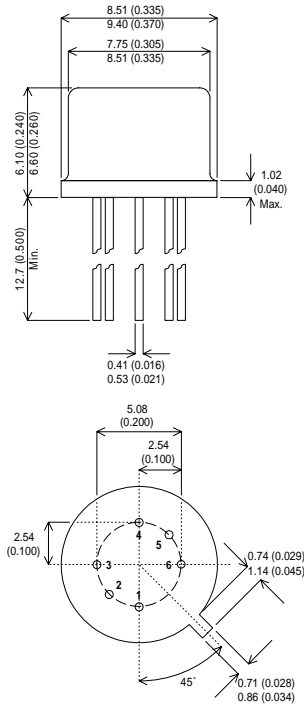


**MECHANICAL DATA**

Dimensions in mm (inches)



**SILICON PLANAR EPITAXIAL NPN TRANSISTOR**

**DESCRIPTION**

The BFY84 is a six terminal device containing two isolated silicon planar epitaxial NPN transistors in Jedec TO77 metal case.

The good thermal tracking over a wide current and temperature range, offers the circuit designer matched transistors with specified performance for differential amplifiers.

**TO77**

- Pin 1 – Collector 1
- Pin 2 – Base 1
- Pin 3 – Emitter 1
- Pin 4 – Emitter 2
- Pin 5 – Base 2
- Pin 6 – Collector 2

**ABSOLUTE MAXIMUM RATINGS**

$V_{CBO}$	Collector – Base Voltage ( $I_E = 0$ )	30V
$V_{CEO}$	Collector – Emitter Voltage ( $I_B = 0$ )	12V
$V_{EBO}$	Emitter – Base Voltage ( $I_C = 0$ )	3V
$I_C$	Collector Current	200mA
$P_{tot}$	Total Dissipation at $T_{amb} \leq 25^\circ C$ (one side)	0.3W
	$T_{amb} \leq 25^\circ C$ (both sides)	0.38W
	$T_{case} \leq 25^\circ C$ (one side)	0.6W
	$T_{case} \leq 25^\circ C$ (both sides)	0.98W
	$T_{case} \leq 100^\circ C$ (one side)	0.34W
	$T_{case} \leq 100^\circ C$ (both sides)	0.56W
$T_{stg}, T_j$	Storage and Junction Temperature	-65 to +200°C

**THERMAL DATA**

			One side	Both Sides	
$R_{thj-case}$	Thermal Resistance Junction-case	Max	292	178	°C/W
$R_{thj-amb}$	Thermal Resistance Junction-ambient	Max	583	460	°C/W

**ELECTRICAL CHARACTERISTICS** ( $T_{case} = 25^{\circ}C$  unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CBO}$	Collector Cut Off Current $V_{CB} = 15V$ $I_E = 0$ $T_{amb} = 150^{\circ}C$			10	nA
				1	$\mu A$
$V_{(BR)CBO}$	Collector Base Breakdown Voltage $I_C = 1\mu A$ $I_E = 0$	30			V
$V_{CEO(sus)*}$	Collector Emitter Sustaining Voltage $I_C = 3mA$ $I_B = 0$	12			V
$V_{(BR)EBO}$	Emitter Base Breakdown Voltage $I_C = 0$ $I_E = 10\mu A$	3			V
$V_{CE(sat)}$	Collector Emitter Saturation Voltage $I_C = 10mA$ $I_B = 1mA$			0.4	V
$V_{BE(sat)}$	Base Emitter Saturation Voltage $I_C = 10mA$ $I_B = 1mA$			1	V
$ V_{BE1} - V_{BE2} $	Input Offset Voltage $I_C = 3mA$ $V_{CE} = 1V$			15	mV
$\frac{ V_{BE1} - V_{BE2} }{\Delta T}$	Input Offset Voltage Temperature Coefficient $I_C = 3mA$ $V_{CE} = 1V$			25	$\mu V/^{\circ}C$
$h_{FE}$	DC Current Gain $I_C = 3mA$ $V_{CE} = 1V$	20			—
$h_{FE1}/h_{FE2}$	Matched Pair Ratio $I_C = 3mA$ $V_{CE} = 1V$			1.25	—
$f_T$	Transistion Frequency $I_C = 4mA$ $V_{CE} = 10V$ $f = 100MHz$	600			MHz
$C_{EBO}$	Emitter Base Capacitance $I_C = 0$ $f = 1MHz$ $V_{EB} = 0.5V$			2	pF
$C_{CBO}$	Collector Base Capacitance $I_E = 0$ $f = 1MHz$ $V_{CB} = -10V$			1.7	pF
NF	Noise Figure $I_C = 1mA$ $f = 60MHz$ $V_{CE} = 6V$			6	dB

\* Pulse test  $t_p = 300\mu s$ , Duty Cycle = 1%