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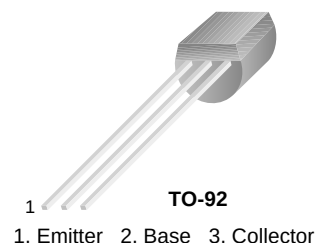
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# KSD471A

## NPN Epitaxial Silicon Transistor

### Features

- Audio Frequency Power Amplifier
- Complement to KSB564A
- Collector Current:  $I_C = 1\text{ A}$
- Collector Power Dissipation:  $P_C = 800\text{ mW}$
- Suffix "-C" means Center Collector  
(1. Emitter 2. Collector 3. Base)



### Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

| Symbol    | Parameter                   | Ratings     | Unit             |
|-----------|-----------------------------|-------------|------------------|
| $V_{CBO}$ | Collector-Base Voltage      | 40          | V                |
| $V_{CEO}$ | Collector-Emitter Voltage   | 30          | V                |
| $V_{EBO}$ | Emitter-Base Voltage        | 5           | V                |
| $I_C$     | Collector Current           | 1           | A                |
| $P_C$     | Collector Power Dissipation | 800         | mW               |
| $T_J$     | Junction Temperature        | 150         | $^\circ\text{C}$ |
| $T_{STG}$ | Storage Temperature         | -55 to +150 | $^\circ\text{C}$ |

## Electrical Characteristics

Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

| Symbol        | Parameter                            | Test Condition                                          | Min. | Typ. | Max. | Unit          |
|---------------|--------------------------------------|---------------------------------------------------------|------|------|------|---------------|
| $BV_{CBO}$    | Collector-Base Breakdown Voltage     | $I_C = 100\ \mu\text{A}, I_E = 0$                       | 40   |      |      | V             |
| $BV_{CEO}$    | Collector-Emitter Breakdown Voltage  | $I_C = 10\ \text{mA}, I_B = 0$                          | 30   |      |      | V             |
| $BV_{EBO}$    | Emitter-Base Breakdown Voltage       | $I_E = 100\ \mu\text{A}, I_C = 0$                       | 5    |      |      | V             |
| $I_{CBO}$     | Collector Cut-off Current            | $V_{CB} = 30\ \text{V}, I_E = 0$                        |      |      | 0.1  | $\mu\text{A}$ |
| $h_{FE}$      | DC Current Gain                      | $V_{CE} = 1\ \text{V}, I_C = 100\ \text{mA}$            | 120  |      | 400  |               |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = 1\ \text{A}, I_B = 0.1\ \text{A}$                |      |      | 0.5  | V             |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage      | $I_C = 1\ \text{A}, I_B = 0.1\ \text{A}$                |      |      | 1.2  | V             |
| $f_T$         | Current Gain BandWidth Product       | $V_{CE} = 6\ \text{V}, I_C = 10\ \text{mA}$             |      | 130  |      | MHz           |
| $C_{ob}$      | Output Capacitance                   | $V_{CB} = 6\ \text{V}, I_E = 0,$<br>$f = 1\ \text{MHz}$ |      | 16   |      | pF            |

## $h_{FE}$ Classification

| Classification | Y         | G         |
|----------------|-----------|-----------|
| $h_{FE}$       | 120 ~ 240 | 200 ~ 400 |

