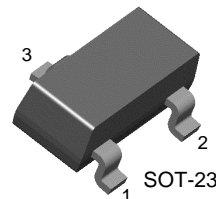


# KST5086/5087

## Low Noise Transistor



SOT-23  
1. Base 2. Emitter 3. Collector

## PNP Epitaxial Silicon Transistor

### Absolute Maximum Ratings $T_a=25^\circ\text{C}$ unless otherwise noted

| Symbol    | Parameter                   | Value | Units            |
|-----------|-----------------------------|-------|------------------|
| $V_{CBO}$ | Collector-Base Voltage      | -50   | V                |
| $V_{CEO}$ | Collector-Emitter Voltage   | -50   | V                |
| $V_{EBO}$ | Emitter-Base Voltage        | -3    | V                |
| $I_C$     | Collector Current           | -50   | mA               |
| $P_C$     | Collector Power Dissipation | 350   | mW               |
| $T_{STG}$ | Storage Temperature         | 150   | $^\circ\text{C}$ |

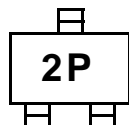
### Electrical Characteristics $T_a=25^\circ\text{C}$ unless otherwise noted

| Symbol        | Parameter                            | Test Condition  | Min. | Max.  | Units |
|---------------|--------------------------------------|---|------|-------|-------|
| $BV_{CBO}$    | Collector-Base Breakdown Voltage     | $I_C = -100\mu\text{A}, I_E = 0$  | -50  |       | V     |
| $BV_{CEO}$    | Collector-Emitter Breakdown Voltage  | $I_C = -1\text{mA}, I_B = 0$  | -50  |       | V     |
| $I_{CBO}$     | Collector Cut-off Current            | $V_{CB} = -20\text{V}, I_E = 0$   |      | -50   | nA    |
| $h_{FE}$      | DC Current Gain                      |   |      |       |       |
|               | : KST5086                            | $V_{CE} = -5\text{V}, I_C = -100\mu\text{A}$  | 150  | 500   |       |
|               | : KST5087                            |   | 250  | 800   |       |
|               | : KST5086                            | $V_{CE} = -5\text{V}, I_C = -1\text{mA}$  | 150  |       |       |
|               | : KST5087                            |   | 250  |       |       |
|               | : KST5086                            | $V_{CE} = -5\text{V}, I_C = -10\text{mA}$   | 150  |       |       |
|               | : KST5087                            |   | 250  |       |       |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = -10\text{mA}, I_B = -1\text{mA}$   |      | -0.3  | V     |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage      | $I_C = -10\text{mA}, I_B = -1\text{mA}$   |      | -0.85 | V     |
| $f_T$         | Current Gain Bandwidth Product       | $V_{CE} = -5\text{V}, I_C = -500\mu\text{A}$<br>$f = 20\text{MHz}$  | 40   |       | MHz   |
| $C_{ob}$      | Output Capacitance                   | $V_{CB} = -5\text{V}, I_E = 0$<br>$f = 100\text{MHz}$   |      | 4     | pF    |
| NF            | Noise Figure                         |   |      |       |       |
|               | : KST5086                            | $I_C = -100\mu\text{A}, V_{CE} = -5\text{V}$<br>$R_S = 3\text{K}\Omega, f = 1\text{KHz}$                  |      | 3     | dB    |
|               | : KST5087                            |   |      | 2     | dB    |
|               | : KST5087                            | $V_{CE} = -5\text{V}, I_C = -20\text{mA}$<br>$R_S = 10\text{K}\Omega, f = 10\text{Hz to } 15.7\text{KHz}$ |      | 2     | dB    |

### Marking Code

| Type | KST5086 | KST5087 |
|------|---------|---------|
| Mark | 2P      | 2Q      |

Marking



# Typical Characteristics

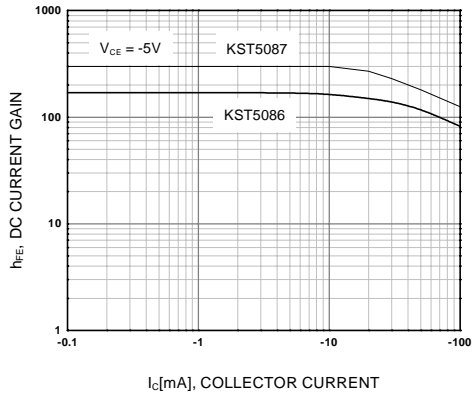


Figure 1. DC current Gain

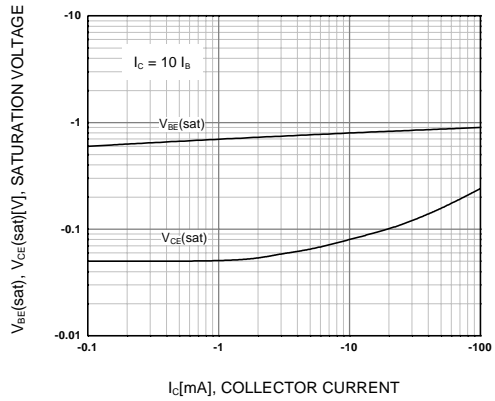


Figure 2. Base-Emitter Saturation Voltage  
Collector-Emmitter Saturation Voltage

