



**2SC4081-A  
 2SC4081-B  
 2SC4081-C**

**Features**

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Low Cob . Cob=2.0pF(Typ)
- Complementary to 2SC1576A
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

**Maximum Ratings**

| Symbol           | Rating                      | Rating      | Unit |
|------------------|-----------------------------|-------------|------|
| V <sub>CEO</sub> | Collector-Emitter Voltage   | 50          | V    |
| V <sub>CBO</sub> | Collector-Base Voltage      | 60          | V    |
| V <sub>EBO</sub> | Emitter-Base Voltage        | 7           | V    |
| I <sub>C</sub>   | Collector Current           | 150         | 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 to +150 | °C   |

**Electrical Characteristics @ 25°C Unless Otherwise Specified**

| Symbol | Parameter | Min | Typ | Max | Units |
|--------|-----------|-----|-----|-----|-------|
|--------|-----------|-----|-----|-----|-------|

**OFF CHARACTERISTICS**

|                  |  |     |     |     |      |
|------------------|--|-----|-----|-----|------|
| I <sub>CBO</sub> | Collector Cutoff Current (V <sub>CB</sub> =-60Vdc) | --- | --- | 100 | nAdc |
| I <sub>EBO</sub> | Emitter Cutoff Current (V <sub>EB</sub> =-6.0Vdc)  | --- | --- | 100 | nAdc |

**ON CHARACTERISTICS**

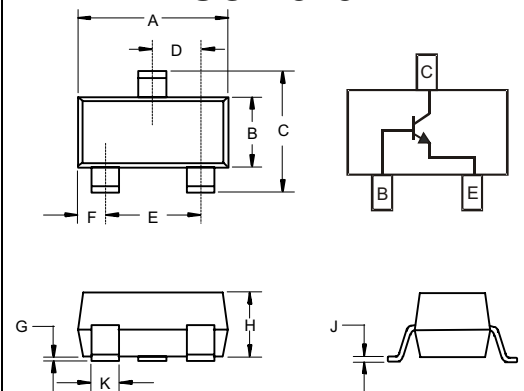
|                      |   |     |     |     |     |
|----------------------|---|-----|-----|-----|-----|
| BV <sub>CBO</sub>    | Collector-base breakdown voltage (I <sub>C</sub> =-50µAdc)                        | 60  | --- | --- | Vdc |
| BV <sub>CEO</sub>    | Collector-emitter breakdown voltage (I <sub>C</sub> =-1µAdc)                      | 50  | --- | --- | Vdc |
| BV <sub>EBO</sub>    | Emitter-base breakdown voltage (I <sub>E</sub> =-50µAdc)                          | 6   | --- | --- | Vdc |
| h <sub>FE</sub>      | DC Current Gain (I <sub>C</sub> =-1mAdc, V <sub>CE</sub> =-6.0Vdc)                | 120 | --- | 560 | --- |
| V <sub>CE(sat)</sub> | Collector Saturation Voltage* (I <sub>C</sub> =-50mAdc, I <sub>B</sub> =-5.0mAdc) | --- | --- | 0.4 | Vdc |
| C <sub>ob</sub>      | Output Capacitance (V <sub>CB</sub> =-12.0Vdc, I <sub>E</sub> =0, f=1.0MHz)       | --- | 2.0 | 3.5 | pF  |
| f <sub>T</sub>       | Gain Bandwidth product (V <sub>CE</sub> =-12Vdc, I <sub>E</sub> =2mAdc, f=30MHz)  | --- | 180 | --- | MHz |

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

| Rank            | A       | B       | C       |
|-----------------|---------|---------|---------|
| Marking         | BQ      | BR      | BS      |
| h <sub>FE</sub> | 120-270 | 180-390 | 270-560 |

**NPN Silicon Epitaxial Transistors**

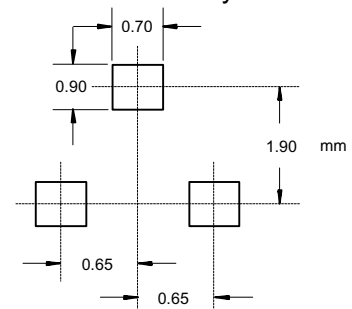
**SOT-323**



**DIMENSIONS**

| DIM | INCHES       |      | MM          |      | NOTE |
|-----|--------------|------|-------------|------|------|
|     | MIN          | MAX  | MIN         | MAX  |      |
| A   | .071         | .087 | 1.80        | 2.20 |      |
| B   | .045         | .053 | 1.15        | 1.35 |      |
| C   | .079         | .087 | 2.00        | 2.20 |      |
| D   | .026 Nominal |      | 0.65Nominal |      |      |
| E   | .047         | .055 | 1.20        | 1.40 |      |
| F   | .012         | .016 | .30         | .40  |      |
| G   | .000         | .004 | .000        | .100 |      |
| H   | .035         | .039 | .90         | 1.00 |      |
| J   | .004         | .010 | .100        | .250 |      |
| K   | .012         | .016 | .30         | .40  |      |

**Suggested Solder Pad Layout**



## 2SC4081

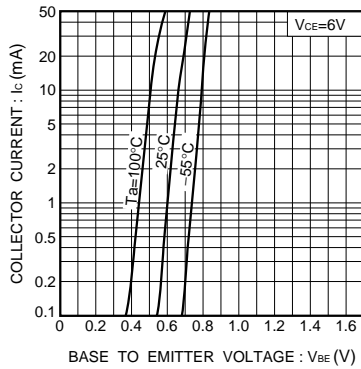


Fig.1 Grounded emitter propagation characteristics

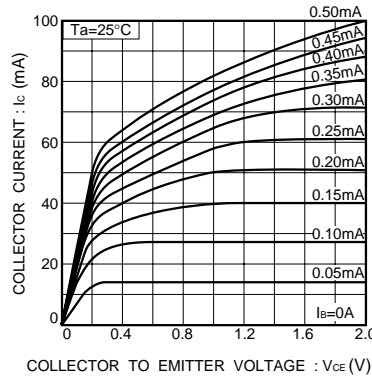


Fig.2 Grounded emitter output characteristics ( I )

