

**DESCRIPTION**

The 2SC1623-L4, 2SC1623-L5, 2SC1623-L6, and 2SC1623-L7 are available in the SOT-23 package.

**ORDERING INFORMATION**

| Package Type                             | Part Number   |
|--|---------------|
| SOT-23                                   | 2SC1623-L4    |
|  | 2SC1623-L5    |
|  | 2SC1623-L6    |
|  | 2SC1623-L7    |
| SPQ                                      | 3,000pcs/Reel |
| AiT provides all RoHS Compliant Products |               |

**h<sub>FE</sub> CLASSIFICATION**

| Rank | Range     |
|------|-----------|
| L4   | 90 ~ 180  |
| L5   | 135 ~ 270 |
| L6   | 200 ~ 400 |
| L7   | 300 ~ 600 |

**ABSOLUTE MAXIMUM RATINGS**

T<sub>A</sub> = 25°C, unless otherwise specified.

|   |               |
|---|---------------|
| V <sub>CB0</sub> , Collector-Base Voltage     | 60 V          |
| V <sub>CEO</sub> , Collector-Emitter Voltage  | 50 V          |
| V <sub>EBO</sub> , Emitter-Base Voltage       | 5 V           |
| I <sub>C</sub> , Collector Current-Continuous | 100 mA        |
| P <sub>C</sub> , Collector Power Dissipation  | 200 mW        |
| T <sub>J</sub> , Junction Temperature         | 150 °C        |
| T <sub>stg</sub> , Storage Temperature        | -55 ~ +150 °C |

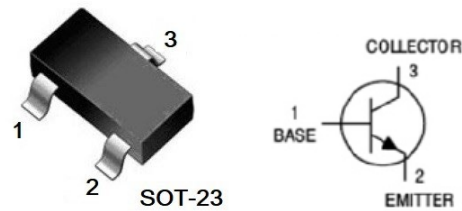
Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

**FEATURES**

- High DC current gain: h<sub>FE</sub> = 200Typ.  
(V<sub>CEO</sub>=50V, I<sub>C</sub> = 100 mA)
- High Voltage: V<sub>CEO</sub> = 50V
- NPN silicon epitaxial planar transistor

**APPLICATIONS**

- Audio frequency general purpose amplifier.

**PIN DESCRIPTION**

| PIN# | DESCRIPTION |
|------|-------------|
| 1    | Base        |
| 2    | Emitter     |
| 3    | Collector   |

**ELECTRICAL CHARACTERISTICS** $T_A=25^{\circ}\text{C}$  unless otherwise specified.

| Parameter                            | Symbols       | Conditions  | Min. | Typ. | Max. | Unit          |
|--------------------------------------|---------------|---|------|------|------|---------------|
| Collector-Base Breakdown Voltage     | $V_{(BR)CBO}$ | $I_C = 100\ \mu\text{A},$<br>$I_E = 0$            | 60   | -    | -    | V             |
| Collector-Emitter Breakdown Voltage  | $V_{(BR)CEO}$ | $I_C = 1\ \text{mA},$<br>$I_B = 0$                | 50   | -    | -    | V             |
| Collector-Base Breakdown Voltage     | $V_{(BR)EBO}$ | $I_C = 100\ \mu\text{A},$<br>$I_C = 0$            | 5    | -    | -    | V             |
| Collector Cut-off Current            | $I_{CBO}$     | $V_{CB} = 60\ \text{V},$<br>$I_E = 0$             | -    | -    | 0.1  | $\mu\text{A}$ |
| Emitter Cut-off Current              | $I_{EBO}$     | $V_{EB} = 5\ \text{V},$<br>$I_C = 0$              | -    | -    | 0.1  | $\mu\text{A}$ |
| DC Current Gain                      | $h_{FE}$      | $V_{CE} = 6\ \text{V},$<br>$I_C = 1\ \text{mA}$   | 90   | 200  | 600  | -             |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 100\ \text{mA},$<br>$I_B = 10\ \text{mA},$ | -    | -    | 0.3  | V             |
| Transition Frequency                 | $f_T$         | $V_{CE} = 6\ \text{V},$<br>$I_C = 10\ \text{mA}$  | -    | 250  | -    | MHz           |



