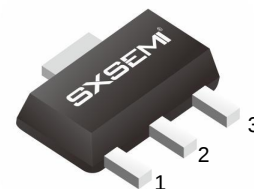


- Excellent DC current gain characteristics
- Complements the 2SB1386

### MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)

| Symbol                            | Parameter                                        | Value   | Unit |
|-----------------------------------|--------------------------------------------------|---------|------|
| V <sub>CB0</sub>                  | Collector-Base Voltage                           | 50      | V    |
| V <sub>CEO</sub>                  | Collector-Emitter Voltage                        | 20      | V    |
| V <sub>EBO</sub>                  | Emitter-Base Voltage                             | 6       | V    |
| I <sub>c</sub>                    | Collector Current -Continuous                    | 5       | A    |
| P <sub>c</sub>                    | Collector Power Dissipation                      | 500     | mW   |
| T <sub>J</sub> , T <sub>stg</sub> | Operation Junction and Storage Temperature Range | -55~150 | °C   |

### SOT-89-3L



1. BASE
2. COLLECTOR
3. EMITTER

**MARKING**:AHQ;AHR

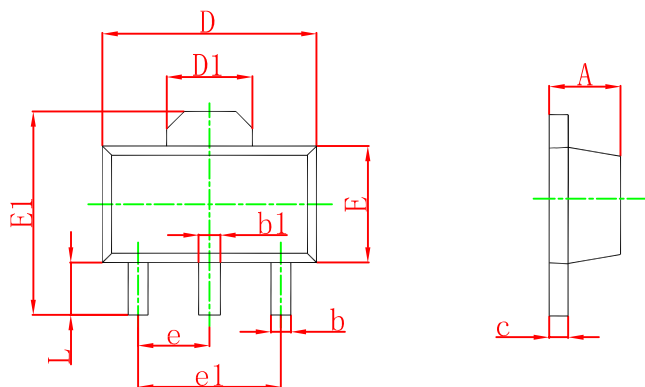
### ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)

| Parameter                            | Symbol               | Test conditions                                     | Min | Typ | Max | Unit |
|--------------------------------------|----------------------|-----------------------------------------------------|-----|-----|-----|------|
| Collector-base breakdown voltage     | V <sub>(BR)CBO</sub> | I <sub>c</sub> =50μA, I <sub>E</sub> =0             | 50  |     |     | V    |
| Collector-emitter breakdown voltage  | V <sub>(BR)CEO</sub> | I <sub>c</sub> =1mA, I <sub>B</sub> =0              | 20  |     |     | V    |
| Emitter-base breakdown voltage       | V <sub>(BR)EBO</sub> | I <sub>E</sub> =50μA, I <sub>C</sub> =0             | 6   |     |     | V    |
| Collector cut-off current            | I <sub>CBO</sub>     | V <sub>CB</sub> =40V, I <sub>E</sub> =0             |     |     | 0.5 | μA   |
| Emitter cut-off current              | I <sub>EBO</sub>     | V <sub>EB</sub> =5V, I <sub>C</sub> =0              |     |     | 0.5 | μA   |
| DC current gain                      | h <sub>FE</sub>      | V <sub>CE</sub> =2V, I <sub>c</sub> =0.5A           | 120 |     | 390 |      |
| Collector-emitter saturation voltage | V <sub>CE(sat)</sub> | I <sub>c</sub> =4A, I <sub>B</sub> =100mA           |     |     | 1   | V    |
| Transition frequency                 | f <sub>T</sub>       | V <sub>CE</sub> =6V, I <sub>c</sub> =50mA, f=100MHz |     | 150 |     | MHz  |
| Collector output capacitance         | C <sub>ob</sub>      | V <sub>CB</sub> =20V, I <sub>E</sub> =0, f=1MHz     |     | 30  |     | pF   |

### CLASSIFICATION OF h<sub>FE</sub>

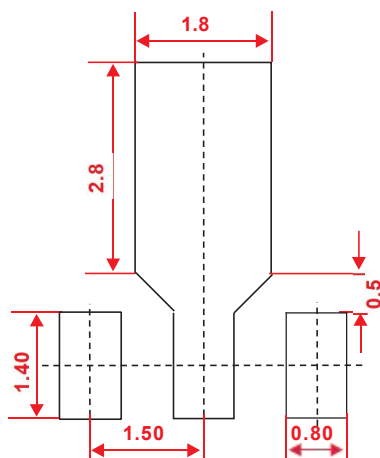
| Rank    | Q       | R       |
|---------|---------|---------|
| Range   | 120-270 | 180-390 |
| Marking | AHQ     | AHR     |

## SOT-89-3L 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-89-3L Suggested Pad Layout



Note:

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