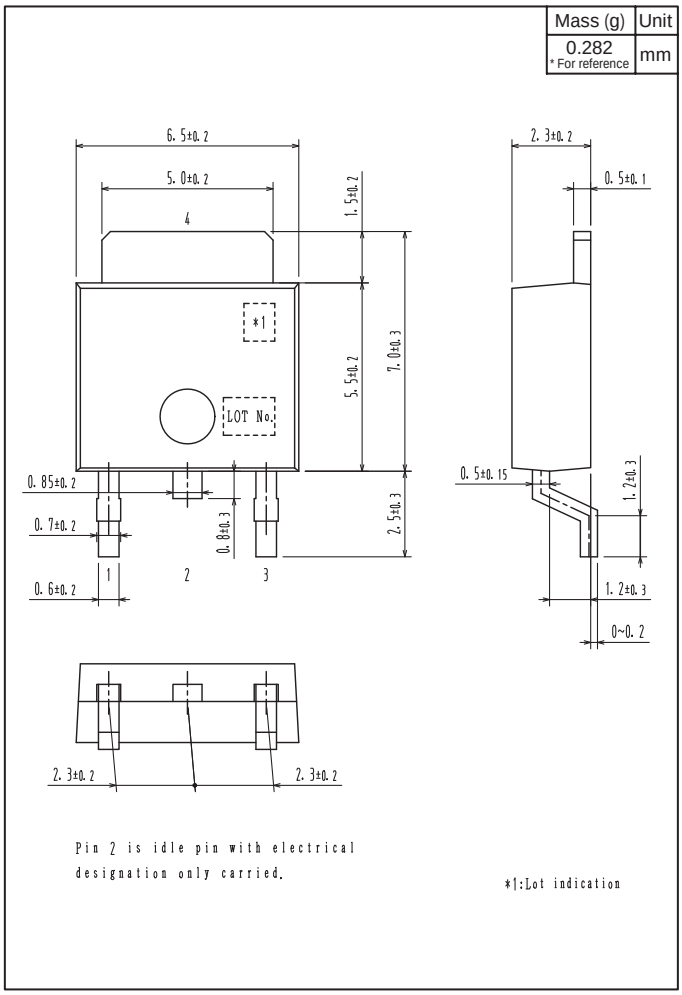

2. Device placement direction



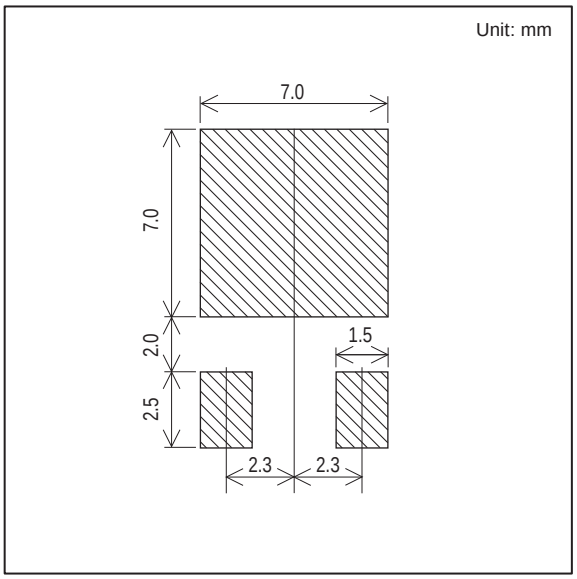

Those with one electrode terminal on the feed hole side·····TL

## Outline Drawing

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




## Land Pattern Example



**Bag Packing Specification**

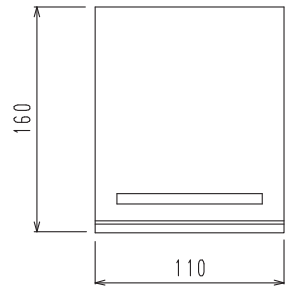
2SC4134S-E, 2SC4134T-E

## 1. Packing Format

| Package Name | Maximum Number of devices contained (pcs) | | | |
|---|---|---|---|---|
| | Bag | Inner box | Outer box | |
| TP | | B-1 | A-1 | A-2 |
| | 500 | 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 |

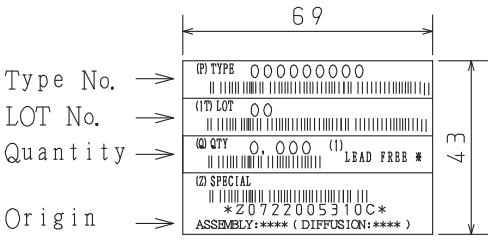
## 2. Bag dimensions

(unit: mm)




## 3. Bag label, Inner box label

(unit: mm)



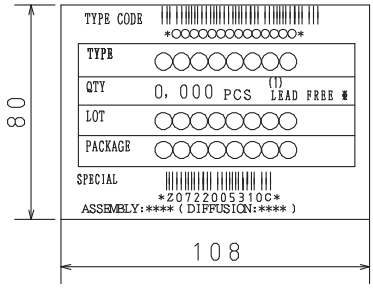

NOTE (1)
The LEAD FREE ※ description shows that the surface treatment of the terminal is lead free.

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

## 4. Outer box label

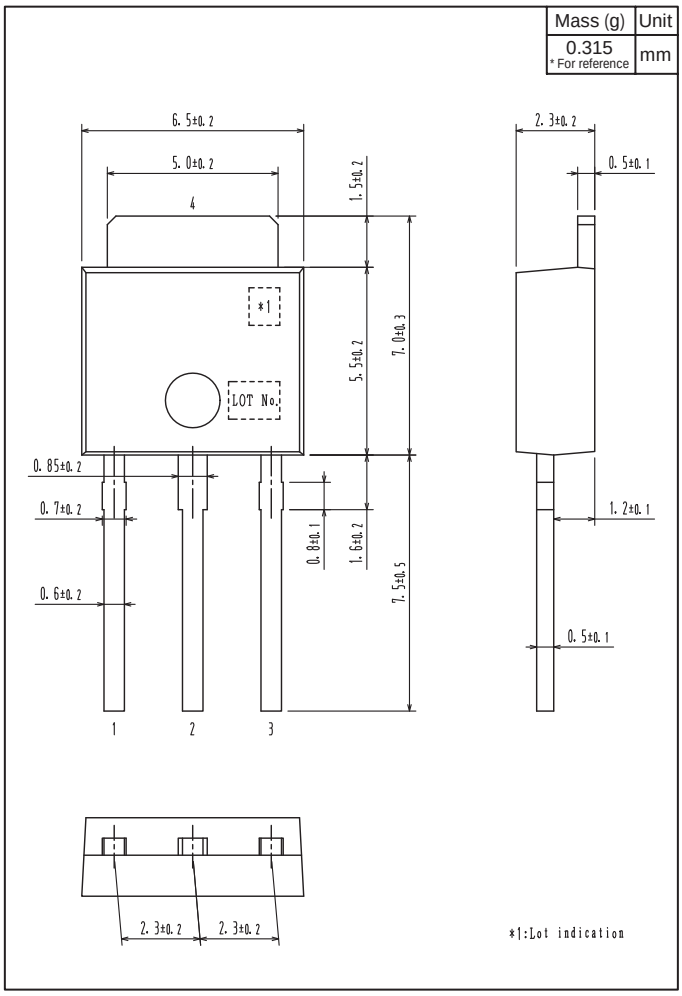
(unit: mm)

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



## Outline Drawing

2SC4134S-E, 2SC4134T-E



Стандарт Электрон Связь

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С нами вы становитесь еще успешнее!

**Наши контакты:**

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