

**Silicon Epitaxial Planar Transistor****2SA1036****FEATURES**

- Large  $I_{C,ICMAX.} = -500\text{mA}$ .
- Low  $V_{CE(sat)}$ . Ideal for low-voltage operation.



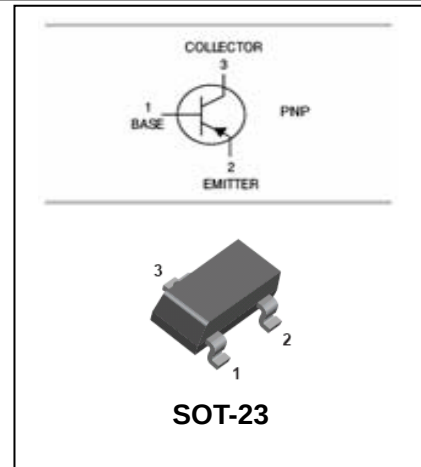
Lead-free

**APPLICATIONS**

- Ideal for low-voltage operation.

**ORDERING INFORMATION**

| Type No. | Marking  | Package Code |
|----------|----------|--------------|
| 2SA1036  | HP,HQ,HR | SOT-23       |

**MAXIMUM RATING @ Ta=25°C unless otherwise specified**

| Symbol         | Parameter                        | Value   | Units |
|----------------|----------------------------------|---------|-------|
| $V_{CBO}$      | Collector-Base Voltage           | -40     | V     |
| $V_{CEO}$      | Collector-Emitter Voltage        | -32     | V     |
| $V_{EBO}$      | Emitter-Base Voltage             | -5      | V     |
| $I_C$          | Collector Current -Continuous    | -500    | mA    |
| $P_C$          | Collector Dissipation            | 200     | mW    |
| $T_j, T_{stg}$ | Junction and Storage Temperature | -55~150 | °C    |

**ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified**

**Silicon Epitaxial Planar Transistor****2SA1036**

| Parameter                            | Symbol        | Test conditions                             | MIN | TYP | MAX  | UNIT    |
|--------------------------------------|---------------|---------------------------------------------|-----|-----|------|---------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C = -100\mu A, I_E = 0$                  | -40 |     |      | V       |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C = -1mA, I_B = 0$                       | -32 |     |      | V       |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E = -100\mu A, I_C = 0$                  | -5  |     |      | V       |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB} = -20V, I_E = 0$                    |     |     | -1   | $\mu A$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB} = -4V, I_C = 0$                     |     |     | -1   | $\mu A$ |
| DC current gain                      | $h_{FE}$      | $V_{CE} = -3V, I_C = -10mA$                 | 82  |     | 390  |         |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = -100mA, I_B = -10mA$                 |     |     | -0.4 | V       |
| Transition frequency                 | $f_T$         | $V_{CE} = -5V, I_C = -20mA$<br>$f = 100MHz$ |     | 200 |      | MHz     |
| Collector output capacitance         | $C_{ob}$      | $V_{CB} = -10V, I_E = 0, f = 1MHz$          |     | 7   |      | pF      |

**CLASSIFICATION OF  $h_{FE(1)}$** 

| Rank  | P      | Q       | R       |
|-------|--------|---------|---------|
| Range | 82-180 | 120-270 | 180-390 |

## Silicon Epitaxial Planar Transistor

**2SA1036**

### TYPICAL CHARACTERISTICS @ $T_a=25^\circ\text{C}$ unless otherwise specified

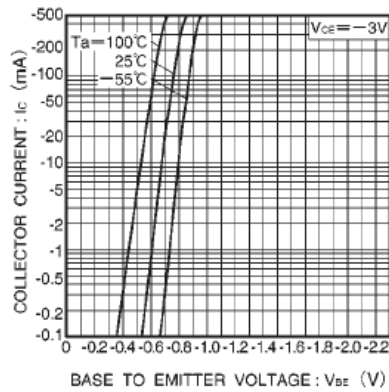


Fig.1 Grounded emitter propagation

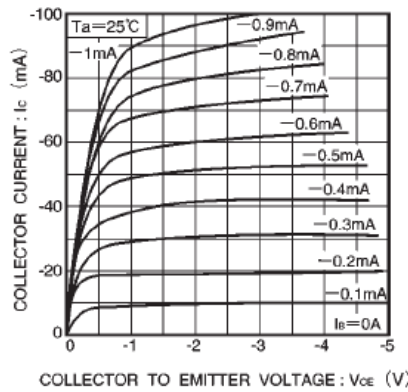


Fig.2 Grounded emitter output characteristics (I)

