

2N2720 2N2721

CASE 654-07, STYLE 1

DUAL
AMPLIFIER TRANSISTOR

NPN SILICON

Refer to 2N2060 for graphs.

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MAXIMUM RATINGS

Rating	Symbol	Value		Unit
Collector-Emitter Voltage	V _{CEO}	60		Vdc
Collector-Base Voltage	V _{CBO}	80		Vdc
Emitter-Base Voltage	V _{EBO}	6.0		Vdc
Collector Current — Continuous	I _C	40		mAdc
		One Die	Both Die	
Total Device Dissipation @ T _A = 25°C Derate above 25°C	P _D	0.3 1.71	0.6 3.4	Watt mW/°C
Total Device Dissipation @ T _C = 25°C Derate above 25°C	P _D	0.6 3.4	1.2 6.8	Watt mW/°C
Operating and 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 Breakdown Voltage(1) (I _C = 10 mAdc, I _B = 0)	V _{(BR)CEO}	60	—	Vdc
Collector Cutoff Current (V _{CE} = 5.0 Vdc, I _B = 0)	I _{CEO}	—	10	nAdc
Collector Cutoff Current (V _{CB} = 60 Vdc, I _E = 0)	I _{CBO}	—	0.01	μAdc
Collector Cutoff Current (V _{CB} = 60 Vdc, I _E = 0, T _A = 150°C)	I _{CBO}	—	10	μAdc
Emitter Cutoff Current (V _{EB} = 5.0 Vdc, I _C = 0)	I _{EBO}	—	10	nAdc
ON CHARACTERISTICS				
DC Current Gain (I _C = 100 μAdc, V _{CE} = 5.0 Vdc) (I _C = 1.0 mAdc, V _{CE} = 5.0 Vdc) (I _C = 10 mAdc, V _{CE} = 5.0 Vdc)	h _{FE}	30 35 42	120 — —	—
Collector-Emitter Saturation Voltage (I _C = 10 mAdc, I _B = 1.0 mAdc)	V _{CE(sat)}	—	1.0	Vdc
Base-Emitter Saturation Voltage (I _C = 10 mAdc, I _B = 1.0 mAdc)	V _{BE(sat)}	0.65	0.85	Vdc
SMALL-SIGNAL CHARACTERISTICS				
Current-Gain — Bandwidth Product (I _C = 10 mAdc, V _{CE} = 10 Vdc, f = 20 MHz)	f _T	80	—	MHz
Output Capacitance (V _{CB} = 5.0 Vdc, I _E = 0, f = 1.0 MHz)	C _{obo}	—	6.0	pF
Input Impedance (I _E = 1.0 mAdc, V _{CB} = 5.0 Vdc, f = 1.0 kHz)	h _{ib}	25	32	ohms
Voltage Feedback Ratio (I _E = 1.0 mAdc, V _{CB} = 5.0 Vdc, f = 1.0 kHz)	h _{rb}	—	500	X 10 ⁻⁶
Small-Signal Current Gain (I _C = 1.0 mAdc, V _{CE} = 5.0 Vdc, f = 1.0 kHz)	h _{fe}	30	200	—
Output Admittance (I _E = 1.0 mAdc, V _{CB} = 5.0 Vdc, f = 1.0 kHz)	h _{ob}	—	1.0	μmhos

MATCHING CHARACTERISTICS

DC Current Gain Ratio(2) (I _C = 100 μAdc, V _{CE} = 5.0 Vdc)	2N2720 2N2721	h _{FE1} /h _{FE2}	0.9 0.8	1.0 1.0	—
Base-Emitter Voltage Differential (I _C = 100 μAdc, V _{CE} = 5.0 Vdc)	2N2720 2N2721	V _{BE1} - V _{BE2}	— —	5.0 10	mVdc
Base-Emitter Voltage Differential Change Due to Temperature (I _C = 100 μAdc, V _{CE} = 5.0 Vdc, T _A = -55 to +25°C)	2N2720 2N2721	Δ(V _{BE1} - V _{BE2})	— —	0.8 1.6	mV
(I _C = 100 μAdc, V _{CE} = 5.0 Vdc, T _A = +25 to +125°C)	2N2720 2N2721		— —	1.0 2.0	

(1) Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.

(2) The lower of the two h_{FE} readings is taken as h_{FE1} for the purpose of measurement.