



September 2015



# KSD261 NPN Epitaxial Silicon Transistor

## Features

- Low Frequency Power Amplifier
- Complement to KSA643
- Collector Power Dissipation :  $P_C = 500 \text{ mW}$
- Suffix “-C” means Center Collector (1. Emitter 2. Collector 3. Base)
- Non Suffix “-C” means Side Collector (1. Emitter 2. Base 3. Collector)



## Ordering Information

Part Number	Top Mark	Package	Packing Method
KSD261CGTA	D261	TO-92 3L	Ammo

## 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	Value	Unit
$V_{CBO}$	Collector-Base Voltage	40	V
$V_{CEO}$	Collector-Emitter Voltage	20	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current	500	mA
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	-55 to 150	$^\circ\text{C}$

**Thermal Characteristics<sup>(1)</sup>**

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

Symbol	Parameter	Value	Unit
$P_C$	Collector Power Dissipation	500	mW
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	250	$^\circ\text{C}/\text{W}$

**Note:**

1. PCB size: FR-4, 76 mm x 114 mm x 1.57 mm (3.0 inch x 4.5 inch x 0.062 inch) with minimum land pattern size.

**Electrical Characteristics**

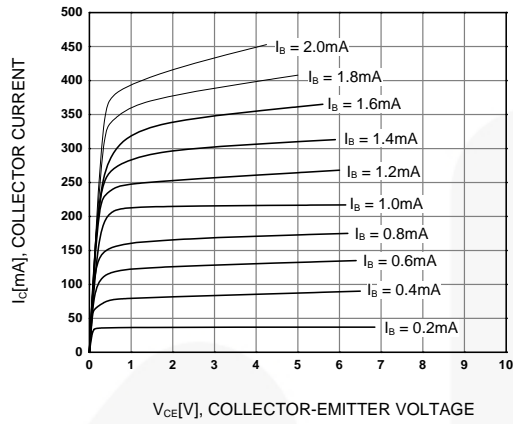
Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

Symbol	Parameter	Conditions	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	$I_C = 10\ \text{mA}$ , $I_B = 0$	20			V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E = 100\ \mu\text{A}$ , $I_C = 0$	5			V
$I_{CBO}$	Collector Cut-Off Current	$V_{CB} = 25\ \text{V}$ , $I_E = 0$			0.1	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-Off Current	$V_{EB} = 3\ \text{V}$ , $I_C = 0$			0.1	$\mu\text{A}$
$h_{FE}$	DC Current Gain	$V_{CE} = 1\ \text{V}$ , $I_C = 0.1\ \text{A}$	120		400	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 0.5\ \text{A}$ , $I_B = 50\ \text{mA}$		0.18	0.40	V

