



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

2SC5347A — NPN Epitaxial Planar Silicon Transistor High-Frequency Semi-Power Output Stage, Low-Noise Medium Output Amplifier Applications

Features

- High-frequency medium output amplification ($V_{CE}=5V, I_C=50mA$)
 - $f_T=4.7GHz$ typ ($f=1GHz$)
 - $|S_{21e}|^2=8dB$ typ ($f=1GHz$)
 - $NF=1.8dB$ typ ($f=1GHz$)

Specifications

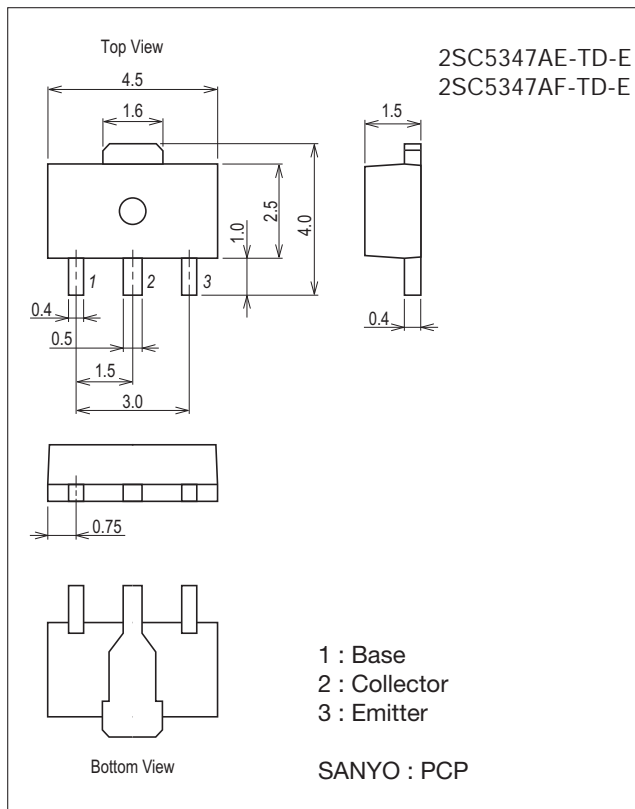
Absolute Maximum Ratings at $T_a=25^\circ C$

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|-----------|---|-------------|------|
| Collector-to-Base Voltage | V_{CBO} | | 20 | V |
| Collector-to-Emitter Voltage | V_{CEO} | | 12 | V |
| Emitter-to-Base Voltage | V_{EBO} | | 2 | V |
| Collector Current | I_C | | 150 | mA |
| Collector Dissipation | P_C | When mounted on ceramic substrate (900mm ² ×0.8mm) | 1.3 | W |
| Junction Temperature | T_J | | 150 | °C |
| Storage Temperature | T_{stg} | | -55 to +150 | °C |

Package Dimensions

unit : mm (typ)

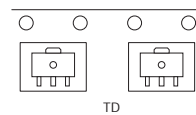
7007B-004



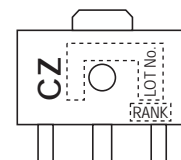
Product & Package Information

- Package : PCP
- JEITA, JEDEC : SC-62, SOT-89, TO-243
- Minimum Packing Quantity : 1,000 pcs./reel

