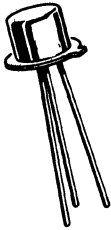


2N721 (SILICON)



CASE 22
(TO-18)

Collector connected to case

PNP silicon annular transistor for high-frequency general-purpose amplifier applications.

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	35	Vdc
Collector-Emitter Voltage	V_{CER}	50	Vdc
Collector - Base Voltage	V_{CB}	50	Vdc
Emitter - Base Voltage	V_{EB}	5.0	Vdc
Total Device Dissipation @ $T_A=25^\circ\text{C}$ (Derate above 25°C)	P_D	0.40 2.67	Watts mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C=25^\circ\text{C}$ $T_C=100^\circ\text{C}$ (Derate above 25°C)	P_D	1.5 0.75 10	Watts mW/ $^\circ\text{C}$
Operating & Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200	$^\circ\text{C}$

2N721 (continued)

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

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Sustaining Voltage* ($I_C = 100\text{ mAdc}$, $I_B = 0$)	$BV_{CEO(sus)}^*$	35	-	Vdc
Collector-Emitter Sustaining Voltage* ($I_C = 100\text{ mAdc}$, $R_{BE} \leq 100\text{ ohms}$)	$BV_{CER(sus)}^*$	50	-	Vdc
Collector-Base Breakdown Voltage ($I_C = 100\text{ }\mu\text{A}$, $I_E = 0$)	BV_{CBO}	50	-	Vdc
Collector Cutoff Current ($V_{CB} = 30\text{ Vdc}$, $I_E = 0$) ($V_{CB} = 30\text{ Vdc}$, $I_E = 0$, $T_A = 150^\circ\text{C}$)	I_{CBO}	-	1.0 100	μA
Emitter Cutoff Current ($V_{BE} = 2.0\text{ Vdc}$, $I_C = 0$)	I_{EBO}	-	100	μA

ON CHARACTERISTICS

DC Current Gain* ($I_C = 150\text{ mAdc}$, $V_{CE} = 10\text{ Vdc}$) ($I_C = 5.0\text{ mAdc}$, $V_{CE} = 10\text{ Vdc}$)	h_{FE}^*	20 15	45 -	-
Collector-Emitter Saturation Voltage ($I_C = 150\text{ mAdc}$, $I_B = 15\text{ mAdc}$)	$V_{CE(sat)}$	-	1.5	Vdc
Base-Emitter Saturation Voltage ($I_C = 150\text{ mAdc}$, $I_B = 15\text{ mAdc}$)	$V_{BE(sat)}$	-	1.3	Vdc

SMALL SIGNAL CHARACTERISTICS

Current-Gain - Bandwidth Product ($I_C = 50\text{ mAdc}$, $V_{CE} = 10\text{ Vdc}$, $f = 20\text{ MHz}$)	f_T	50	-	MHz
Output Capacitance ($V_{CB} = 10\text{ Vdc}$, $I_E = 0$, $f = 100\text{ kHz}$)	C_{ob}	-	45	pF
Input Capacitance ($V_{BE} = 0.5\text{ Vdc}$, $I_C = 0$)	C_{ib}	-	100	pF
Input Impedance ($I_C = 1.0\text{ mAdc}$, $V_{CB} = 5.0\text{ Vdc}$, $f = 1.0\text{ kHz}$) ($I_C = 5.0\text{ mAdc}$, $V_{CB} = 10\text{ Vdc}$, $f = 1.0\text{ kHz}$)	h_{ib}	25 -	35 10	ohms
Voltage Feedback Ratio ($I_C = 1.0\text{ mAdc}$, $V_{CB} = 5.0\text{ Vdc}$, $f = 1.0\text{ kHz}$) ($I_C = 5.0\text{ mAdc}$, $V_{CB} = 10\text{ Vdc}$, $f = 1.0\text{ kHz}$)	h_{rb}	- -	8.0 8.0	$\times 10^{-4}$
Small Signal Current Gain ($I_C = 1.0\text{ mAdc}$, $V_{CE} = 5.0\text{ Vdc}$, $f = 1.0\text{ kHz}$) ($I_C = 5.0\text{ mAdc}$, $V_{CE} = 10\text{ Vdc}$, $f = 1.0\text{ kHz}$)	h_{fe}	15 20	50 -	
Output Admittance ($I_C = 1.0\text{ mAdc}$, $V_{CB} = 5.0\text{ Vdc}$, $f = 1.0\text{ kHz}$) ($I_C = 5.0\text{ mAdc}$, $V_{CB} = 10\text{ Vdc}$, $f = 1.0\text{ kHz}$)	h_{ob}	- -	1.0 5.0	μmhos

* Pulse Test: Pulse Width = 300 μs ; Duty Cycle = 1.0%