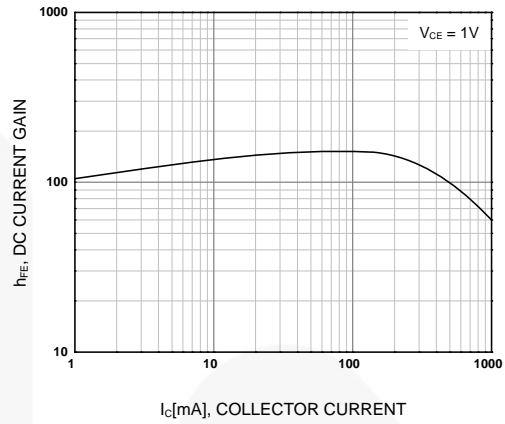
 **$h_{FE}$  Classification**

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

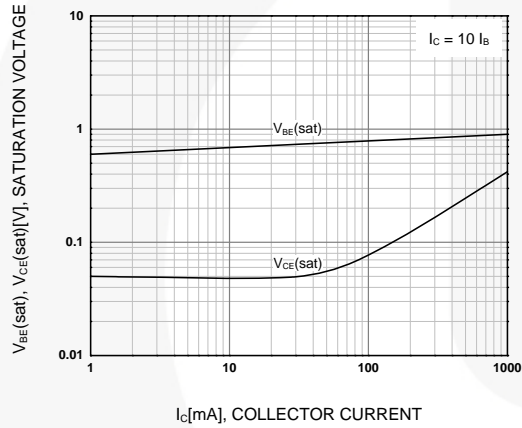
## Typical Performance Characteristics



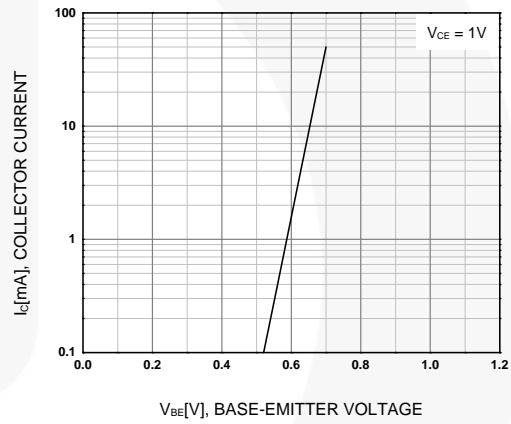
**Figure 1. Static Characteristic**



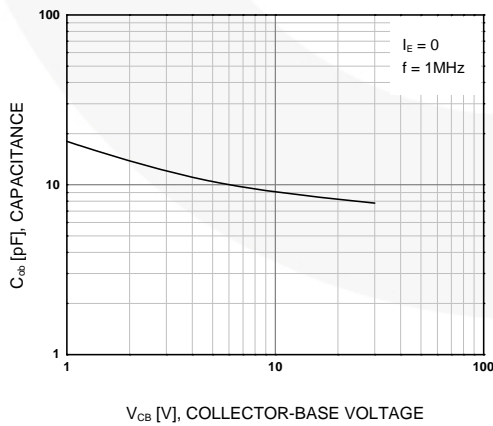
**Figure 2. DC Current Gain**



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

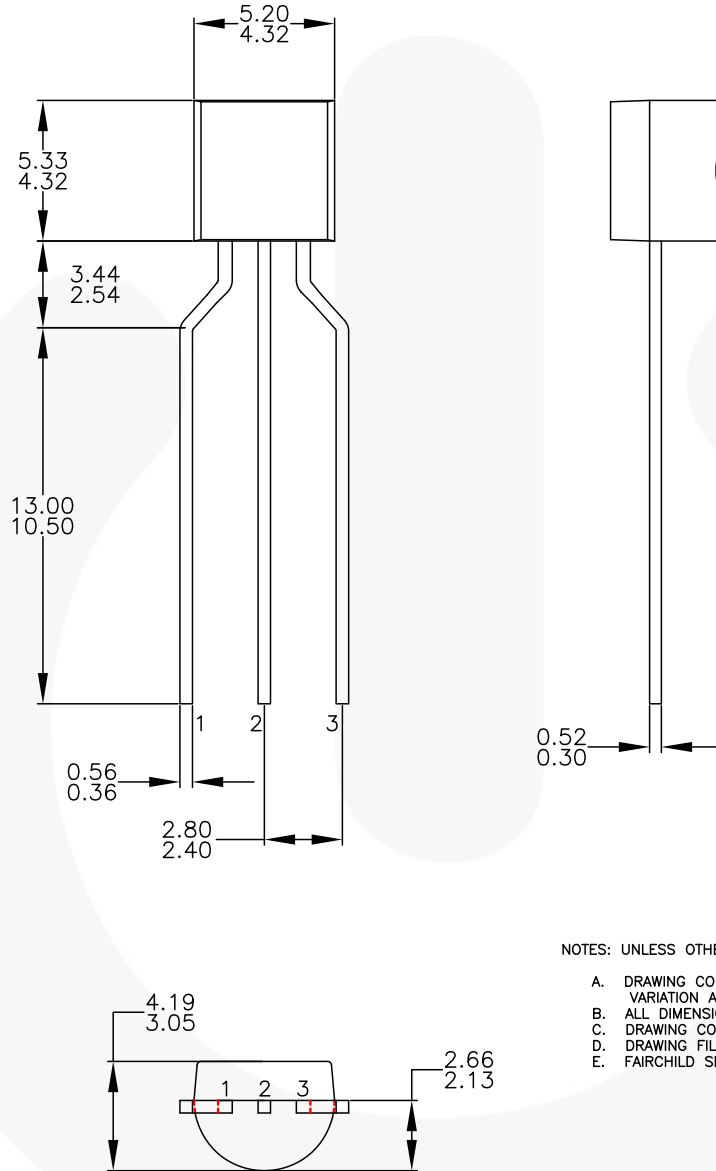


**Figure 4. Base-Emitter On Voltage**



**Figure 5. Collector Output Capacitance**

Physical Dimensions



NOTES: UNLESS OTHERWISE SPECIFIED

- A. DRAWING CONFORMS TO JEDEC MS-013, VARIATION AC.
- B. ALL DIMENSIONS ARE IN MILLIMETERS.
- C. DRAWING CONFORMS TO ASME Y14.5M-2009.
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Figure 6. 3-Lead, TO-92, Molded, 0.2 In Line Spacing Lead Form, Ammo Type



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