

/ Descriptions

TO-251 NPN Silicon NPN transistor in a TO-251 Plastic Package.

/ Features

2SA1930I
High f_T , complementary pair with 2SA1930I.

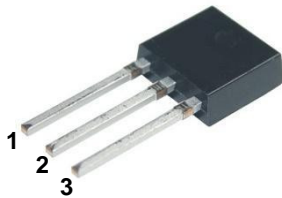
/ Applications

General power and driver stage amplifier applications.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Collector PIN 3 Emitter

/ h_{FE} Classifications & Marking

See Marking Instructions.

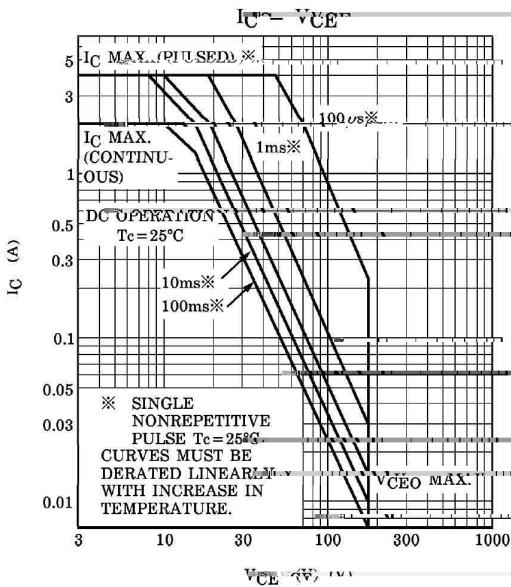
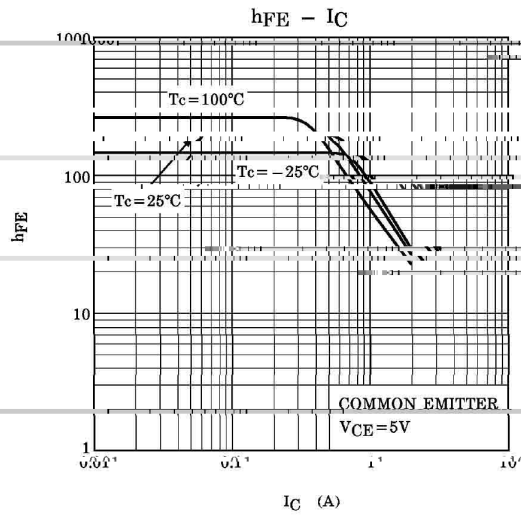
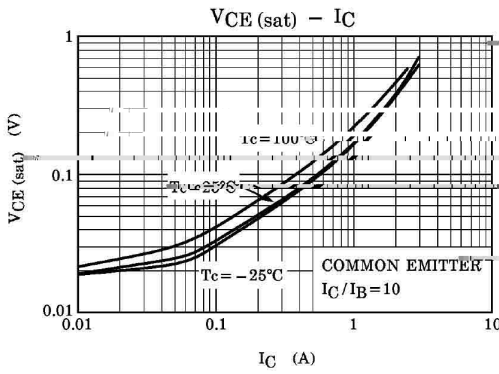
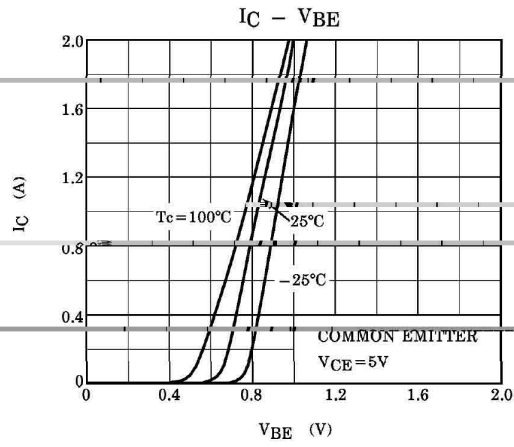
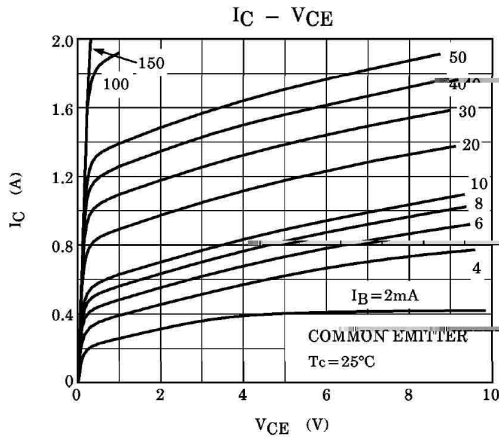
/ Absolute Maximum Ratings(Ta=25)

