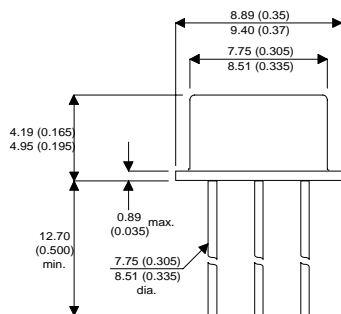
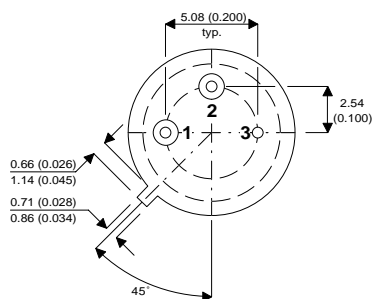


MECHANICAL DATA

Dimensions in mm (inches)

**MEDIUM POWER AMPLIFIERS
NPN SILICON PLANAR
TRANSISTOR**

Description

The BFY50 is a Silicon Planar Epitaxial NPN Transistor in Jedec TO39 metal case. they are intended for general purpose linear and switching applications


TO39 PACKAGE
Underside View

Pin 1 = Emitter Pin 2 = Base Pin 3 = Collector

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}C$ unless otherwise stated)

V_{CBO}	Collector – Base Voltage	80V
V_{CEO}	Collector – Emitter Voltage	35V
V_{EBO}	Emitter – Base Voltage	6V
I_C	Collector Current	1A
I_{CM}	Collector Peak Current	1.5A
P_{TOT}	Total Power Dissipation @ $T_{amb} \leq 25^{\circ}C$	0.8W
	@ $T_{case} \leq 25^{\circ}C$	5W
T_{stg}, T_j	Storage and Operating Junction Temperature	-65 to 200°C
R_{j-case}	Thermal Resistance Junction to Case	35°C / W
R_{j-amb}	Thermal Resistance Junction to Ambient	218°C / W

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{(BR)CBO}^*$	Collector – Base Breakdown Voltage $I_C = 100\mu A$ $I_E = 0$	80			V
$V_{(BR)CEO}^*$	Collector – Emitter Breakdown Voltage $I_C = 30mA$ $I_B = 0$	35			
$V_{(BR)EBO}^*$	Emitter – Base Breakdown Voltage $I_C = 100mA$ $I_E = 100\mu A$	6			
I_{CBO}	Collector Cut-off Current $V_{CB} = 60V$ $I_E = 0$			50	nA
				2.5	μA
I_{EBO}	Emitter Cut-off Current $V_{EB} = 5V$ $I_C = 0$			50	nA
				2.5	μA
$V_{CE(sat)}$	Collector – Emitter Saturation Voltage $I_C = 150mA$ $I_E = 15mA$ $I_C = 1A$ $I_B = 0.1A$		0.14	0.2	V
			0.7	1	
$V_{BE(sat)}$	Base – Emitter Saturation Voltage $I_C = 150mA$ $I_B = 15mA$ $I_C = 1A$ $I_B = 0.1A$		0.95	1.3	V
			1.5	2	
h_{FE}^*	DC Current Gain $I_C = 10mA$ $V_{CE} = 10V$ $I_C = 150mA$ $V_{CE} = 10V$ $I_C = 1mA$ $V_{CE} = 10V$	20	40		—
		30	55		
		15	30		

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
h_{fe}	Small Signal Current Gain $V_{CE} = 6V$ $I_C = 1mA$ $f = 1kHz$ $V_{CE} = 6V$ $I_C = 10mA$ $f = 1KHz$		25		—
			45		
h_{ie}	Input Impedance $V_{CE} = 5V$ $I_C = 10mA$ $f = 1.KHz$		180		Ω
h_{rE}	Reverse Voltage Ratio $V_{CE} = 5V$ $I_C = 10mA$ $f = 1.KHz$			55×10^{-6}	—
h_{oe}	Output Admittance $V_{CE} = 5V$ $I_C = 10mA$ $f = 1.KHz$		30		μS
C_{cbo}	Collector -Base Capacitance $V_{CB} = 5V$ $I_E = 10mA$ $f = 1.KHz$		10		pF
f_T	Transistion Frequency $V_{CE} = 10V$ $I_C = 50mA$	60	100		MHz
t_d	Delay Time $I_C = 150mA$ $V_{CC} = 10V$		15		ns
t_r	Rise Time $I_{B1} = 15mA$ $V_{BE} = -2V$		40		
t_s	Storage Time $I_C = 150mA$ $V_{CC} = 10V$		300		
t_f	Fall Time $I_{B1} = -I_{B2} = 15mA$		60		

Pulse Duration = 300 μs , Duty Cycle = 1%