### TYPICAL CHARACTERISTICS

Fig 1. Total power dissipation vs. Ambient temperature

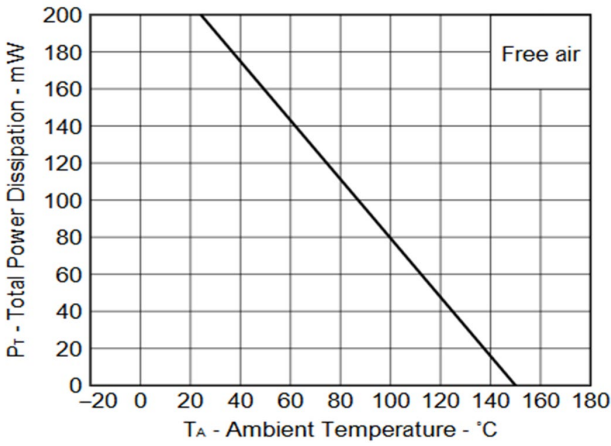


Fig 2. Normalized collector cutoff current vs. Ambient temperature

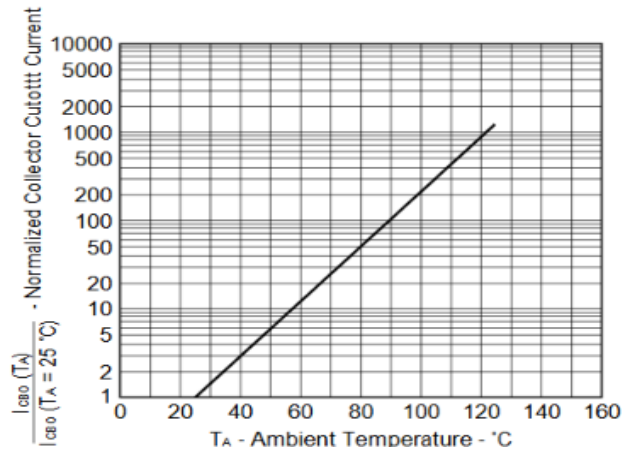


Fig 3. Collector current vs. Collector to emitter voltage

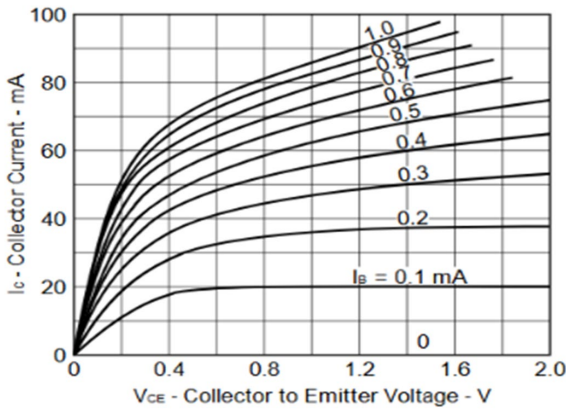


Fig 4. Collector current vs. Collector to emitter voltage

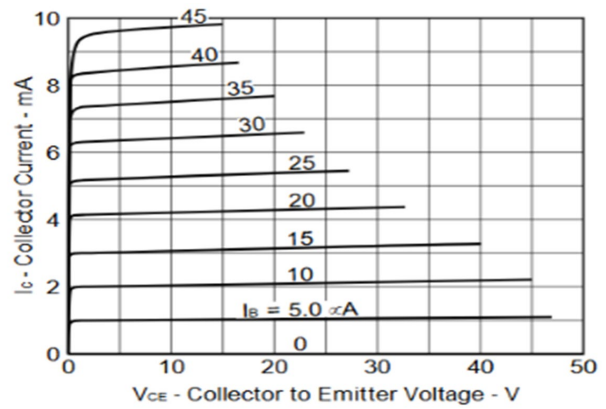


Fig 5. DC current gain vs. Collector current

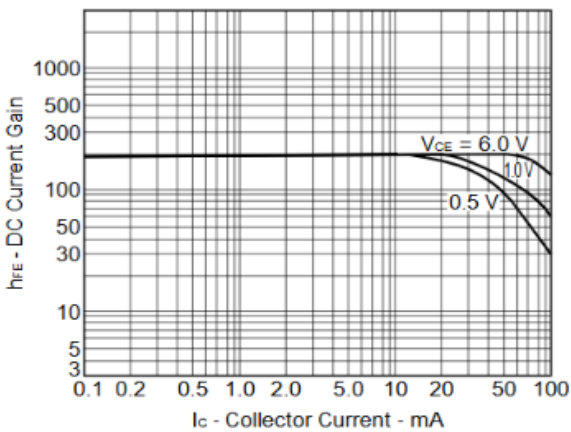
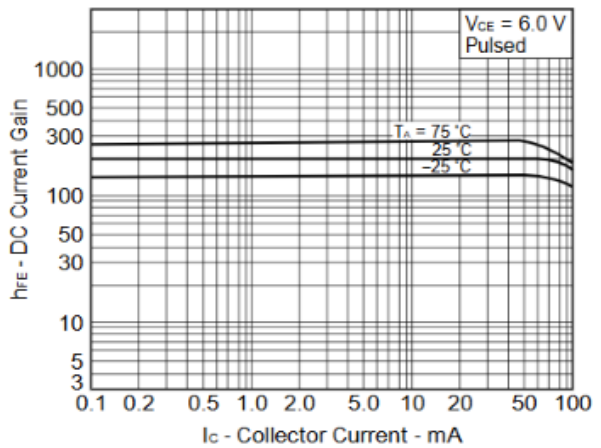


