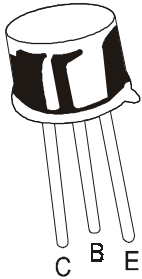


**NPN SILICON PLANAR TRANSISTOR**

**BFX85**



**TO-39  
Metal Can Package**

**AMPLIFIER TRANSISTOR**

**ABSOLUTE MAXIMUM RATINGS (Ta=25°C unless specified otherwise)**

DESCRIPTION	SYMBOL	VALUE	UNITS
Collector Emitter Voltage	$V_{CEO}$	60	V
Collector Base Voltage	$V_{CBO}$	100	V
Emitter Base Voltage	$V_{EBO}$	6.0	V
Collector Current Continuous	$I_C$	1.0	A
Total Device Dissipation @ Ta=25°C	$P_D$	0.8	W
Derate Above 25°C		4.57	mW/°C
Operating And Storage Junction Temperature Range	$T_j, T_{stg}$	-65 to +200	°C

**THERMAL RESISTANCE**

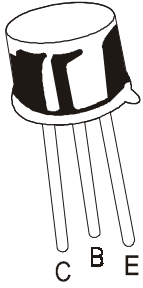
Junction to Ambient	$R_{th(j-a)}$	220	°C/W
Junction to Case	$R_{th(j-c)}$	35	°C/W

**ELECTRICAL CHARACTERISTICS (Ta=25°C unless specified otherwise)**

DESCRIPTION	SYMBOL	TEST CONDITION	BFX85		UNITS
			MIN	MAX	
Collector Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=10mA, I_B=0$	60		V
Collector Base Breakdown Voltage	$BV_{CBO}$	$I_C=100\mu A, I_E=0$	100		V
Collector Cut off Current	$I_{CBO}$	$V_{CB}=80V, I_E=0$		50	nA
		$V_{CB}=80V, I_E=0, T_j=100^\circ C$		2.5	$\mu A$
		$V_{CB}=100V, I_E=0$		500	nA
		$V_{CB}=100V, I_E=0, T_j=100^\circ C$		2.5	$\mu A$
Emitter Cut off Current	$I_{EBO}$	$V_{EB}=5V, I_C=0$		50	nA
		$V_{EB}=5V, I_C=0, T_j=100^\circ C$		2.5	$\mu A$
		$V_{EB}=6V, I_C=0$		500	nA
DC Current Gain	$h_{FE}$	$I_C=10mA, V_{CE}=10V$	50		
		$I_C=150mA, V_{CE}=10V$	70		
		$I_C=500mA, V_{CE}=10V$	30		
		$I_C=1A, V_{CE}=10V$	15		
Collector Emitter (Sat) Voltage	$V_{CE(Sat)}$	$I_C=10mA, I_B=1.0mA$		0.15	V
		$I_C=150mA, I_B=15mA$		0.35	V
		$I_C=500mA, I_B=50mA$		1.00	V
		$I_C=1A, I_B=100mA$		1.60	V

# NPN SILICON PLANAR TRANSISTOR

**BFX85**

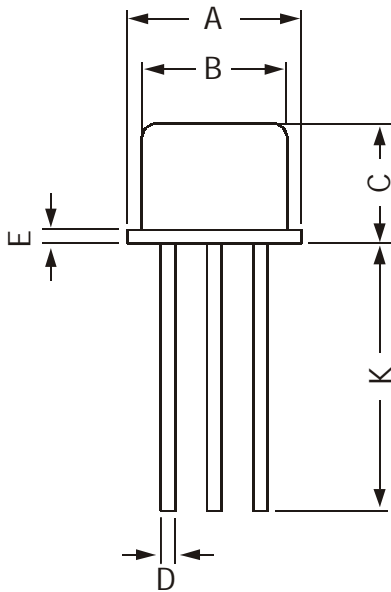


**TO-39  
Metal Can Package**

## ELECTRICAL CHARACTERISTICS (Ta=25°C unless specified otherwise)

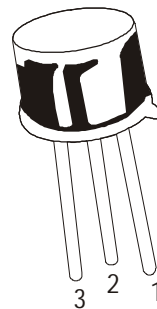
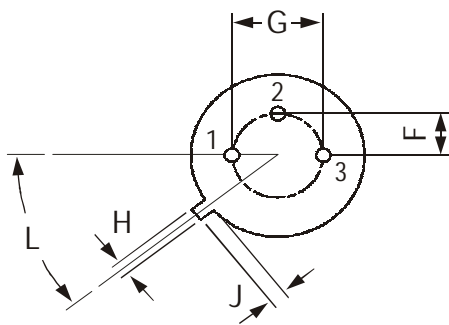
DESCRIPTION	SYMBOL	TEST CONDITION	BFX85		UNITS
			MIN	MAX	
Base Emitter (Sat) Voltage	$V_{BE(Sat)}$	$I_C=10mA, I_B=1.0mA$		1.2	V
		$I_C=150mA, I_B=15mA$		1.3	V
		$I_C=500mA, I_B=50mA$		1.5	V
		$I_C=1A, I_B=100mA$		2.0	V
<b><u>SMALL SIGNAL CHARACTERISTICS</u></b>					
Current Gain Bandwidth Product	$f_T$	$I_C=50mA, V_{CE}=10V$ $f=35MHz$	50		MHz
Collector Capacitance	$C_{obo}$	$V_{CB}=10V, I_E=0, f=1MHz$		12	pF
Small Signal Current Gain	$ h_{fe} $	$I_C=1.0mA, V_{CE}=5.0V,$ $f=1kHz$	20		
		$I_C=10mA, V_{CE}=5.0V,$ $f=1.0kHz$	25		
Input Impedance	$h_{ie}$	$I_C=10mA, V_{CE}=5.0V,$ $f=1.0kHz$		750	$\mu mhos$
Voltage Feedback Ratio	$h_{re}$	$I_C=10mA, V_{CE}=5.0V,$ $f=1.0kHz$		5.0	$\times 10^{-4}$
Output Admittance	$h_{oe}$	$I_C=10mA, V_{CE}=5.0V,$ $f=1.0kHz$		80	$\mu mhos$

**TO-39 Metal Can Package**



All dimensions are in mm

DIM	MIN	MAX
A	8.50	9.39
B	7.74	8.50
C	6.09	6.60
D	0.40	0.53
E	—	0.88
F	2.41	2.66
G	4.82	5.33
H	0.71	0.86
J	0.73	1.02
K	12.70	—
L	42 DEG	48 DEG



**PIN CONFIGURATION**

- 1. EMITTER
- 2. BASE
- 3. COLLECTOR

**Packing Detail**

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
TO-39	500 pcs/polybag	540 gm/500 pcs	3" x 7.5" x 7.5"	20K	17" x 15" x 13.5"	32K	40 kgs

### **Disclaimer**

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