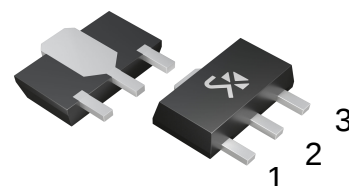


## PNP Silicon Epitaxial Planar Transistor

### Applications :

- Can be used for switching and amplifying
- In various electrical and electronic equipments

SOT-89



1base 2collector 3emitter

### MAXIMUM RATINGS ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)

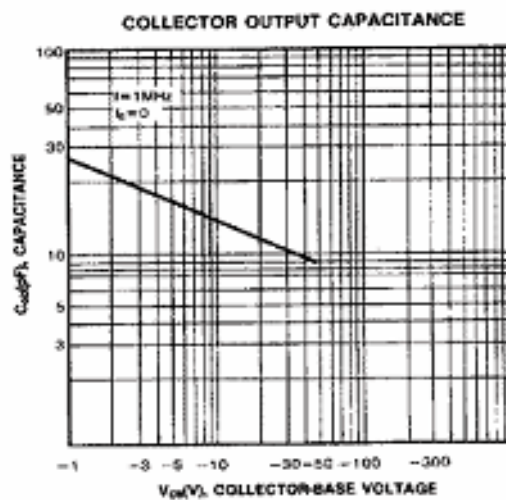
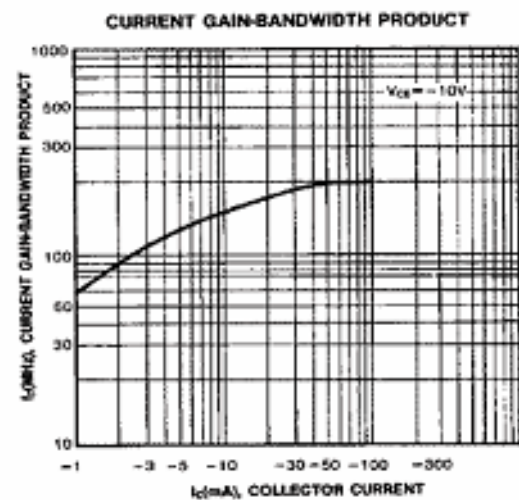
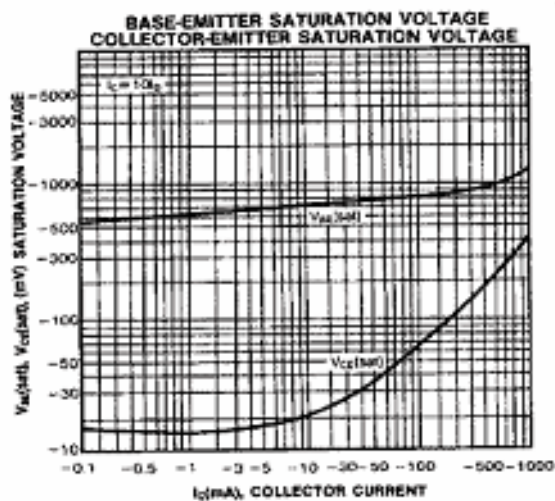
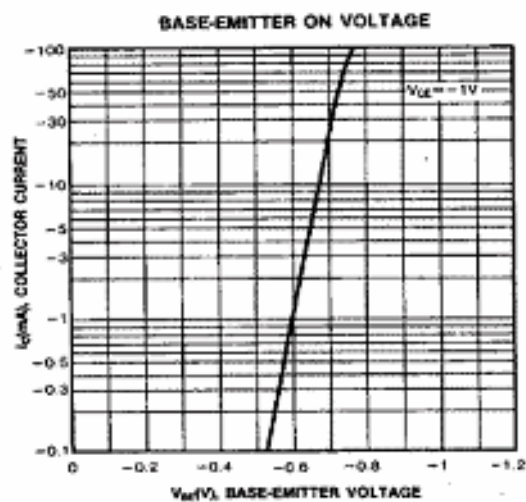
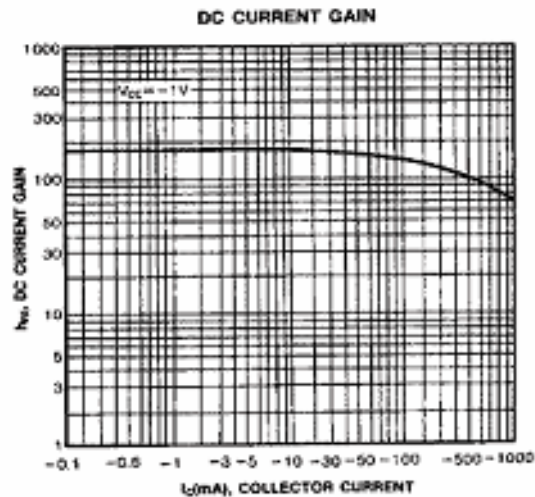
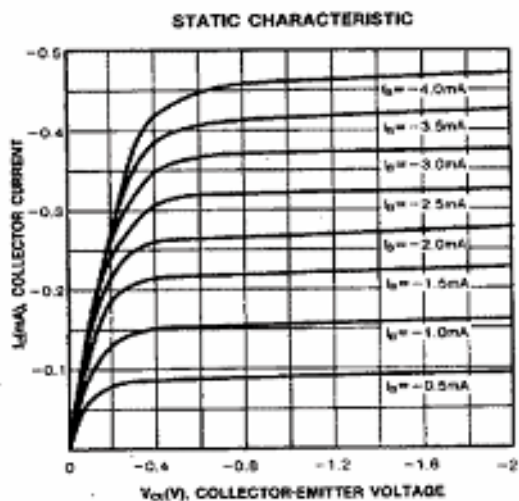
| Symbol    | Parameter                                            | Value   | Units              |
|-----------|------------------------------------------------------|---------|--------------------|
| $V_{CBO}$ | Collector-Base Voltage                               | -40     | V                  |
| $V_{CEO}$ | Collector-Emitter Voltage                            | -25     | V                  |
| $V_{EBO}$ | Emitter-Base Voltage                                 | -6      | V                  |
| $I_C$     | Collector Current -Continuous                        | -1.5    | A                  |
| $P_{tot}$ | Total power dissipation( $T_A=25^{\circ}\text{C}$ )* | 1       | W                  |
| $T_j$     | Junction Temperature                                 | 150     | $^{\circ}\text{C}$ |
| $T_{stg}$ | Storage Temperature                                  | -55-150 | $^{\circ}\text{C}$ |