## Typical Performance Characteristics

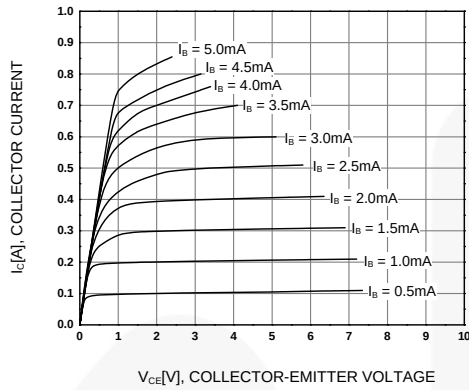


Figure 1. Static Characteristic

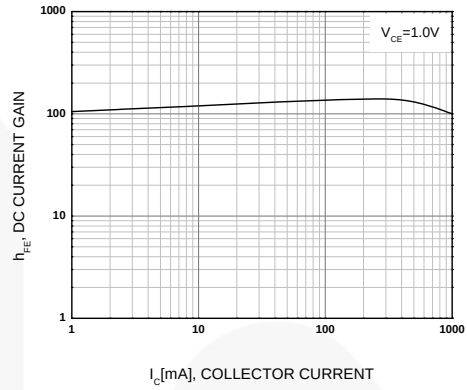


Figure 2. DC current Gain

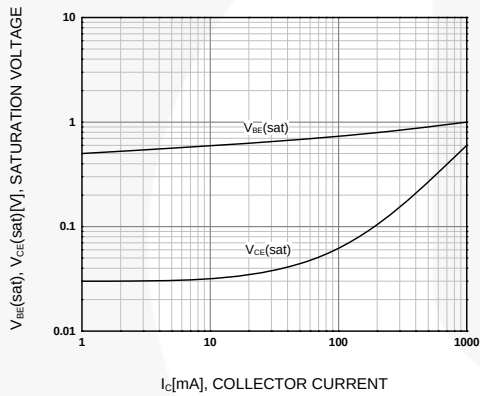


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

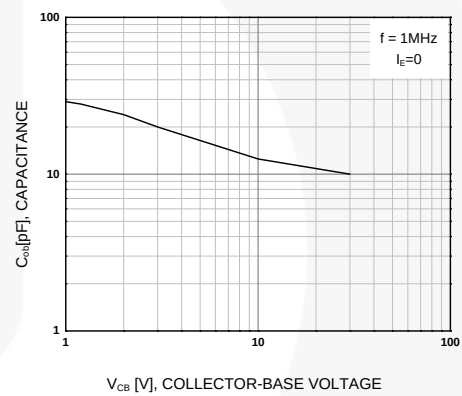


Figure 4. Collector Output Capacitance

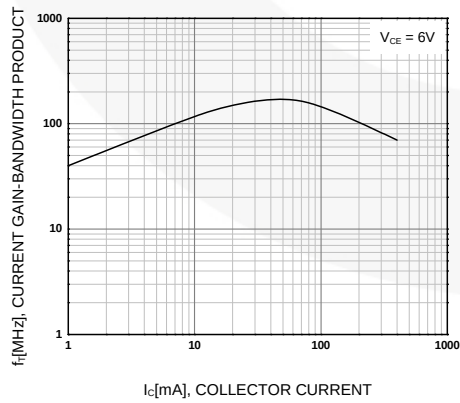


Figure 5. Current Gain Bandwidth Product

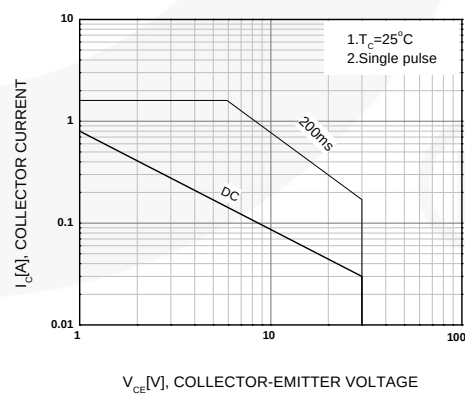


Figure 6. Safe Operating Area

## Physical Dimensions

## TO-92

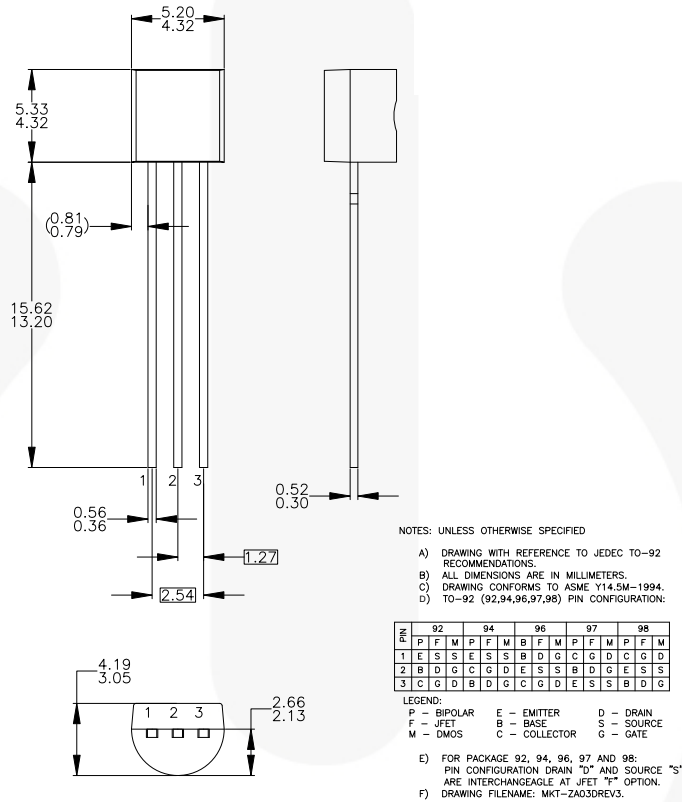


Figure 7. 3LEAD, TO92, JEDEC TO-92 COMPLIANT STRAIGHT LEAD CONFIGURATION (OLD TO92AM3)

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| FastvCore™                                                                        | OPTOLOGIC®                                     | SyncFET™                                                                          | XS™                                                                                 |
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