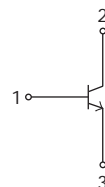
Packing Type: TD



Marking



Electrical Connection



2SC5347A

Electrical Characteristics at Ta=25°C

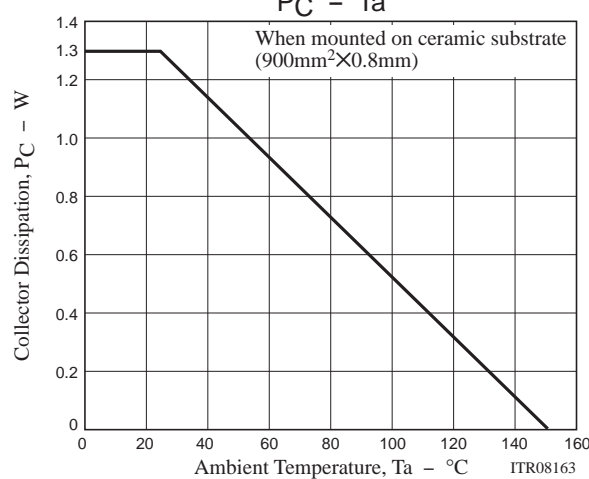
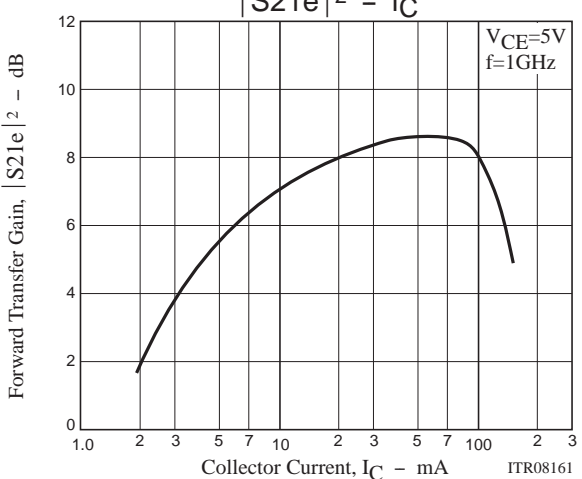
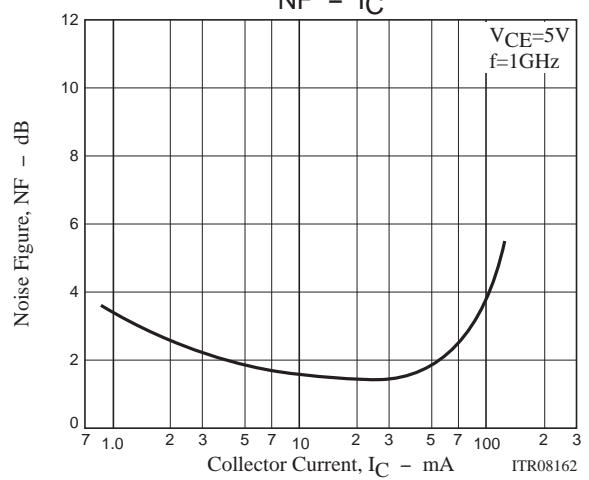
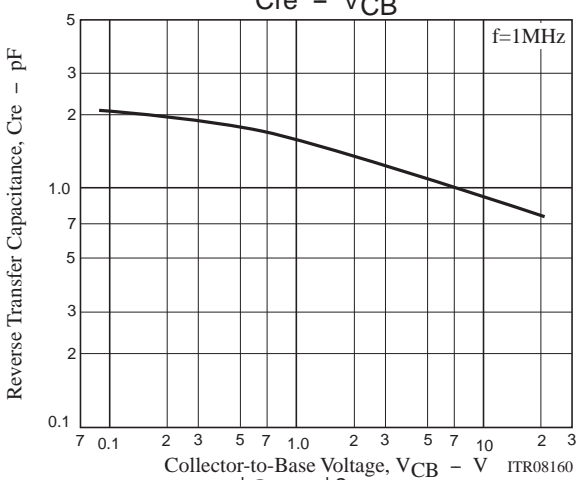
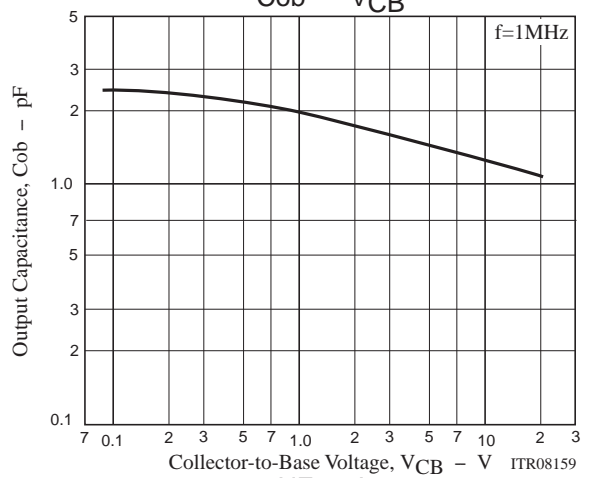
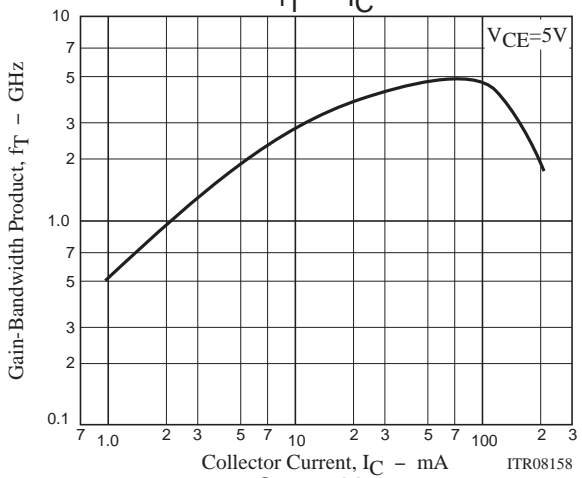
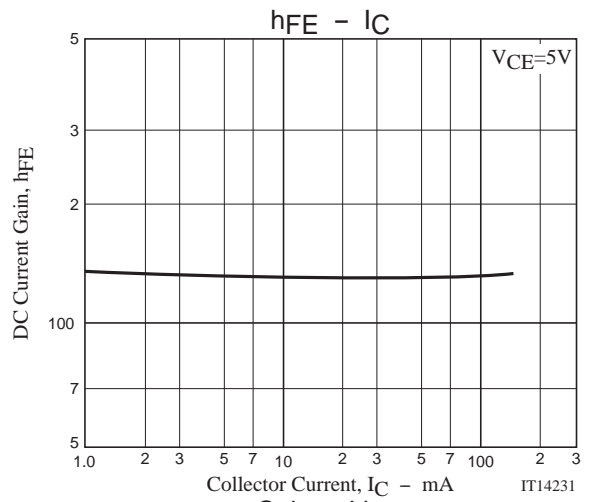
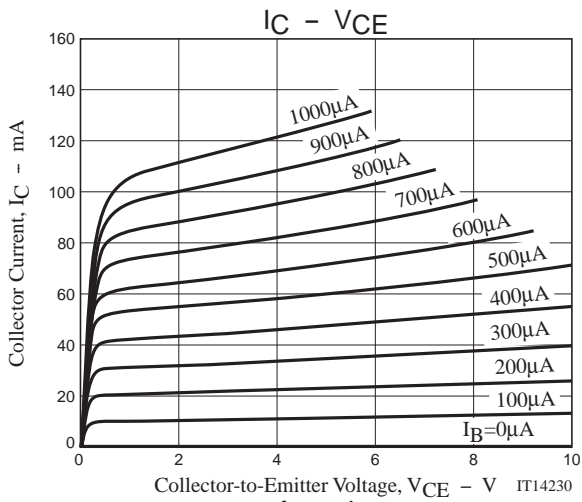
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|------------------------------|---------------------------------|---|---------|-----|------|------|
| | | | min | typ | max | |
| Collector Cutoff Current | ICBO | V _{CB} =10V, I _E =0A | | | 1.0 | μA |
| Emitter Cutoff Current | IEBO | V _{EB} =1V, I _C =0A | | | 10 | μA |
| DC Current Gain | h _{FE} | V _{CE} =5V, I _C =50mA | 60* | | 270* | |
| Gain-Bandwidth Product | f _T | V _{CE} =5V, I _C =50mA | 3 | 4.7 | | GHz |
| Output Capacitance | Cob | V _{CB} =10V, f=1MHz | | 1.3 | 2.0 | pF |
| Reverse Transfer Capacitance | Cre | | | | 0.9 | |
| Forward Transfer Gain | S _{21e} ² | V _{CE} =5V, I _C =50mA, f=1GHz | 6 | 8 | | dB |
| Noise Figure | NF | V _{CE} =5V, I _C =50mA, f=1GHz | | 1.8 | 3.0 | dB |

