

BFX15

CASE 645-07, STYLE 1
**DUAL
 AMPLIFIER TRANSISTOR**
 NPN SILICON

MAXIMUM RATINGS

Rating	Symbol	Value	Unit	
Collector-Emitter Voltage	V _{CEO}	40	Vdc	
Collector-Base Voltage	V _{CBO}	80	Vdc	
Emitter-Base Voltage	V _{EBO}	5	Vdc	
Collector Current - Continuous	I _C	200	mAdc	
		One Die	Both Die	
Total Device Dissipation @ T _A = 25°C Derate above 25°C	P _D	500	600	mW mW/°C
Total Device Dissipation @ T _C = 25°C Derate above 25°C	P _D	1.2	1.8	Watts mW/°C
Operating and Storage Junction Temperature Range	T _J , T _{stg}	-65 to +200	°C	

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

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Sustaining Voltage(1) (I _C = 30 mAdc, I _B = 0)	V _{CEO(sus)}	40		Vdc
Collector-Base Breakdown Voltage (I _C = 100 μAdc, I _E = 0)	V _{(BR)CBO}	80		Vdc
Emitter-Base Breakdown Voltage (I _E = 100 μAdc, I _C = 0)	V _{(BR)EBO}	5.0		Vdc
Collector-Emitter Sustaining Voltage(1) (I _C = 100 mAdc, R _{BE} = 10 Ω)	V _{CE(sus)}	60		Vdc
Collector Cutoff Current (V _{CB} = 40 Vdc, I _E = 0) (V _{CB} = 40 Vdc, I _E = 0, T _A = 150°C)	I _{CBO}		10 10	nAdc μAdc
Emitter Cutoff Current (V _{EB} = 4.0 Vdc, I _C = 0)	I _{EBO}		10	nAdc
ON CHARACTERISTICS				
DC Current Gain (I _C = 10 μAdc, V _{CE} = 5 Vdc) (I _C = 0.1 mAdc, V _{CE} = 5.0 Vdc) (I _C = 10 mAdc, V _{CE} = 5.0 Vdc)	h _{FE}	30 60 90	— — —	— — —
Collector-Emitter Saturation Voltage (I _C = 1 mAdc, I _B = 0.1 mAdc)	V _{CE(sat)}	—	1.0	Vdc
Base-Emitter Saturation Voltage (I _C = 1 mAdc, I _B = 0.1 mAdc)	V _{BE(sat)}	—	0.6	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 = 1 kHz)	C _{obo}	—	15	pF
Input Capacitance (V _{EB} = 0.5 Vdc, I _C = 0, f = 1 kHz)	C _{TE}	—	85	pF
Small-Signal Current Gain (I _C = 1 mAdc, V _{CE} = 5.0 Vdc, f = 1 kHz)	h _{FE}	30	—	—
MATCHING CHARACTERISTICS				
DC Current Gain Ratio(2) (I _C = 0.1 mAdc, V _{CE} = 5.0 Vdc)	h _{FE1} /h _{FE2}	0.9	1	—
Base-Emitter Voltage Differential (I _C = 100 μAdc, V _{CE} = 5.0 Vdc)	V _{BE1} - V _{BE2}	—	5.0	mVdc
Base-Emitter Voltage Differential Gradient (I _C = 100 μAdc, V _{CE} = 5.0 Vdc, T _A = -55°C to +125°C) (I _{C1} + I _{C2} = 200 μAdc, T _A = 0°C to +70°C)	$\frac{\Delta(V_{BE1} - V_{BE2})}{\Delta T_A}$	—	10	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.