| Parameter | Symbol | Rating | Unit |
|--------------------------------|----------------|---------|------|
| Collector to Base Voltage | V_{CBO} | 180 | V |
| Collector to Emitter Voltage | V_{CEO} | 180 | V |
| Emitter to Base Voltage | V_{EBO} | 5.0 | V |
| Collector Current - Continuous | I_C | 2.0 | A |
| Base Current – Continuous | I_B | 1.0 | A |
| Collector Power Dissipation | P_C | 1.5 | W |
| Collector Power Dissipation | $P_C(T_c=25)$ | 20 | W |
| Junction Temperature | T_j | 150 | |
| Storage Temperature Range | T_{stg} | -55~150 | |

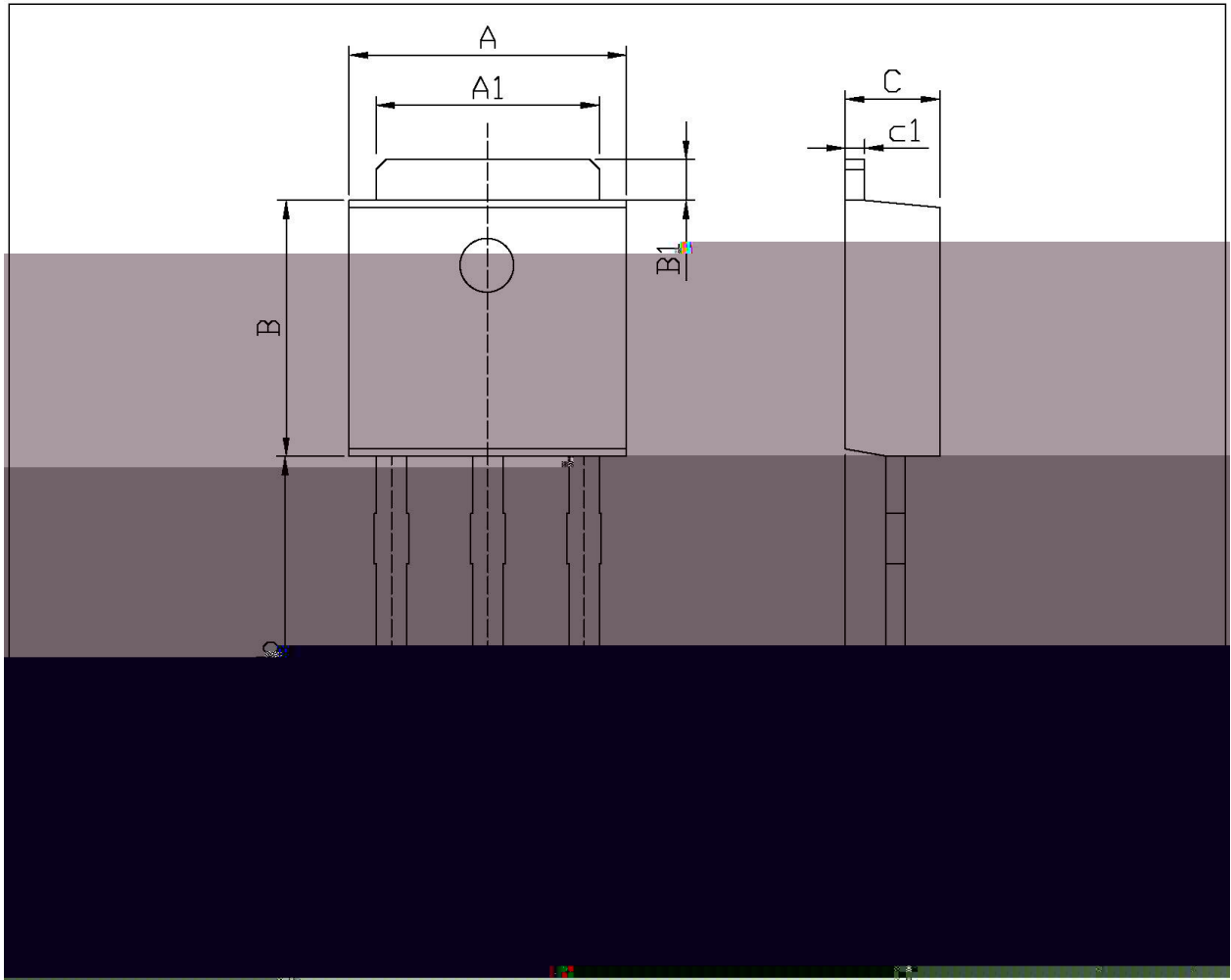
/ Electrical Characteristics(Ta=25)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---------------|---------------------------------|-----|------|-----|---------|
| Collector to Base Breakdown Voltage | V_{CBO} | $I_C=10mA$ $I_B=0$ | 180 | | | V |
| Collector Cut-Off Current | I_{CBO} | $V_{CB}=180V$ $I_E=0$ | | | 5.0 | μA |
| Emitter Cut-Off Current | I_{EBO} | $V_{EB}=5.0V$ $I_C=0$ | | | 5.0 | μA |
| DC Current Gain | $h_{FE(1)}$ | $V_{CE}=5.0V$ $I_C=100mA$ | 100 | | 320 | |
| | $h_{FE(2)}$ | $V_{CE}=5.0V$ $I_C=1.0A$ | 50 | | | |
| Collector to Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=1.0A$ $I_B=100mA$ | | 0.16 | 1.0 | V |
| Base to Emitter Voltage | V_{BE} | $V_{CE}=5.0V$ $I_C=1.0A$ | | 0.68 | 1.5 | V |
| Transition Frequency | f_T | $V_{CE}=5.0V$ $I_C=300mA$ | | 200 | | MHz |
| Collector output capacitance | C_{ob} | $V_{CB}=10V$ $f=1.0MHz$ $I_E=0$ | | 16 | | pF |

