

To all our customers

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Renesas Technology Corp.  
Customer Support Dept.  
April 1, 2003

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# 2SC1214

Silicon NPN Epitaxial

**RENESAS**

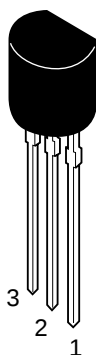
ADE-208-1050 (Z)  
1st. Edition  
Mar. 2001

## Application

Low frequency amplifier

## Outline

TO-92 (1)



- 1. Emitter
- 2. Collector
- 3. Base

Absolute Maximum Ratings (Ta = 25°C)

| Item                         | Symbol    | Ratings     | Unit |
|------------------------------|-----------|-------------|------|
| Collector to base voltage    | $V_{CBO}$ | 50          | V    |
| Collector to emitter voltage | $V_{CEO}$ | 50          | V    |
| Emitter to base voltage      | $V_{EBO}$ | 4           | V    |
| Collector current            | $I_C$     | 500         | mA   |
| Collector power dissipation  | $P_C$     | 600         | mW   |
| Junction temperature         | $T_j$     | 150         | °C   |
| Storage temperature          | $T_{stg}$ | -55 to +150 | °C   |

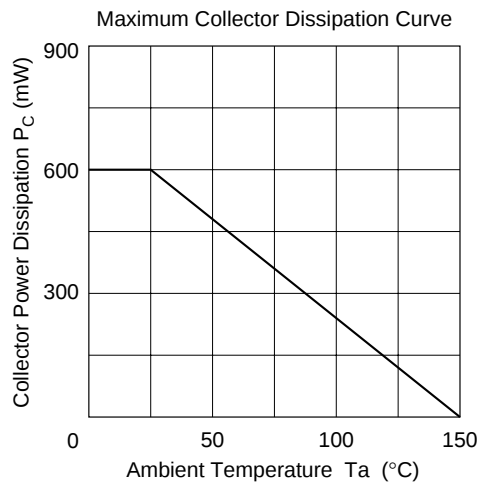
Electrical Characteristics (Ta = 25°C)

| Item                                    | Symbol        | Min | Typ  | Max | Unit          | Test conditions                                               |
|-----------------------------------------|---------------|-----|------|-----|---------------|---------------------------------------------------------------|
| Collector to base breakdown voltage     | $V_{(BR)CBO}$ | 50  | —    | —   | V             | $I_C = 10\text{ }\mu\text{A}$ , $I_E = 0$                     |
| Collector to emitter breakdown voltage  | $V_{(BR)CEO}$ | 50  | —    | —   | V             | $I_C = 1\text{ mA}$ , $R_{BE} =$                              |
| Emitter to base breakdown voltage       | $V_{(BR)EBO}$ | 4   | —    | —   | V             | $I_E = 10\text{ }\mu\text{A}$ , $I_C = 0$                     |
| Collector cutoff current                | $I_{CBO}$     | —   | —    | 0.5 | $\mu\text{A}$ | $V_{CB} = 20\text{ V}$ , $I_E = 0$                            |
| DC current transfer ratio               | $h_{FE}^*$    | 60  | —    | 320 |               | $V_{CE} = 3\text{ V}$ , $I_C = 10\text{ mA}$                  |
|                                         | $h_{FE}$      | 10  | —    | —   |               | $V_{CE} = 3\text{ V}$ , $I_C = 500\text{ mA}$<br>(pulse test) |
| Collector to emitter saturation voltage | $V_{CE(sat)}$ | —   | 0.2  | 0.6 | V             | $I_C = 150\text{ mA}$ , $I_B = 15\text{ mA}$<br>(Pulse test)  |
| Base to emitter voltage                 | $V_{BE}$      | —   | 0.64 | —   | V             | $V_{CE} = 3\text{ V}$ , $I_C = 10\text{ mA}$                  |

Note: 1. The 2SC1214 is grouped by  $h_{FE}$  as follows.

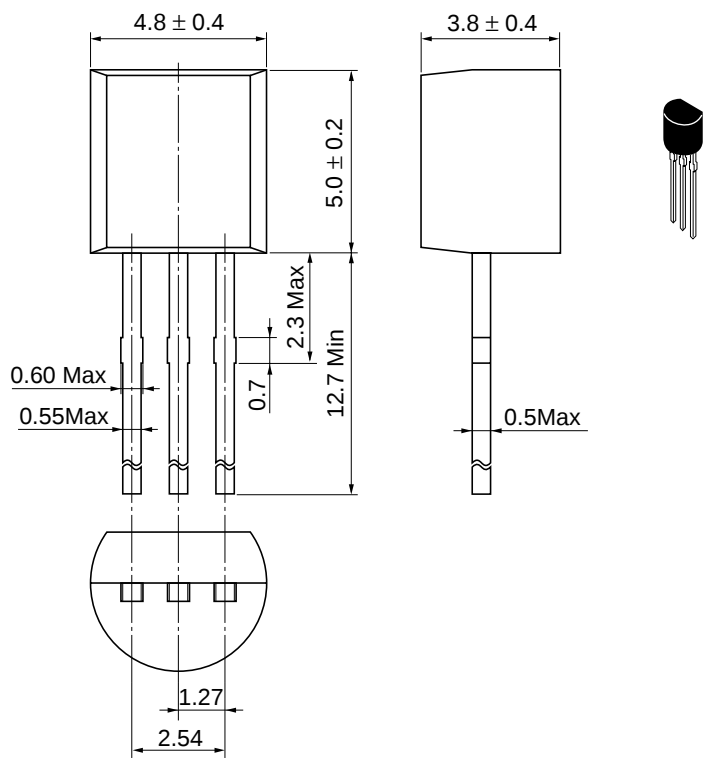
| B         | C          | D          |
|-----------|------------|------------|
| 60 to 120 | 100 to 200 | 160 to 320 |

See characteristic curves of 2SC1213.



Package Dimensions

As of January, 2001  
Unit: mm



|                        |           |
|------------------------|-----------|
| Hitachi Code           | TO-92 (1) |
| JEDEC                  | Conforms  |
| EIAJ                   | Conforms  |
| Mass (reference value) | 0.25 g    |

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