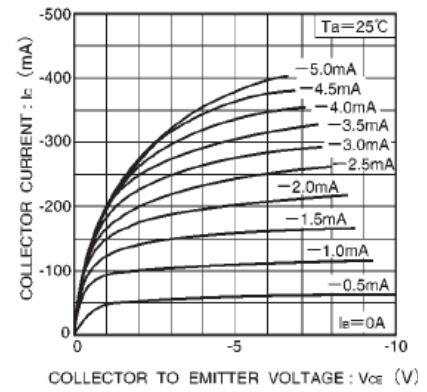


Fig.3 Grounded emitter output characteristics (II)

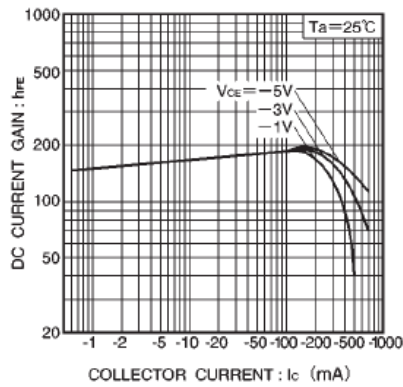


Fig.4 DC current gain vs. collector current (I)

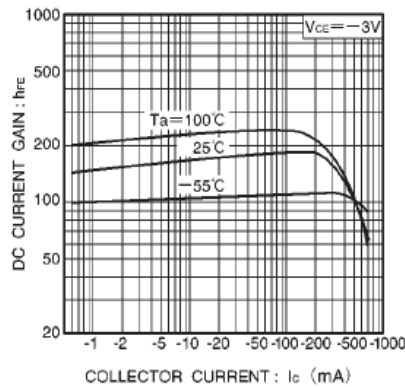


Fig.5 DC current gain vs. collector current (II)

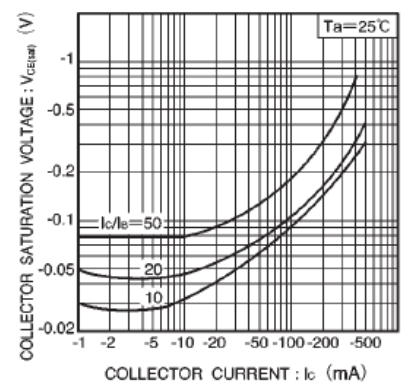


Fig.6 Collector-emitter saturation voltage vs. collector current (I)

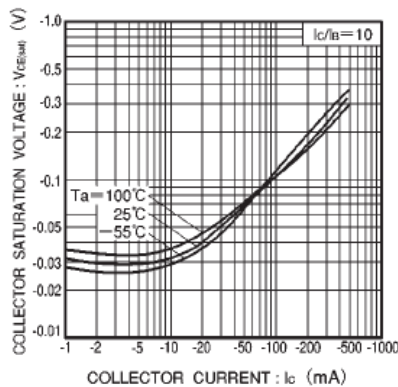


Fig.7 Collector-emitter saturation voltage vs. collector current (II)

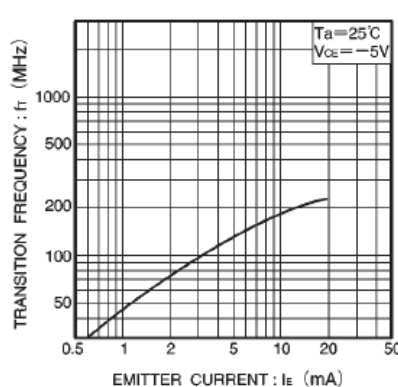


Fig.8 Gain bandwidth product vs. emitter current

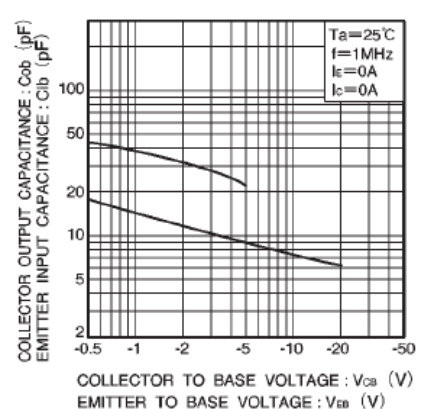


Fig.9 Collector output capacitance vs. collector-base voltage. Emitter input capacitance vs. emitter-base voltage