/ Electrical Characteristic Curve



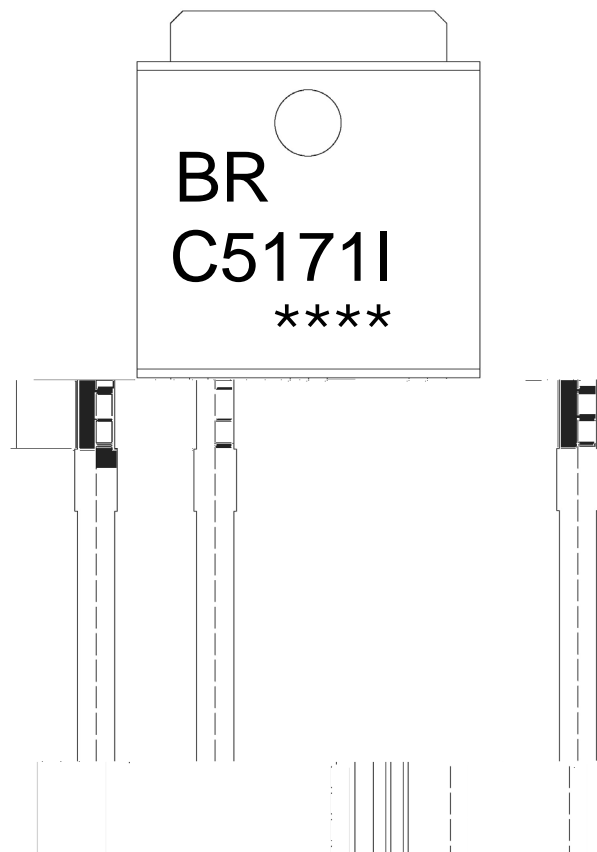
/ Package Dimensions



單位: mm

| Dimensions In Millimeters | Dimension |
|---------------------------|-----------|
| 1.50 | A |
| 1.00 | A1 |
| 1.00 | B |
| 0.50 | B1 |
| 0.50 | C |
| 0.25 | c1 |

