

BFX11

CASE 654-07, STYLE 1
**DUAL
 AMPLIFIER TRANSISTOR**
 PNP SILICON

5

MAXIMUM RATINGS

Rating	Symbol	Value		Unit
Collector-Emitter Voltage	V _{CEO}	45		Vdc
Collector-Base Voltage	V _{CB0}	45		Vdc
Emitter-Base Voltage	V _{EBO}	4.5		Vdc
Collector Current - Continuous	I _C	100		mAdc
		One Die	Both Die	
Total Device Dissipation @ T _A = 25°C Derate above 25°C	P _D	400	500	mW mW/°C
Total Device Dissipation @ T _C = 25°C Derate above 25°C	P _D	0.85	1.4	Watts 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
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OFF CHARACTERISTICS

Collector-Emitter Sustaining Voltage(1) (I _C = 10 mA, I _B = 0)	V _{CEO(sus)}		45	Vdc
Collector-Base Breakdown Voltage (I _C = 10 μA, I _E = 0)	V _{(BR)CBO}		45	Vdc
Emitter-Base Breakdown Voltage (I _C = 0, I _E = 10 μA)	V _{(BR)EBO}		4.5	Vdc
Collector Cutoff Current (V _{CB} = 30 Vdc, I _E = 0)	I _{CB0}		10	nAdc
			10	μAdc
			10	μAdc
Emitter Cutoff Current (I _C = 0, V _{EB} = 3 Vdc)	I _{EBO}		100	nAdc

ON CHARACTERISTICS

DC Current Gain (I _C = 10 μA, V _{CE} = 5 Vdc) (I _C = 100 μA, V _{CE} = 5 Vdc) (I _C = 1 mA, V _{CE} = 5 Vdc) (I _C = 50 mA, V _{CE} = 5 Vdc)	h _{FE}	50 80 90 80	— — — —	— — — —
Collector-Emitter Saturation Voltage (I _C = 50 mAdc, I _B = 2.5 mAdc)	V _{CE(sat)}	—	0.25	Vdc
Base-Emitter Saturation Voltage (I _C = 50 mAdc, I _B = 2.5 mAdc)	V _{BE(sat)}	—	1.0	Vdc

SMALL-SIGNAL CHARACTERISTICS

Current-Gain - Bandwidth Product (I _C = 50 mAdc, V _{CE} = 20 Vdc, f = 100 MHz)	f _T	130	—	MHz
Output Capacitance (V _{CB} = 10 Vdc, I _E = 0, f = 140 kHz)	C _{obo}	—	8	pF
Input Capacitance (V _{EB} = 0.5 Vdc, I _C = 0, f = 140 kHz)	C _{ibo}	—	25	pF
Noise Figure (I _C = 30 μAdc, V _{CE} = 5 Vdc, R _S = 10 kohms, f = 1 kHz)	NF	—	5	dB

MATCHING CHARACTERISTICS

DC Current Gain Ratio(2) (I _C = 100 μAdc, V _{CE} = 5 Vdc)	h _{FE1} /h _{FE2}	0.8	1	—
Base-Emitter Voltage Differential (I _C = 100 μAdc, V _{CE} = 5 Vdc)	V _{BE1} - V _{BE2}	—	5	mVdc
Base-Emitter Voltage Differential Gradient (I _C = 100 μAdc, V _{CE} = 5 Vdc, T _A = - 55°C to + 125°C)	$\frac{\Delta(V_{BE1} - V_{BE2})}{\Delta T_A}$	—	20	μV/°C

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

(2) Lowest h_{FE} reading is taken as h_{FE1} for this ratio.