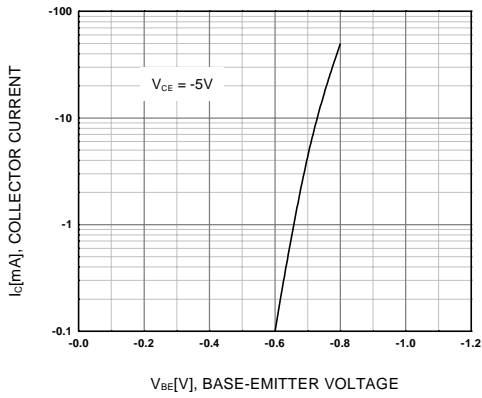


Figure 3. Base-Emitter On Voltage

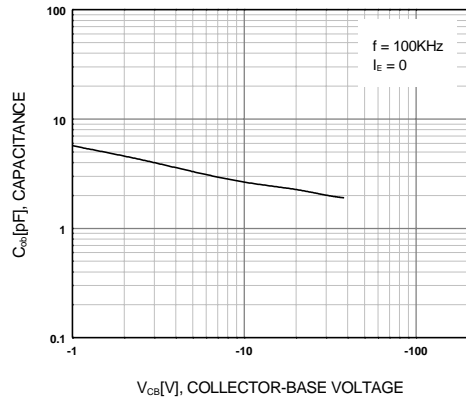


Figure 4. Output Capacitance

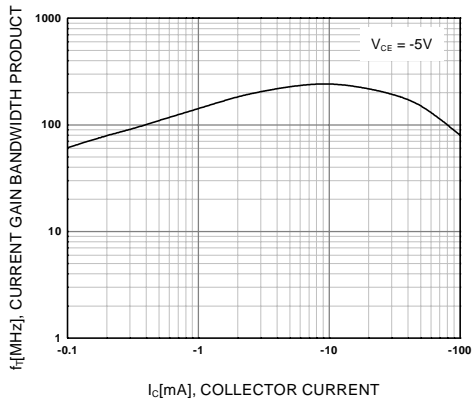
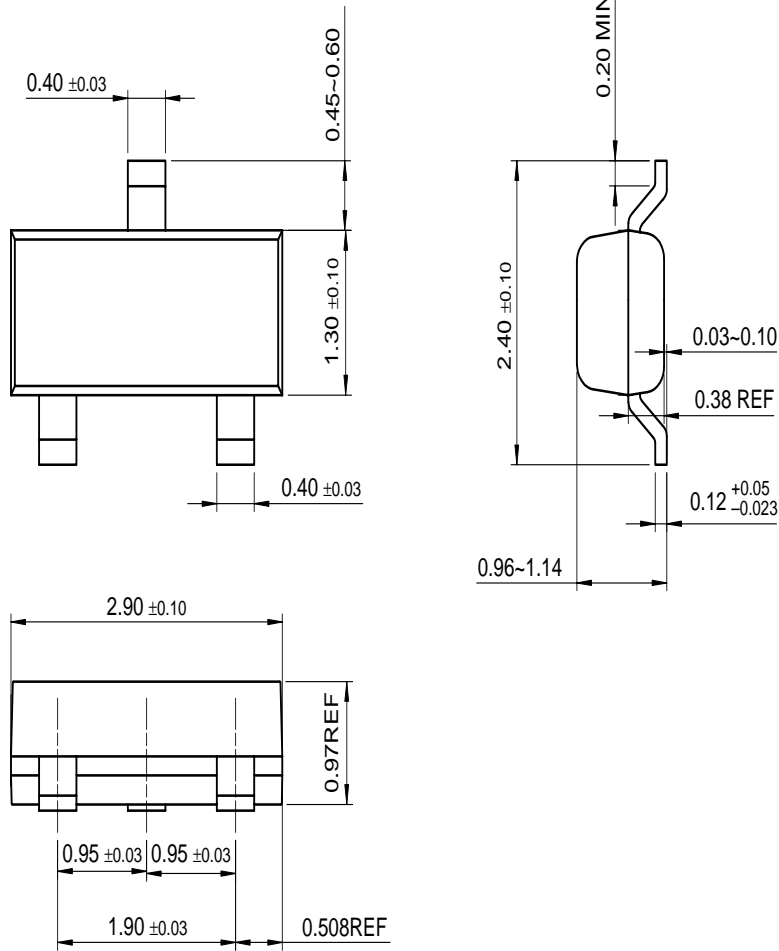


Figure 5. Current Gain Bandwidth Product

# Package Dimensions

## SOT-23

KST5086/5087



Dimensions in Millimeters

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