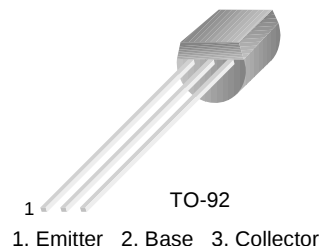


# KSP8098/8099

KSP8098/8099

## Amplifier Transistor

- Collector-Emitter Voltage:  $V_{CE0}$  KSP8098: 60V  
KSP8099: 80V
- Collector Power Dissipation:  $P_C$  (max)=625mW
- Suffix "-C" means Center Collector (1. Emitter 2. Collector 3. Base)



## NPN Epitaxial Silicon Transistor

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

| Symbol    | Parameter                   | Value     | Units            |
|-----------|-----------------------------|-----------|------------------|
| $V_{CBO}$ | Collector-Base Voltage      |           |                  |
|           | : KSP8098                   | 60        | V                |
|           | : KSP8099                   | 80        | V                |
| $V_{CEO}$ | Collector-Emitter Voltage   |           |                  |
|           | : KSP8098                   | 60        | V                |
|           | : KSP8099                   | 80        | V                |
| $V_{EBO}$ | Emitter-Base Voltage        | 6         | V                |
| $I_C$     | Collector Current           | 500       | mA               |
| $P_C$     | Collector Power Dissipation | 625       | mW               |
| $T_J$     | Junction Temperature        | 150       | $^\circ\text{C}$ |
| $T_{STG}$ | Storage Temperature         | -55 ~ 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      | $I_C=100\mu\text{A}$ , $I_E=0$                              |      |      |       |
|                      | : KSP8098                             |                                                             | 60   |      | V     |
|                      | : KSP8099                             |                                                             | 80   |      | V     |
| $BV_{CEO}$           | * Collector-Emitter Breakdown Voltage | $I_C=10\text{mA}$ , $I_B=0$                                 |      |      |       |
|                      | : KSP8098                             |                                                             | 60   |      | V     |
|                      | : KSP8099                             |                                                             | 80   |      | V     |
| $BV_{EBO}$           | Emitter-Base Breakdown Voltage        | $I_E=10\mu\text{A}$ , $I_C=0$                               | 6    |      | V     |
| $I_{CBO}$            | Collector Cut-off Current             |                                                             |      |      |       |
|                      | : KSP8098                             | $V_{CB}=60\text{V}$ , $I_E=0$                               |      | 100  | nA    |
|                      | : KSP8099                             | $V_{CB}=80\text{V}$ , $I_E=0$                               |      | 100  | nA    |
| $I_{CEO}$            | Collector Cut-off Current             | $V_{CE}=60\text{V}$ , $I_B=0$                               |      | 100  | nA    |
| $I_{EBO}$            | Emitter Cut-off Current               | $V_{EB}=6\text{V}$ , $I_C=0$                                |      | 100  | nA    |
| $h_{FE}$             | DC Current Gain                       | $V_{CE}=5\text{V}$ , $I_C=1\text{mA}$                       | 100  | 300  |       |
|                      |                                       | $V_{CE}=5\text{V}$ , $I_C=10\text{mA}$                      | 100  |      |       |
|                      |                                       | $V_{CE}=5\text{V}$ , $I_C=100\text{mA}$                     | 75   |      |       |
| $V_{CE}(\text{sat})$ | Collector-Emitter Saturation Voltage  | $I_C=100\text{mA}$ , $I_B=5\text{mA}$                       |      | 0.4  | V     |
|                      |                                       | $I_C=100\text{mA}$ , $I_B=10\text{mA}$                      |      | 0.3  | V     |
| $V_{BE}(\text{on})$  | * Base-Emitter On Voltage             |                                                             |      |      |       |
|                      |                                       | : KSP8098                                                   | 0.5  | 0.7  | V     |
|                      | : KSP8099                             | $V_{CE}=5\text{V}$ , $I_C=10\text{mA}$                      | 0.6  | 0.8  | V     |
| $f_T$                | Current Gain Bandwidth Product        | $V_{CE}=5\text{V}$ , $I_C=10\text{mA}$<br>$f=100\text{MHz}$ | 150  |      | MHz   |
| $C_{ob}$             | Output Capacitance                    | $V_{CB}=5\text{V}$ , $I_E=0$<br>$f=1\text{MHz}$             |      | 6    | pF    |