* : The 2SC5347A is classified by 50mA h_{FE} as follows :

| Rank | D | E | F |
|-----------------|-----------|-----------|------------|
| h _{FE} | 60 to 120 | 90 to 180 | 135 to 270 |

Ordering Information

| Device | Package | Shipping | memo |
|----------------|---------|----------------|---------|
| 2SC5347AE-TD-E | PCP | 1,000pcs./reel | Pb Free |
| 2SC5347AF-TD-E | PCP | 1,000pcs./reel | |

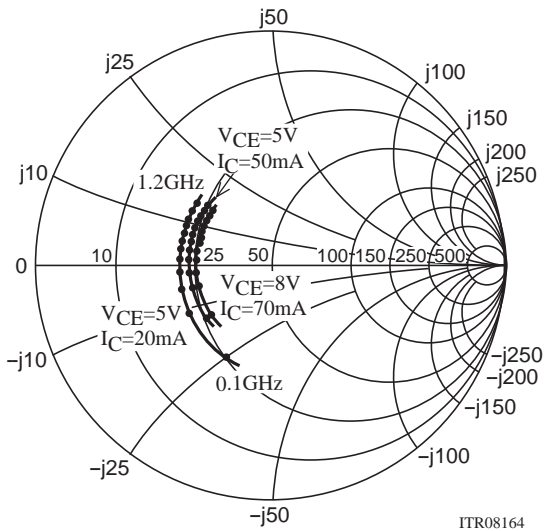


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S Parameter

S11e

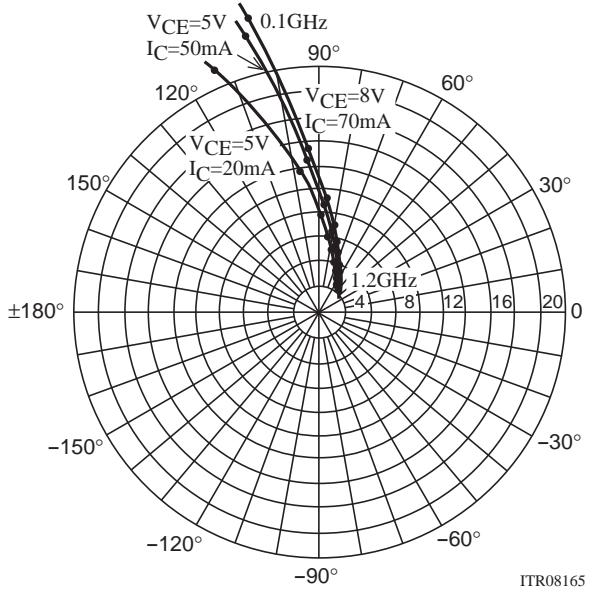
f=100MHz to 1200MHz(100MHz Step)



ITR08164

S21e

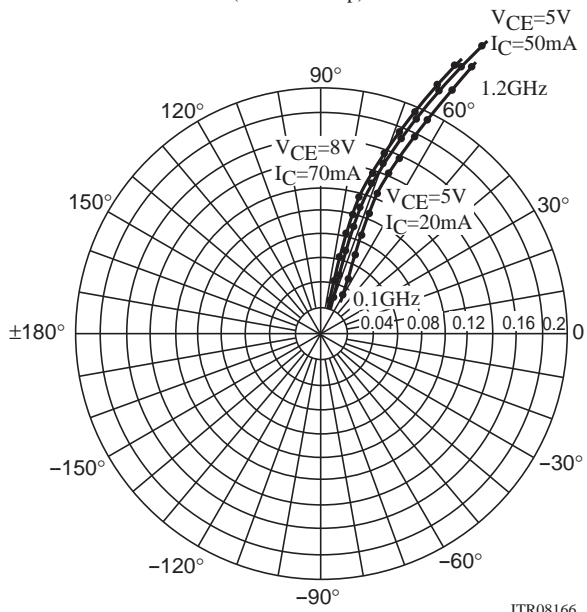
f=100MHz to 1200MHz(100MHz Step)



