

# KSA1015

## LOW FREQUENCY AMPLIFIER

- Collector-Base Voltage :  $V_{CBO} = -50V$
- Complement to KSC1815



## PNP Epitaxial Silicon Transistor

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

| Symbol    | Parameter                   | Ratings   | Units      |
|-----------|-----------------------------|-----------|------------|
| $V_{CBO}$ | Collector-Base Voltage      | -50       | V          |
| $V_{CEO}$ | Collector-Emitter Voltage   | -50       | V          |
| $V_{EBO}$ | Emitter-Base Voltage        | -5        | V          |
| $I_C$     | Collector Current           | -150      | mA         |
| $I_B$     | Base Current                | -50       | mA         |
| $P_C$     | Collector Power Dissipation | 400       | mW         |
| $T_J$     | Junction Temperature        | 125       | $^\circ C$ |
| $T_{ST9}$ | Storage Temperature         | -65 ~ 150 | $^\circ C$ |

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

| Symbol                 | Parameter                            | Test Condition   | Min.     | Typ. | Max. | Units   |
|------------------------|--------------------------------------|--|----------|------|------|---------|
| $BV_{CBO}$             | Collector-Base Breakdown Voltage     | $I_C = -100\mu A, I_E = 0$                                   | -50      |      |      | V       |
| $BV_{CEO}$             | Collector-Emitter Breakdown Voltage  | $I_C = -10mA, I_B = 0$                                       | -50      |      |      | V       |
| $BV_{EBO}$             | Emitter-Base Breakdown Voltage       | $I_E = -10\mu A, I_C = 0$                                    | -5       |      |      | V       |
| $I_{CBO}$              | Collector Cut-off Current            | $V_{CB} = -50V, I_E = 0$                                     |          |      | -0.1 | $\mu A$ |
| $I_{EBO}$              | Emitter Cut-off Current              | $V_{EB} = -5V, I_C = 0$                                      |          |      | -0.1 | $\mu A$ |
| $h_{FE1}$<br>$h_{FE2}$ | DC Current Gain                      | $V_{CE} = -6V, I_C = -2mA$<br>$V_{CE} = -6V, I_C = -150mA$   | 70<br>25 |      | 400  |         |
| $V_{CE(sat)}$          | Collector-Emitter Saturation Voltage | $I_C = -100mA, I_B = -10mA$                                  |          | -0.1 | -0.3 | V       |
| $V_{BE(sat)}$          | Base-Emitter Saturation Voltage      | $I_C = -100mA, I_B = -10mA$                                  |          |      | -1.1 | V       |
| $f_T$                  | Current Gain Bandwidth Product       | $V_{CE} = -10V, I_C = -1mA$                                  | 80       |      |      | MHz     |
| $C_{ob}$               | Output Capacitance                   | $V_{CB} = -10V, I_E = 0, f = 1MHz$                           |          | 4    | 7    | pF      |
| NF                     | Noise Figure                         | $V_{CE} = -6V, I_C = -0.1mA$<br>$f = 100Hz, R_G = 10k\Omega$ |          | 0.5  | 6    | dB      |

### $h_{FE}$ Classification

| Classification | O        | Y         | GR        |
|----------------|----------|-----------|-----------|
| $h_{FE1}$      | 70 ~ 140 | 120 ~ 240 | 200 ~ 400 |

# Typical Characteristics

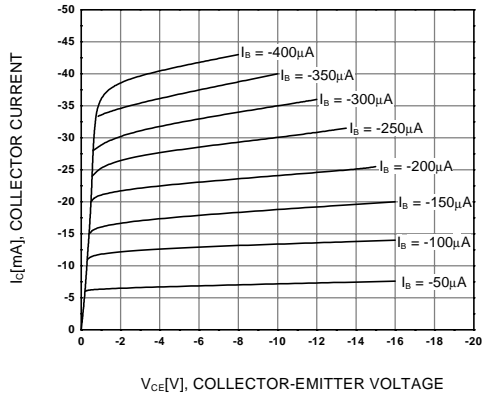


Figure 1. Static Characteristic

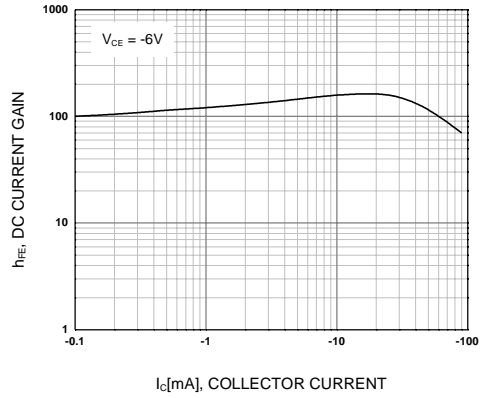


Figure 2. DC current Gain

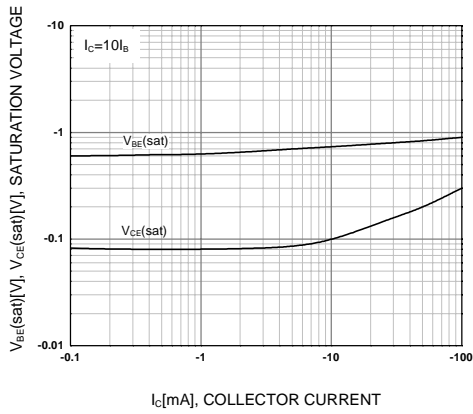


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

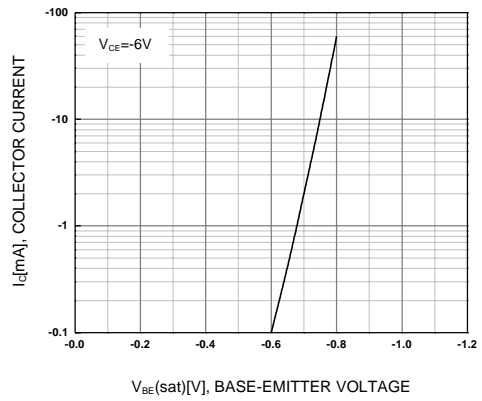


Figure 4. Base-Emitter On Voltage

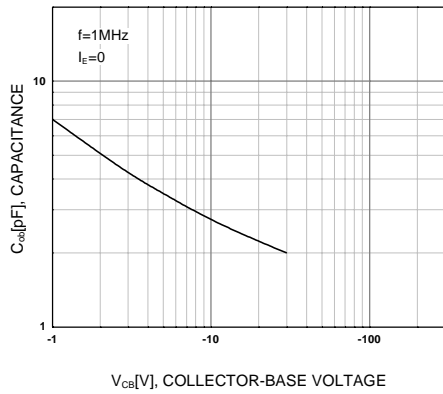


Figure 5. Collector Output Capacitance

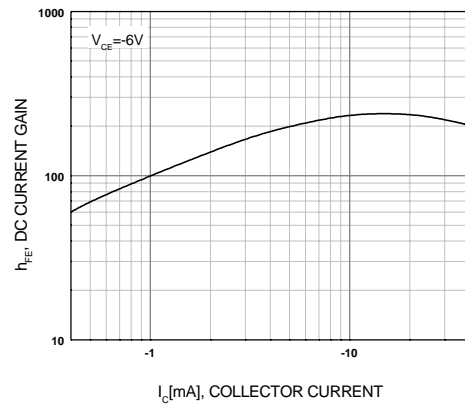


Figure 6. Current Gain Bandwidth Product

# Package Dimensions

KSA1015

## TO-92



Dimensions in Millimeters

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