

## Features

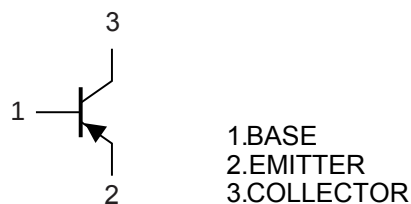
- Excellent  $h_{FE}$  Linearity
- Complementary to 2SC4081
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

## Maximum Ratings @ 25°C Unless Otherwise Specified

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 625°C/W Junction to Ambient

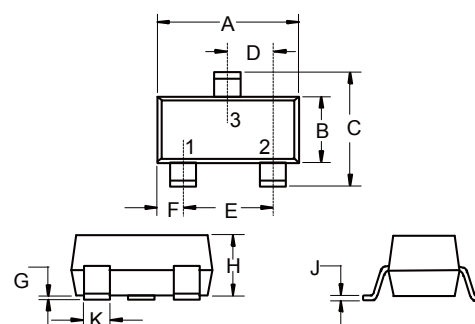
| Parameter                    | Symbol    | Rating | Unit |
|------------------------------|-----------|--------|------|
| Collector-Base Voltage       | $V_{CBO}$ | -60    | V    |
| Collector-Emitter Voltage    | $V_{CEO}$ | -50    | V    |
| Emitter-Base Voltage         | $V_{EBO}$ | -6     | V    |
| Continuous Collector Current | $I_C$     | -150   | mA   |
| Power Dissipation            | $P_D$     | 200    | mW   |

## Internal Structure



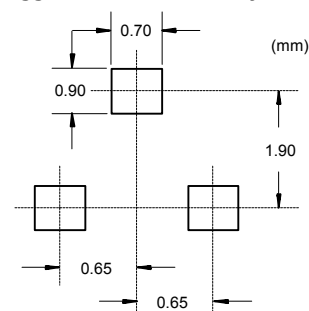
# PNP Silicon Epitaxial Transistors

## SOT-323



| DIMENSIONS |        |       |      |      |      |
|------------|--------|-------|------|------|------|
| DIM        | INCHES |       | MM   |      | NOTE |
|            | MIN    | MAX   | MIN  | MAX  |      |
| A          | 0.071  | 0.087 | 1.80 | 2.20 |      |
| B          | 0.045  | 0.053 | 1.15 | 1.35 |      |
| C          | 0.083  | 0.096 | 2.10 | 2.45 |      |
| D          | 0.026  |       | 0.65 |      | TYP. |
| E          | 0.047  | 0.055 | 1.20 | 1.40 |      |
| F          | 0.012  | 0.016 | 0.30 | 0.40 |      |
| G          | 0.000  | 0.004 | 0.00 | 0.10 |      |
| H          | 0.035  | 0.044 | 0.90 | 1.10 |      |
| J          | 0.002  | 0.010 | 0.05 | 0.25 |      |
| K          | 0.006  | 0.016 | 0.15 | 0.40 |      |

## Suggested Solder Pad Layout



### Electrical Characteristics @ $T_A=25^\circ\text{C}$ Unless Otherwise Specified

| Parameter                            | Symbol        | Min | Typ | Max  | Units         | Conditions                                                  |
|--------------------------------------|---------------|-----|-----|------|---------------|-------------------------------------------------------------|
| Collector-Base Breakdown Voltage     | $V_{(BR)CBO}$ | -60 |     |      | V             | $I_C=-50\mu\text{A}$ , $I_E=0$                              |
| Collector-Emitter Breakdown Voltage  | $V_{(BR)CEO}$ | -50 |     |      | V             | $I_C=-1\text{mA}$ , $I_B=0$                                 |
| Emitter-Base Breakdown Voltage       | $V_{(BR)EBO}$ | -6  |     |      | V             | $I_E=-50\mu\text{A}$ , $I_C=0$                              |
| Collector Cutoff Current             | $I_{CBO}$     |     |     | -0.1 | $\mu\text{A}$ | $V_{CB}=-60\text{V}$ , $I_E=0$                              |
| Emitter Cutoff Current               | $I_{EBO}$     |     |     | -0.1 | $\mu\text{A}$ | $V_{EB}=-6\text{V}$ , $I_C=0$                               |
| DC Current Gain                      | $h_{FE}$      | 120 |     | 560  |               | $V_{CE}=-6\text{V}$ , $I_C=-1\text{mA}$                     |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ |     |     | -0.5 | V             | $I_C=-50\text{mA}$ , $I_B=-5\text{mA}$                      |
| Transition Frequency                 | $f_T$         |     | 100 |      | MHz           | $V_{CE}=-12\text{V}$ , $I_C=-2\text{mA}$ , $f=30\text{MHz}$ |
| Output Capacitance                   | $C_{ob}$      |     | 5   |      | pF            | $V_{CB}=-12\text{V}$ , $I_E=0$ , $f=1\text{MHz}$            |

### Classification of $h_{FE}$

| Rank    | Q       | R       | S       |
|---------|---------|---------|---------|
| Range   | 120-270 | 180-390 | 270-560 |
| Marking | FQ      | FR      | FS      |