\* Pulse Test: Pulse Width $\leq$ 300 $\mu\text{s}$ , Duty Cycle $\leq$ 2%

## Typical Characteristics

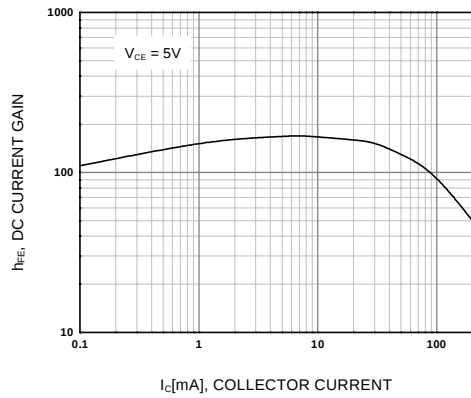


Figure 1. DC current Gain

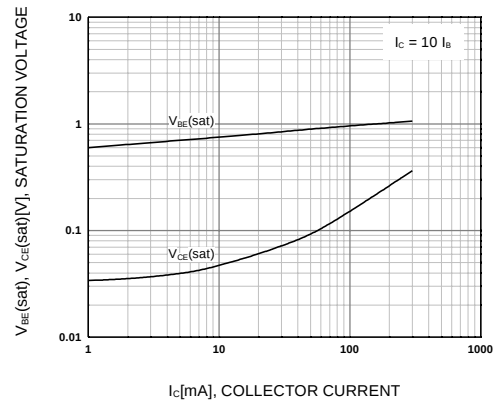


Figure 2. Collector-Emitter Saturation Voltage  
Base-Emitter Saturation Voltage

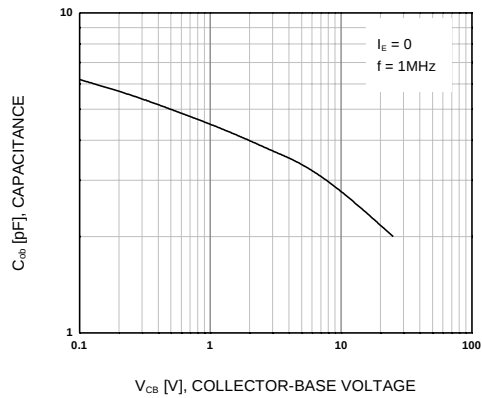


Figure 3. Output Capacitance

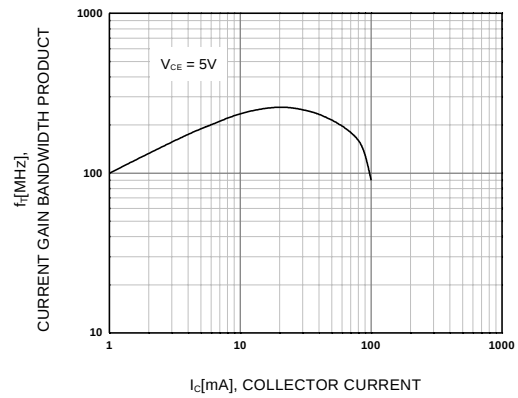
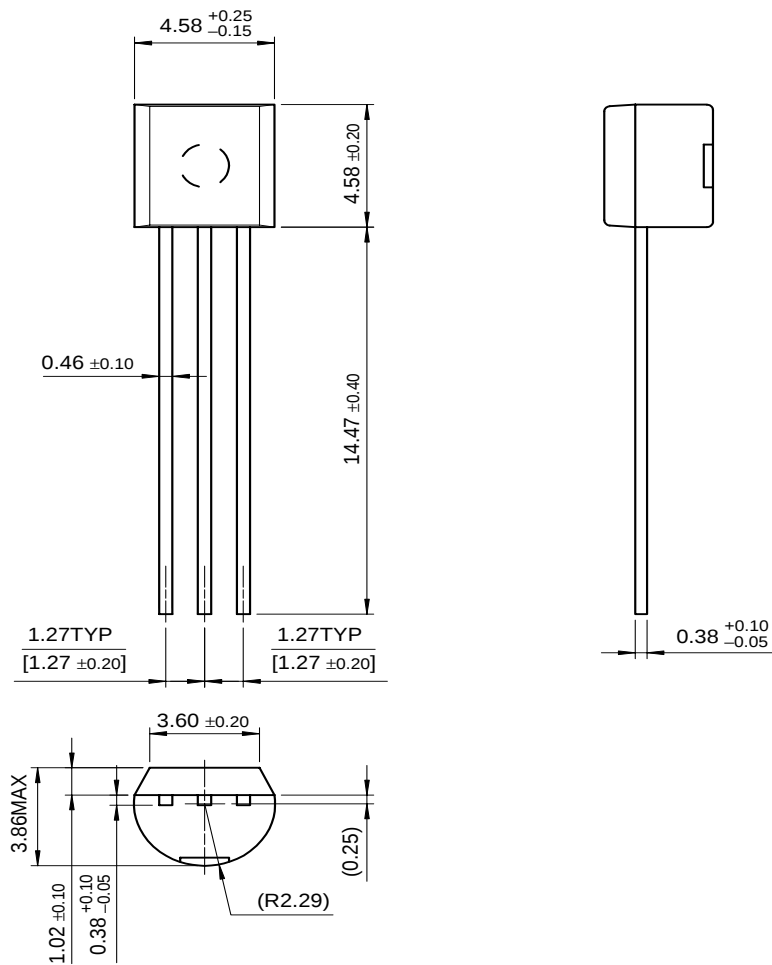


Figure 4. Current Gain Bandwidth Product

# Package Dimensions

## TO-92



Dimensions in Millimeters

KSP8098/8099

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