ITR08165

S12e

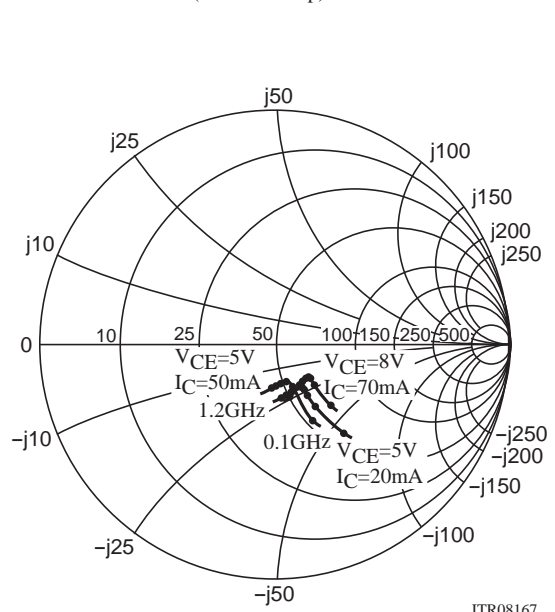
f=100MHz to 1200MHz(100MHz Step)



ITR08166

S22e

f=100MHz to 1200MHz(100MHz Step)



ITR08167

2SC5347A

S Parameters (Common emitter)

$V_{CE}=5V, I_C=50mA, Z_O=50\Omega$

| Freq(MHz) | S11 | $\angle S11$ | S21 | $\angle S21$ | S12 | $\angle S12$ | S22 | $\angle S22$ |
|-----------|-------|--------------|--------|--------------|-------|--------------|-------|--------------|
| 100 | 0.358 | -141.0 | 24.005 | 105.9 | 0.027 | 68.4 | 0.342 | -63.0 |
| 200 | 0.354 | -165.7 | 12.593 | 93.3 | 0.047 | 72.7 | 0.205 | -68.4 |
| 300 | 0.355 | -176.8 | 8.532 | 86.8 | 0.068 | 74.1 | 0.166 | -69.7 |
| 400 | 0.359 | 174.9 | 6.428 | 81.9 | 0.089 | 73.7 | 0.149 | -72.3 |
| 500 | 0.359 | 169.3 | 5.293 | 77.6 | 0.110 | 72.8 | 0.145 | -75.3 |
| 600 | 0.362 | 163.9 | 4.360 | 73.5 | 0.130 | 71.7 | 0.143 | -78.6 |
| 700 | 0.366 | 158.5 | 3.774 | 69.9 | 0.151 | 70.2 | 0.147 | -82.1 |
| 800 | 0.364 | 153.5 | 3.334 | 66.4 | 0.171 | 68.6 | 0.151 | -85.6 |
| 900 | 0.368 | 149.8 | 2.995 | 62.9 | 0.191 | 66.7 | 0.158 | -90.1 |
| 1000 | 0.370 | 145.3 | 2.725 | 59.4 | 0.210 | 65.1 | 0.166 | -92.3 |
| 1100 | 0.373 | 141.5 | 2.494 | 56.5 | 0.230 | 63.0 | 0.170 | -95.1 |
| 1200 | 0.377 | 137.6 | 2.307 | 53.0 | 0.248 | 61.4 | 0.177 | -97.8 |