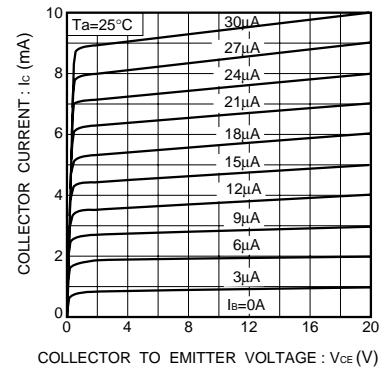


Fig.3 Grounded emitter output characteristics ( II )

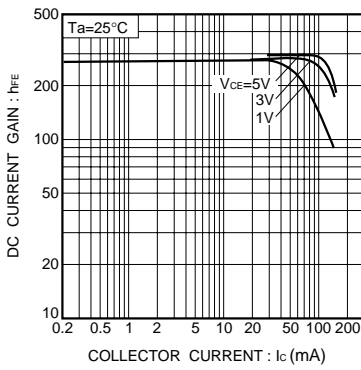


Fig.4 DC current gain vs. collector current ( I )

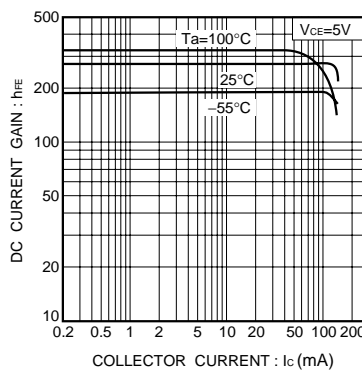


Fig.5 DC current gain vs. collector current ( II )

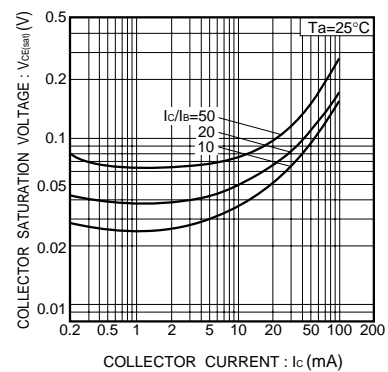


Fig. 6 Collector-emitter saturation voltage vs. collector current

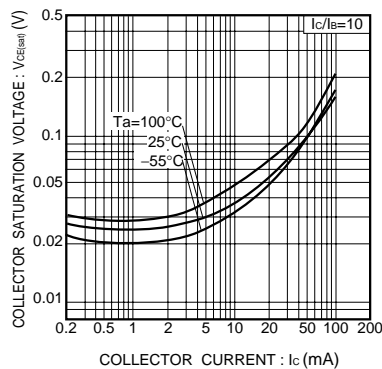


Fig.7 Collector-emitter saturation voltage vs. collector current ( I )

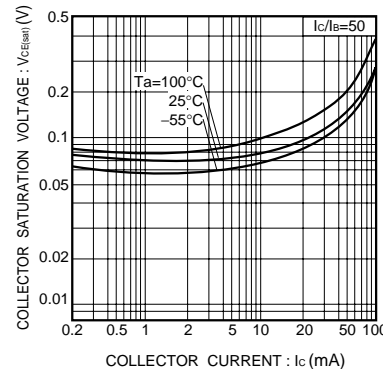


Fig.8 Collector-emitter saturation voltage vs. collector current (II)

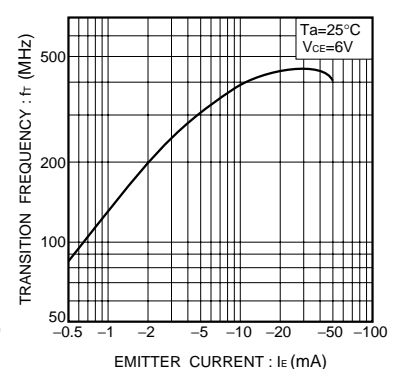


Fig.9 Gain bandwidth product vs. emitter current

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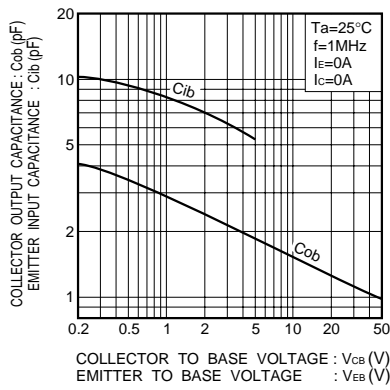


Fig.10 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage

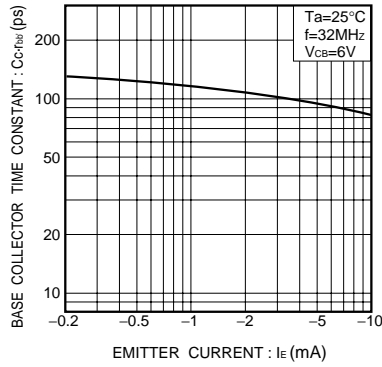


Fig.11 Base-collector time constant vs. emitter current



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### Ordering Information :

| Device         | Packing               |
|----------------|-----------------------|
| Part Number-TP | Tape&Reel; 3Kpcs/Reel |

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