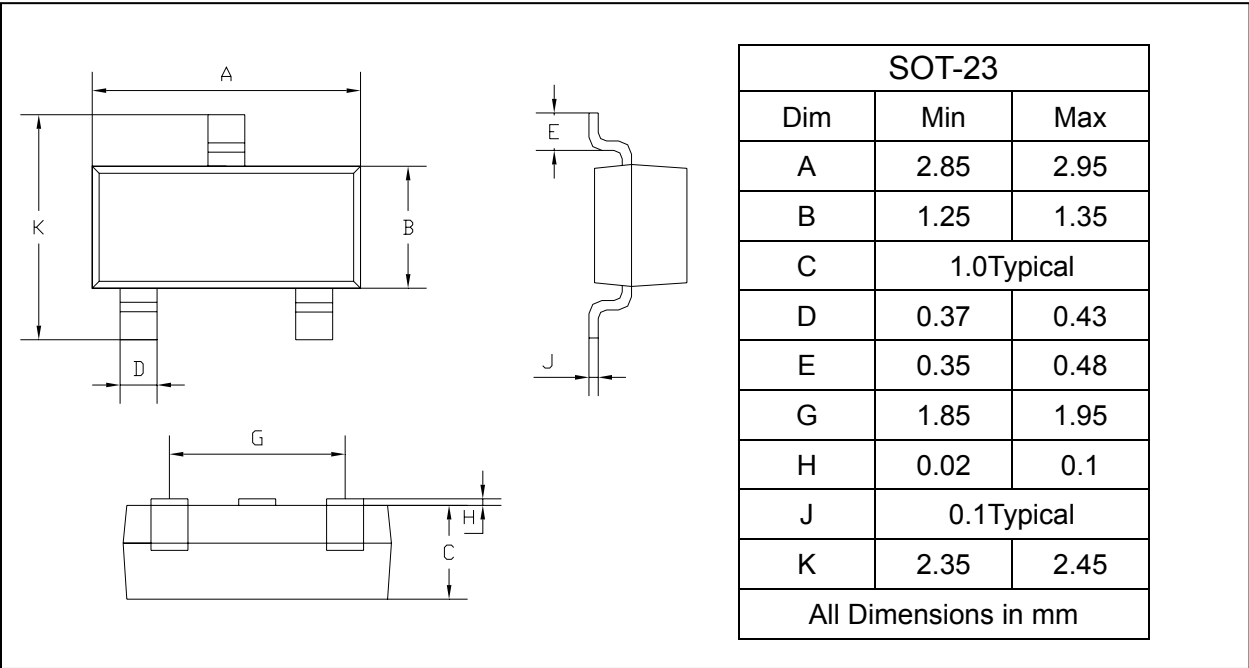
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**2SA1036**

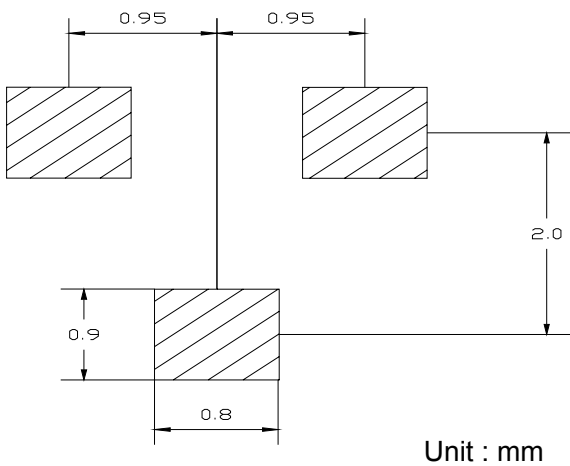
PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



PACKAGE INFORMATION

| Device  | Package | Shipping       |
|---------|---------|----------------|
| 2SA1036 | SOT-23  | 3000/Tape&Reel |