$V_{CE}=5V, I_C=20mA, Z_O=50\Omega$

| Freq(MHz) | S11 | $\angle S11$ | S21 | $\angle S21$ | S12 | $\angle S12$ | S22 | $\angle S22$ |
|-----------|-------|--------------|--------|--------------|-------|--------------|-------|--------------|
| 100 | 0.445 | -115.4 | 21.095 | 113.8 | 0.032 | 59.7 | 0.479 | -52.4 |
| 200 | 0.400 | -149.6 | 11.567 | 97.4 | 0.049 | 63.4 | 0.300 | -58.0 |
| 300 | 0.394 | -165.7 | 7.917 | 89.3 | 0.066 | 67.0 | 0.242 | -58.8 |
| 400 | 0.391 | -176.5 | 5.974 | 82.5 | 0.085 | 68.5 | 0.214 | -60.0 |
| 500 | 0.391 | 176.7 | 4.845 | 78.4 | 0.103 | 68.8 | 0.203 | -62.2 |
| 600 | 0.392 | 169.4 | 4.065 | 73.9 | 0.122 | 68.6 | 0.199 | -64.7 |
| 700 | 0.393 | 163.8 | 3.522 | 70.0 | 0.141 | 67.8 | 0.198 | -67.9 |
| 800 | 0.394 | 158.4 | 3.114 | 66.4 | 0.159 | 67.1 | 0.201 | -71.2 |
| 900 | 0.396 | 154.1 | 2.798 | 62.5 | 0.178 | 65.7 | 0.204 | -74.7 |
| 1000 | 0.399 | 149.3 | 2.548 | 58.9 | 0.196 | 64.5 | 0.212 | -78.1 |
| 1100 | 0.403 | 144.9 | 2.333 | 55.5 | 0.215 | 62.9 | 0.218 | -81.4 |
| 1200 | 0.408 | 141.0 | 2.158 | 51.8 | 0.233 | 61.8 | 0.224 | -84.1 |

$V_{CE}=8V, I_C=70mA, Z_O=50\Omega$

| Freq(MHz) | S11 | $\angle S11$ | S21 | $\angle S21$ | S12 | $\angle S12$ | S22 | $\angle S22$ |
|-----------|-------|--------------|--------|--------------|-------|--------------|-------|--------------|
| 100 | 0.328 | -141.2 | 25.505 | 105.1 | 0.024 | 70.5 | 0.348 | -50.8 |
| 200 | 0.323 | -165.7 | 13.334 | 93.0 | 0.043 | 75.0 | 0.233 | -48.9 |
| 300 | 0.323 | -176.6 | 9.025 | 86.7 | 0.062 | 75.8 | 0.204 | -47.0 |
| 400 | 0.326 | 175.1 | 6.819 | 81.8 | 0.081 | 75.5 | 0.191 | -48.0 |
| 500 | 0.325 | 169.5 | 5.481 | 77.8 | 0.100 | 74.5 | 0.187 | -50.5 |
| 600 | 0.328 | 163.6 | 4.612 | 73.7 | 0.119 | 73.4 | 0.185 | -53.6 |
| 700 | 0.330 | 158.4 | 3.980 | 70.2 | 0.139 | 71.8 | 0.188 | -57.3 |
| 800 | 0.333 | 153.5 | 3.524 | 66.7 | 0.157 | 70.4 | 0.191 | -60.9 |
| 900 | 0.335 | 150.0 | 3.148 | 63.3 | 0.177 | 68.5 | 0.198 | -65.1 |
| 1000 | 0.341 | 144.7 | 2.866 | 60.0 | 0.194 | 67.1 | 0.204 | -69.0 |
| 1100 | 0.345 | 141.2 | 2.629 | 57.0 | 0.213 | 65.1 | 0.208 | -72.1 |
| 1200 | 0.348 | 138.0 | 2.424 | 53.4 | 0.230 | 62.6 | 0.215 | -75.3 |