## Curve Characteristics

Fig. 1 - Static Characteristics

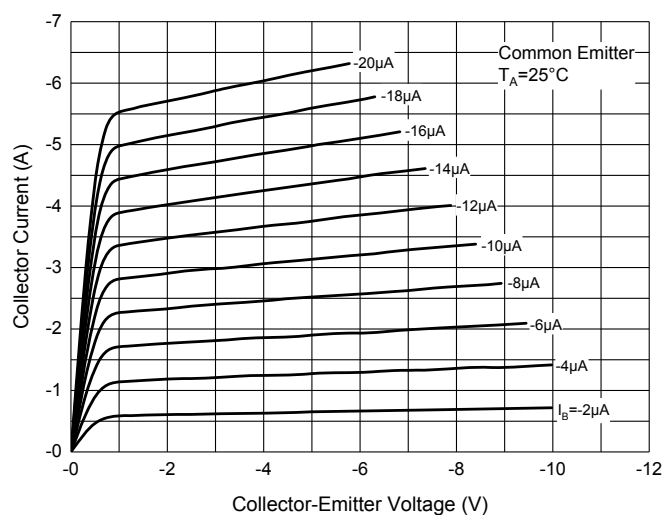


Fig. 2 - DC Current Gain Characteristics

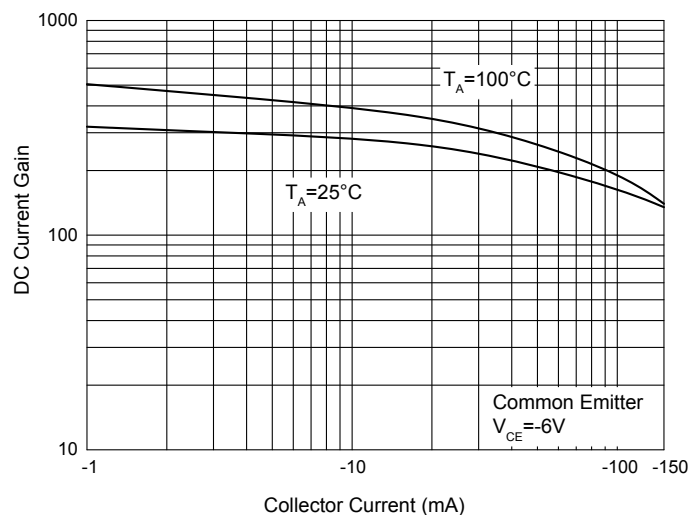


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

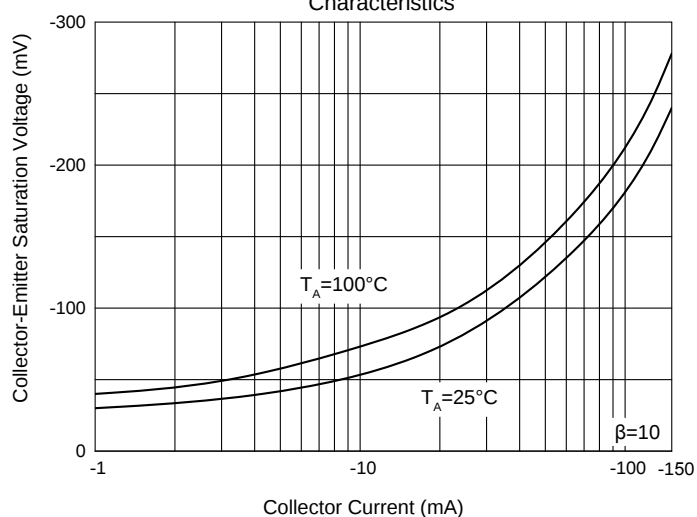


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

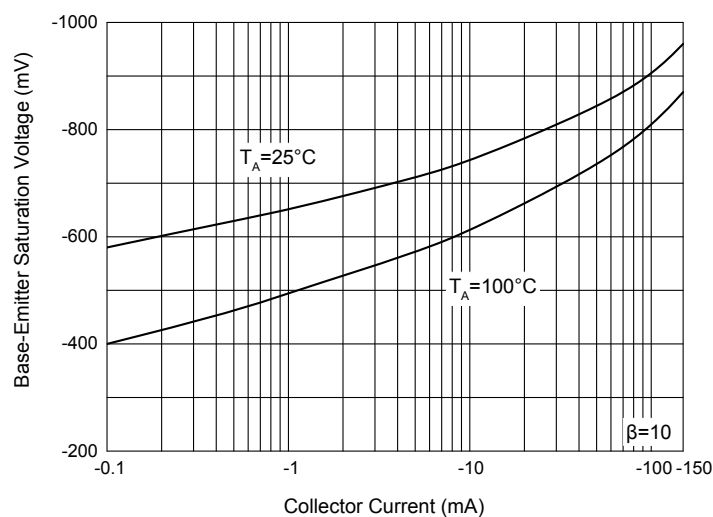
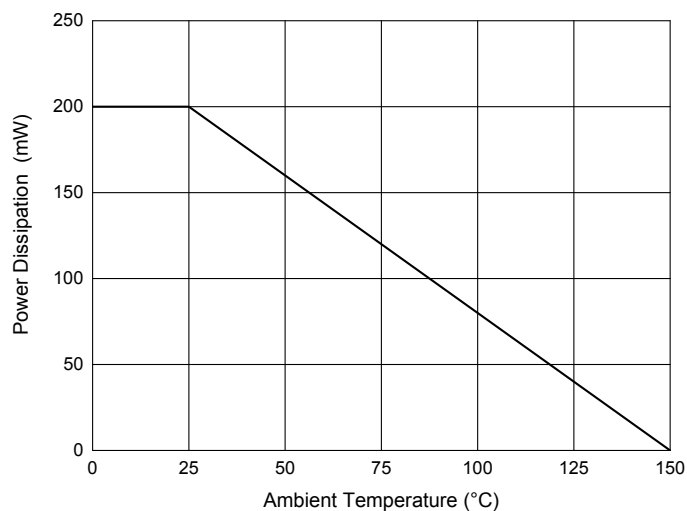


Fig. 6 - Power Derating Curve



## Ordering Information

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

Note : Adding "-HF" Suffix for Halogen Free, eg. Part Number-TP-HF

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