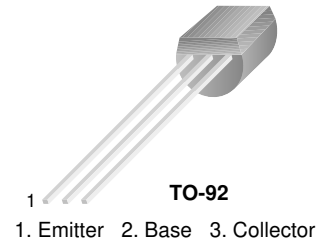


# KSD471A

## 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

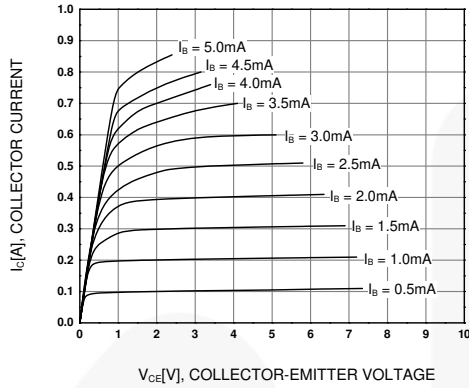
Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

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

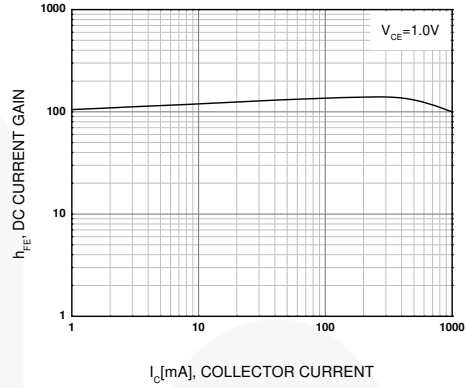
## $h_{FE}$ Classification

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

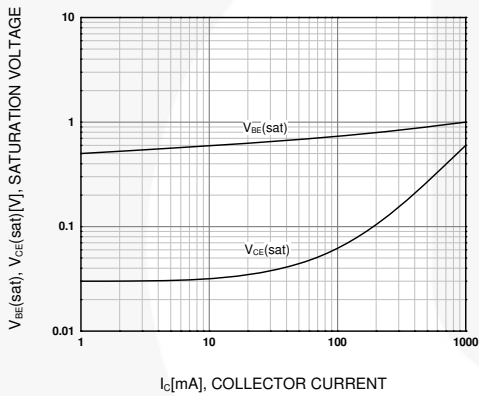
## Typical Performance Characteristics



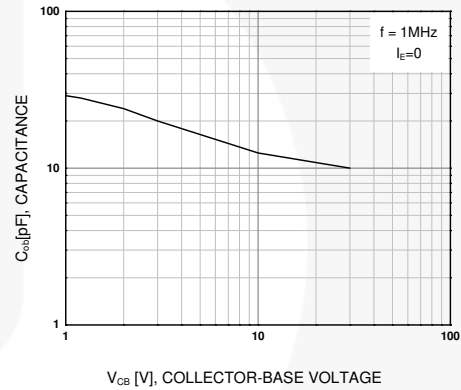
**Figure 1. Static Characteristic**



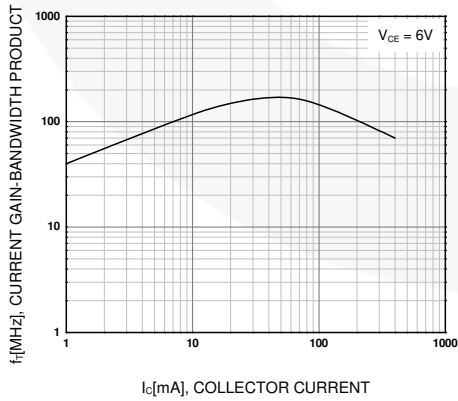
**Figure 2. DC current Gain**



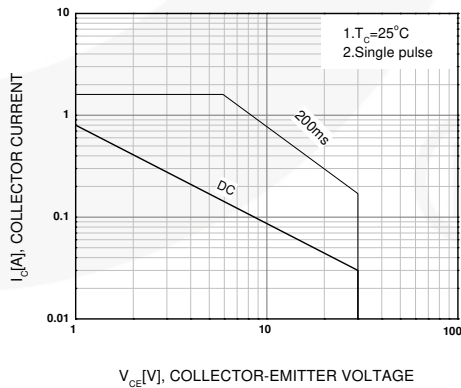
**Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage**



**Figure 4. Collector Output Capacitance**



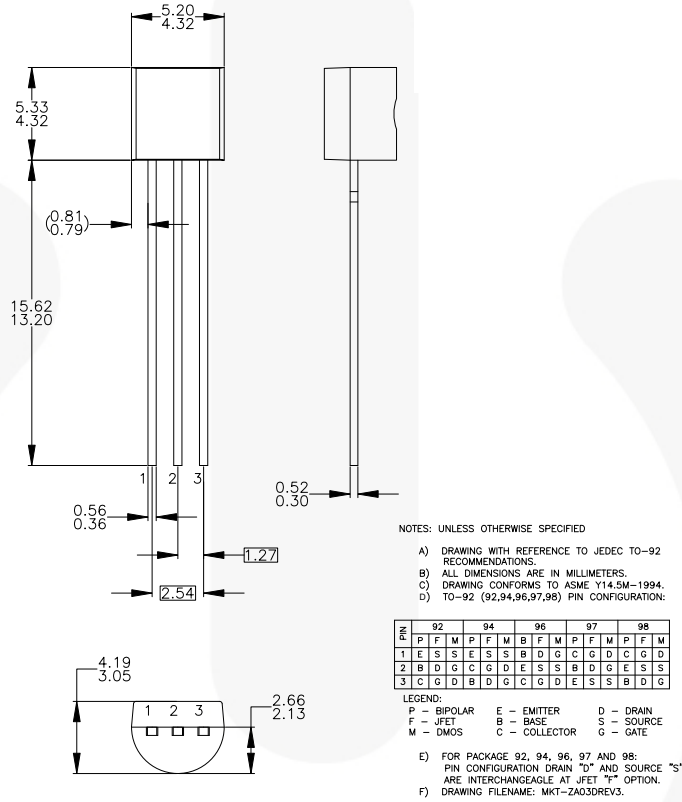
**Figure 5. Current Gain Bandwidth Product**



**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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| AccuPower™  | F-PFS™   | PowerTrench®  |  |
| AX-CAP®*  | FRFET®   | PowerXS™  | TinyBoost™  |
| BitSiC™   | Global Power Resource <sup>SM</sup>            | Programmable Active Droop™  | TinyBuck™   |
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| CorePLUS™   | Green FPS™                                     | QS™   | TinyLogic®  |
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|  | MicroPak™                                      | STEALTH™  | UHC®  |
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| FastvCore™  | OPTOLOGIC®                                     | SyncFET™  | XS™   |
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