2SC5347A

Embossed Taping Specification

2SC5347AE-TD-E, 2SC5347AF-TD-E

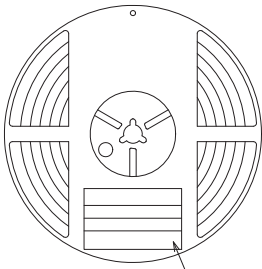
1. Packing Format

| 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) |
| PCP | PCP | 1,000 | 4,000 | 24,000 | 4 reels contained Dimensions:mm (external) 183×72×185 | 6 inner boxes contained Dimensions:mm (external) 440×195×210 |

Reel label, Inner box label
(unit : mm)

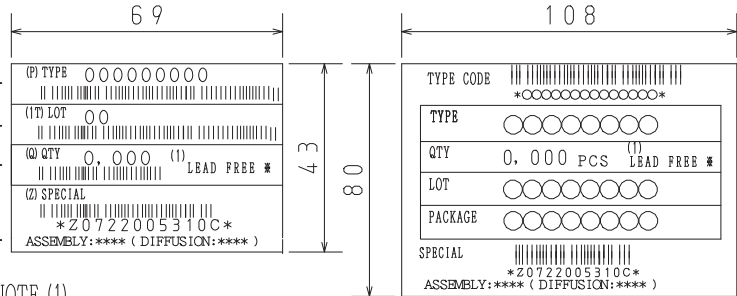
Outer box label
It is a label at the time of factory shipments.
The form of a label may change in physical distribution process.

Packing method



Type No.
LOT No.
Quantity
Origin

Reel label



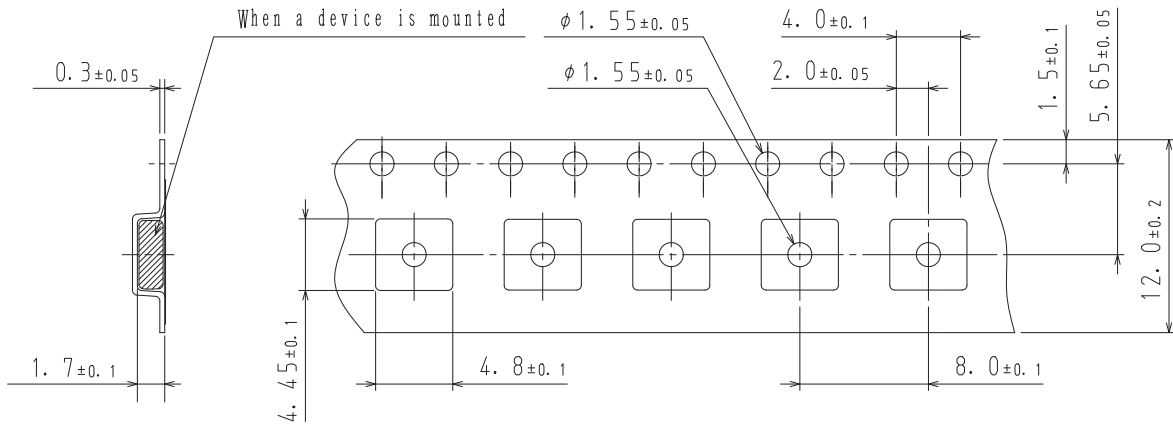
NOTE (1)

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

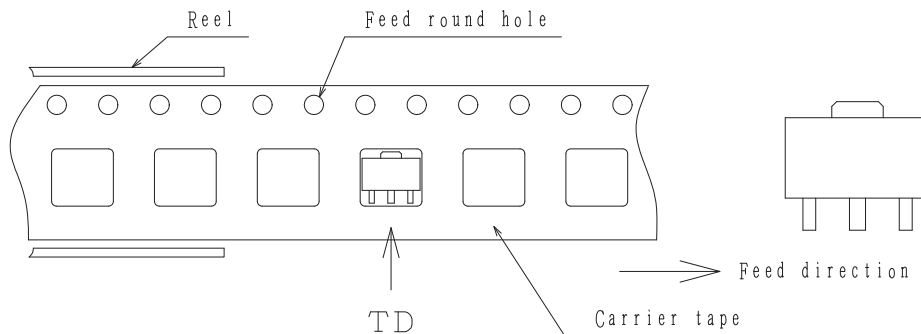
| Label | JEITA Phase |
|-------------|----------------|
| LEAD FREE 3 | JEITA Phase 3A |
| LEAD FREE 4 | JEITA Phase 3 |

