

RoHS Compliant Product  
A suffix of "-C" specifies halogen & lead-free

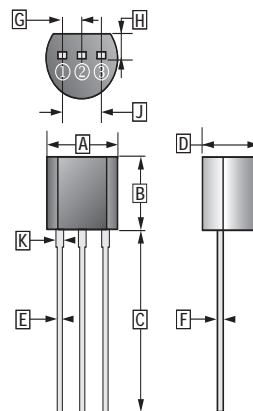
## FEATURES

- High Breakdown Voltage
- Low Transition Frequency

## CLASSIFICATION OF $h_{FE}$

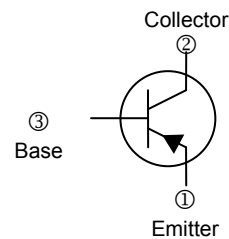
Product-Rank	2SA821-N	2SA821-P	2SA821-Q
Range	56~120	82~180	82~180

## TO-92



① Emitter  
② Collector  
③ Base

REF.	Millimeter	
	Min.	Max.
A	4.40	4.70
B	4.30	4.70
C	12.70	-
D	3.30	3.81
E	0.36	0.56
F	0.36	0.51
G	1.27 TYP.	
H	1.10	-
J	2.42	2.66
K	0.36	0.76



## ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	$V_{CBO}$	-210	V
Collector to Emitter Voltage	$V_{CEO}$	-210	V
Emitter to Base Voltage	$V_{EBO}$	-5	V
Collector Current - Continuous	$I_C$	-30	mA
Collector Power Dissipation	$P_C$	250	mW
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	500	$^\circ\text{C} / \text{W}$
Junction, Storage Temperature	$T_J, T_{STG}$	150, -55~150	$^\circ\text{C}$

## ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test condition
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	-210	-	-	V	$I_C = -0.05\text{mA}, I_E = 0$
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	-210	-	-	V	$I_C = -0.1\text{mA}, I_B = 0$
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	-5	-	-	V	$I_E = -0.05\text{mA}, I_C = 0$
Collector Cut-Off Current	$I_{CBO}$	-	-	-1	$\mu\text{A}$	$V_{CB} = -150\text{V}, I_E = 0$
Emitter Cut-Off Current	$I_{EBO}$	-	-	-1	$\mu\text{A}$	$V_{EB} = -4.5\text{V}, I_C = 0$
DC Current Gain	$h_{FE}$	56	-	270		$V_{CE} = -3\text{V}, I_C = -5\text{mA}$
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	-	-	-0.6	V	$I_C = -2\text{mA}, I_B = -0.2\text{mA}$
Transition Frequency	$f_T$	-	50	-	MHz	$V_{CE} = -5\text{V}, I_C = -2\text{mA}$
Collector Output Capacitance	$C_{ob}$	-	8	-	pF	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$