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°C (Derate above 25°C)	P_D	0.40 2.67	Watts mW/°C
Total Device Dissipation @ T_C=25°C T_C=100°C (Derate above 25°C)	P_D	1.5 0.75 10	Watts mW/°C
Operating & Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200	°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Sustaining Voltage* (I_C = 100 mAdc, I_B = 0)	$BV_{CEO(sus)}$*	35	-	Vdc
Collector-Emitter Sustaining Voltage* (I_C = 100 mAdc, $R_{BE} \leq$ 100 ohms)	$BV_{CER(sus)}$*	50	-	Vdc
Collector-Base Breakdown Voltage (I_C = 100 μAdc, I_E = 0)	BV_{CBO}	50	-	Vdc
Collector Cutoff Current (V_{CB} = 30 Vdc, I_E = 0)	I_{CBO}	-	1.0	μAdc
(V_{CB} = 30 Vdc, I_E = 0, T_A = 150°C)		-	100	
Emitter Cutoff Current (V_{BE} = 2.0 Vdc, I_C = 0)	I_{EBO}	-	100	μAdc
ON CHARACTERISTICS				
DC Current Gain* (I_C = 150 mAdc, V_{CE} = 10 Vdc)	h_{FE}*	20	45	-
(I_C = 5.0 mAdc, V_{CE} = 10 Vdc)		15	-	
Collector-Emitter Saturation Voltage (I_C = 150 mAdc, I_B = 15 mAdc)	$V_{CE(sat)}$	-	1.5	Vdc
Base-Emitter Saturation Voltage (I_C = 150 mAdc, I_B = 15 mAdc)	$V_{BE(sat)}$	-	1.3	Vdc
SMALL SIGNAL CHARACTERISTICS				
Current-Gain — Bandwidth Product (I_C = 50 mAdc, V_{CE} = 10 Vdc, f = 20 MHz)	f_T	50	-	MHz
Output Capacitance (V_{CB} = 10 Vdc, I_E = 0, f = 100 kHz)	C_{ob}	-	45	pF
Input Capacitance (V_{BE} = 0.5 Vdc, I_C = 0)	C_{ib}	-	100	pF
Input Impedance (I_C = 1.0 mAdc, V_{CB} = 5.0 Vdc, f = 1.0 kHz)	h_{ib}	25	35	ohms
(I_C = 5.0 mAdc, V_{CB} = 10 Vdc, f = 1.0 kHz)		-	10	
Voltage Feedback Ratio (I_C = 1.0 mAdc, V_{CB} = 5.0 Vdc, f = 1.0 kHz)	h_{rb}	-	8.0	$X10^{-4}$
(I_C = 5.0 mAdc, V_{CB} = 10 Vdc, f = 1.0 kHz)		-	8.0	
Small Signal Current Gain (I_C = 1.0 mAdc, V_{CE} = 5.0 Vdc, f = 1.0 kHz)	h_{fe}	15	50	
(I_C = 5.0 mAdc, V_{CE} = 10 Vdc, f = 1.0 kHz)		20	-	
Output Admittance (I_C = 1.0 mAdc, V_{CB} = 5.0 Vdc, f = 1.0 kHz)	h_{ob}	-	1.0	μmhos
(I_C = 5.0 mAdc, V_{CB} = 10 Vdc, f = 1.0 kHz)		-	5.0	

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