/ Marking Instructions



BR

C5171I

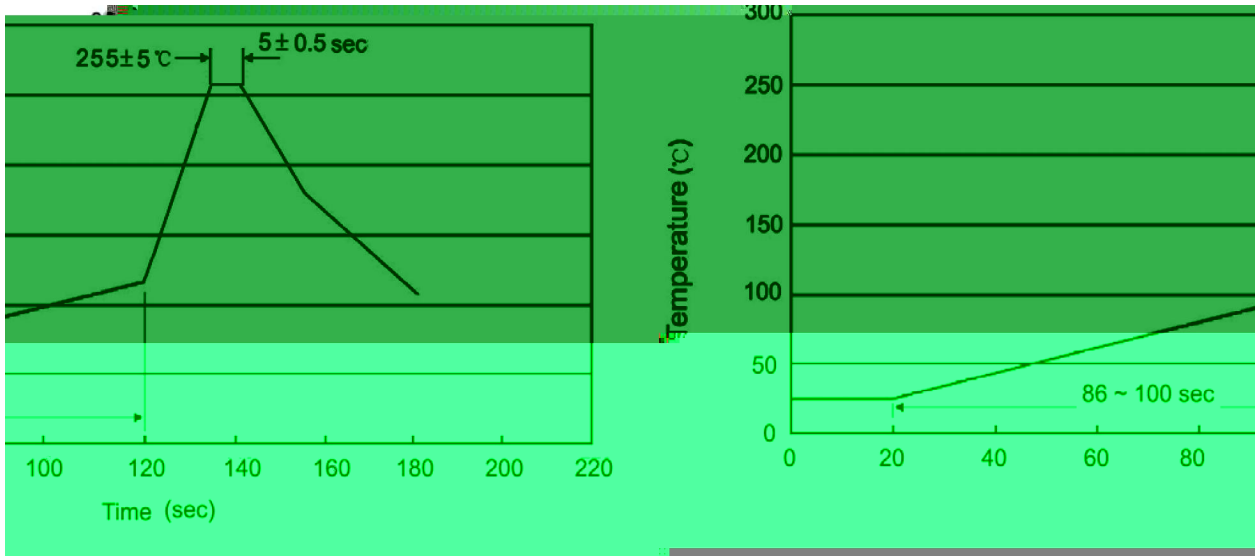
Note:

BR: Company Code

C5171I: Product Type.

****: Lot No. Code, code change with Lot No.

() / Temperature Profile for Dip Soldering(Pb-Free)



Note:

- | | | | | | |
|---|-------|-----|-----------|--------|---|
| 1 | 25 | 150 | 60 | 90sec; | 1.Preheating:25~150 , Time:60~90sec. |
| 2 | 255±5 | | 5±0.5sec; | | 2.Peak Temp.:255±5 , Duration:5±0.5sec. |
| 3 | | 2 | 10 | /sec. | 3. Cooling Speed: 2~10 /sec. |

/ Resistance to Soldering Heat Test Conditions

270 ± 5 10 ± 1 sec. Temp.: 270 ± 5 Time: 10 ± 1 sec

/ Packaging SPEC.

/ BULK

| Package Type | Units | | | | | Dimension (unit mm ³) | | |
|--------------|-------------|------------------|-------------------|-------------------------|-------------------|-----------------------------------|-------------|-------------|
| | Units/Bag / | Bags/Inner Box / | Units/Inner Box / | Inner Boxes/Outer Box / | Units/Outer Box / | Bag | Inner Box | Outer Box |
| TO-251 | 1,000 | 10 | 10,000 | 5 | 50,000 | 135×190 | 237×172×102 | 560×245×195 |

/ TUBE

| Package Type | Units | | | | | Dimension (unit mm ³) | | |
|--------------|--------------|-------------------|-------------------|-------------------------|-------------------|-----------------------------------|------------|-------------|
| | Units/Tube / | Tubes/Inner Box / | Units/Inner Box / | Inner Boxes/Outer Box / | Units/Outer Box / | Tube | Inner Box | Outer Box |
| TO-251/252 | 75 | 48 | 3,600 | 5 | 18,000 | 526×20.5×5.25 | 555×164×50 | 575×290×180 |

/ Notices