2. Taping configuration

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



2-2. Device placement direction

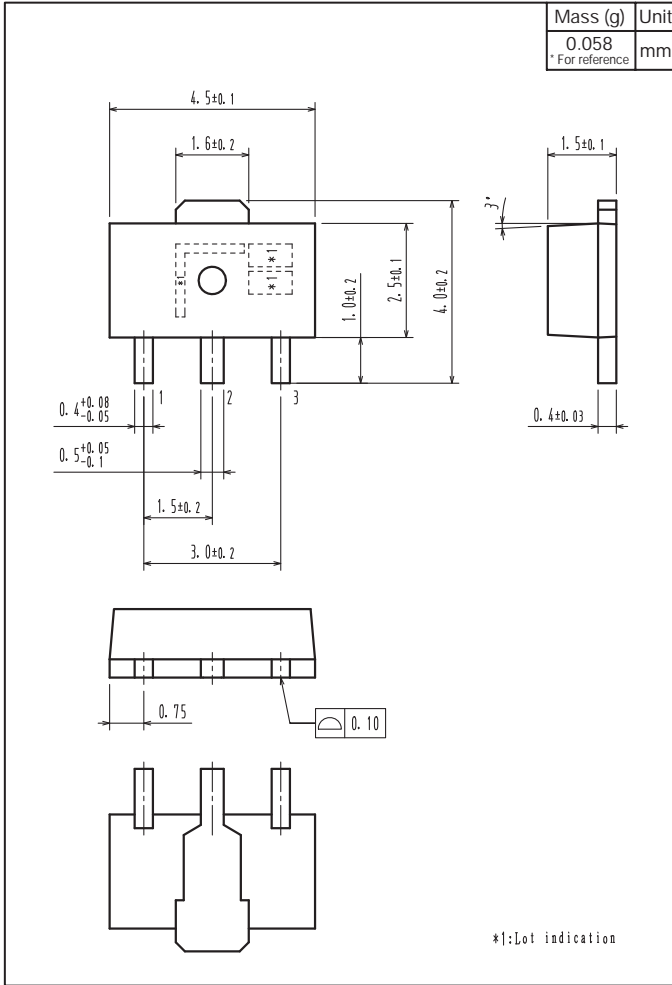


Those with pin 1 index on the feed hole side.....TD

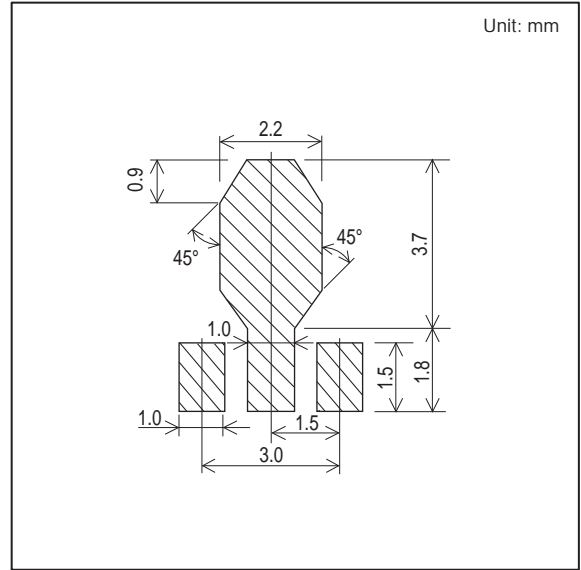
2SC5347A

Outline Drawing

2SC5347AE-TD-E, 2SC5347AF-TD-E



Land Pattern Example



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- Подбор аналогов;
- Консультации по применению компонента;
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- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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