

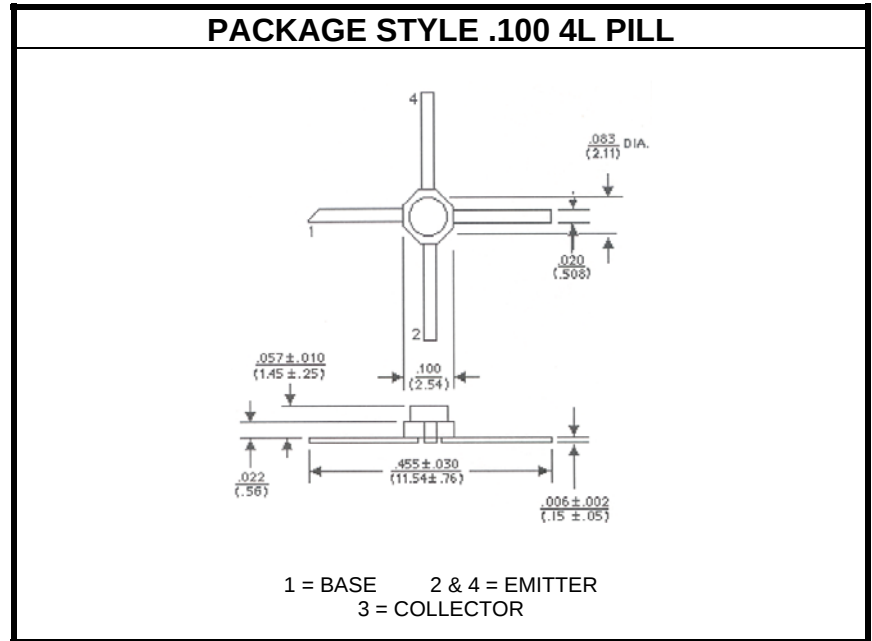
# NPN SILICON BIPOLAR TRANSISTOR

## DESCRIPTION:

The **ASI AT41435-3** is a low noise, high gain, silicon bipolar transistor for applications up to 6.0 GHz.

## MAXIMUM RATINGS

|            |                                             |
|------------|---------------------------------------------|
| $I_C$      | 60 mA                                       |
| $V_{CEO}$  | 12 V                                        |
| $V_{CBO}$  | 20 V                                        |
| $V_{EBO}$  | 1.5 V                                       |
| $P_{DISS}$ | 500 mW @ $T_C = 25^\circ\text{C}$           |
| $T_J$      | $-65^\circ\text{C}$ to $+200^\circ\text{C}$ |
| $T_{STG}$  | $-65^\circ\text{C}$ to $+200^\circ\text{C}$ |



## CHARACTERISTICS $T_C = 25^\circ\text{C}$

| SYMBOL     | TEST CONDITIONS         |                      |                      | MINIMUM | TYPICAL | MAXIMUM | UNITS         |
|------------|-------------------------|----------------------|----------------------|---------|---------|---------|---------------|
| $I_{CBO}$  | $V_{CB} = 8.0\text{ V}$ |                      |                      |         |         | 200     | nA            |
| $I_{EBO}$  | $V_{EB} = 1.0\text{ V}$ |                      |                      |         |         | 1.0     | $\mu\text{A}$ |
| $h_{FE}$   | $V_{CE} = 8.0\text{ V}$ | $I_C = 10\text{ mA}$ |                      | 30      | 100     | 300     | ---           |
| $C_{CB}$   | $V_{CB} = 8.0\text{ V}$ |                      | $f = 1.0\text{ MHz}$ |         | 0.18    |         | pF            |
| $P_{1dB}$  | $V_{CE} = 8.0\text{ V}$ | $I_C = 25\text{ mA}$ | $f = 4.0\text{ GHz}$ |         | 19.0    |         | dBm           |
| $G_{1dB}$  | $V_{CE} = 8.0\text{ V}$ | $I_C = 25\text{ mA}$ | $f = 4.0\text{ GHz}$ |         | 9.5     |         | dB            |
| <b>MAG</b> | $V_{CE} = 8.0\text{ V}$ | $I_C = 10\text{ mA}$ | $f = 2.0\text{ GHz}$ |         | 16      |         | dB            |
| $G_A$      | $V_{CE} = 8.0\text{ V}$ | $I_C = 10\text{ mA}$ | $f = 1.0\text{ GHz}$ | 13.0    | 19.0    |         | dB            |
|            |                         |                      | $f = 2.0\text{ GHz}$ |         | 14.0    |         |               |
|            |                         |                      | $f = 4.0\text{ GHz}$ |         | 10.0    |         |               |
| $NF_O$     | $V_{CE} = 8.0\text{ V}$ | $I_C = 10\text{ mA}$ | $f = 1.0\text{ GHz}$ |         | 1.3     | 1.9     | dB            |
|            |                         |                      | $f = 2.0\text{ GHz}$ |         | 1.6     |         |               |
|            |                         |                      | $f = 4.0\text{ GHz}$ |         | 3.0     |         |               |