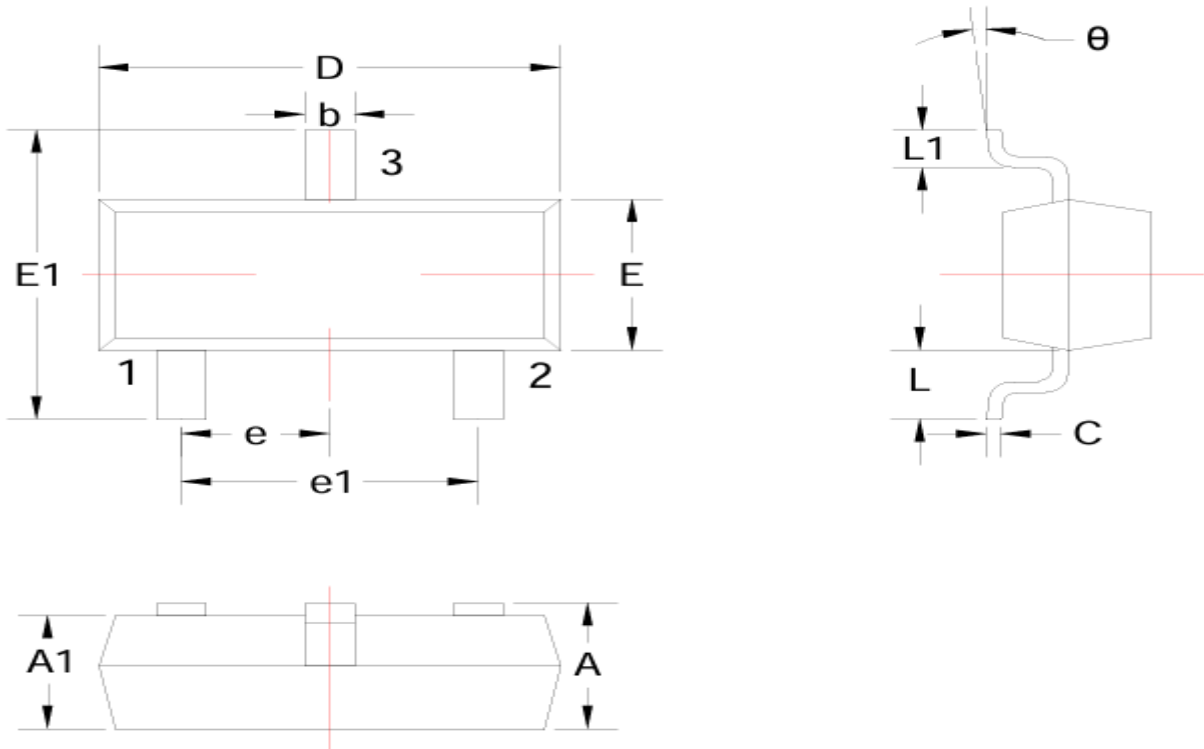
Fig 6. DC current gain vs. Collector current





**PACKAGE INFORMATION**

Dimension in SOT-23 (Unit: mm)



| Symbol | Millimeter |       |
|--------|------------|-------|
|        | Min.       | Max.  |
| A      | 0.900      | 1.150 |
| A1     | 0.900      | 1.050 |
| b      | 0.300      | 0.500 |
| c      | 0.080      | 0.150 |
| D      | 2.800      | 3.000 |
| E      | 1.200      | 1.400 |
| E1     | 2.250      | 2.550 |
| e      | 0.950 TYP. |       |
| e1     | 1.800      | 2.000 |
| L      | 0.550 REF  |       |
| L1     | 0.300      | 0.500 |
| θ      | 0°         | 8°    |



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