\* mounted on printed circuit board.

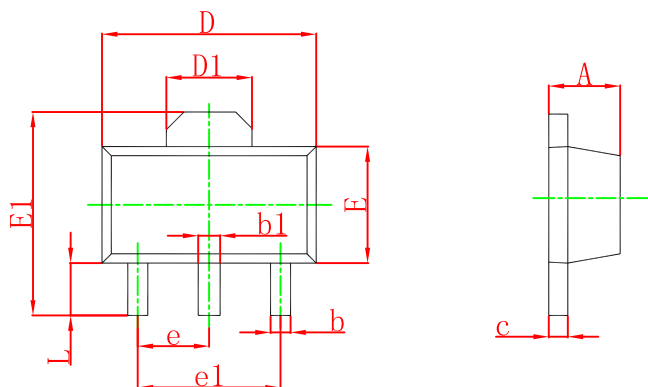
### ELECTRICAL CHARACTERISTICS ( $T_{amb}=25^{\circ}\text{C}$ unless otherwise specified)

| Parameter                            | Symbol        | Test conditions                                             | MIN        | TYP | MAX        | UNIT |
|--------------------------------------|---------------|-------------------------------------------------------------|------------|-----|------------|------|
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C=-2\text{mA}$ , $I_B=0$                                 | -25        |     |            | V    |
| Collector- base breakdown voltage    | $V_{(BR)CBO}$ | $I_C=-100\mu\text{A}$ , $I_E=0$                             | -40        |     |            | V    |
| Emitter - base breakdown voltage     | $V_{(BR)EBO}$ | $I_E=-100\mu\text{A}$ , $I_C=0$                             | -6         |     |            | V    |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB}=-35\text{V}$ , $I_E=0$                              |            |     | -100       | nA   |
| DC current gain                      | $h_{FE}$      | $V_{CE}=-1\text{V}$ , $I_C=-100\text{mA}$ $S_T$             | 140<br>200 |     | 280<br>400 |      |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=-800\text{mA}$ , $I_B=-80\text{mA}$                    |            |     | -0.5       | V    |
| Transition frequency                 | $f_T$         | $V_{CE}=10\text{V}$ , $I_E=50\text{mA}$ , $f=100\text{MHz}$ | 200        |     |            | MHz  |

Typical characteristics

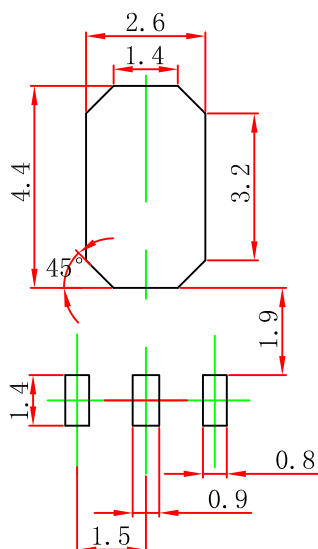


## SOT-89 Package Outline Dimensions



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min                       | Max   | Min                  | Max   |
| A      | 1.400                     | 1.600 | 0.055                | 0.063 |
| b      | 0.320                     | 0.520 | 0.013                | 0.020 |
| b1     | 0.400                     | 0.580 | 0.016                | 0.023 |
| c      | 0.350                     | 0.440 | 0.014                | 0.017 |
| D      | 4.400                     | 4.600 | 0.173                | 0.181 |
| D1     | 1.550 REF.                |       | 0.061 REF.           |       |
| E      | 2.300                     | 2.600 | 0.091                | 0.102 |
| E1     | 3.940                     | 4.250 | 0.155                | 0.167 |
| e      | 1.500 TYP.                |       | 0.060 TYP.           |       |
| e1     | 3.000 TYP.                |       | 0.118 TYP.           |       |
| L      | 0.900                     | 1.200 | 0.035                | 0.047 |

## SOT-89 Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.