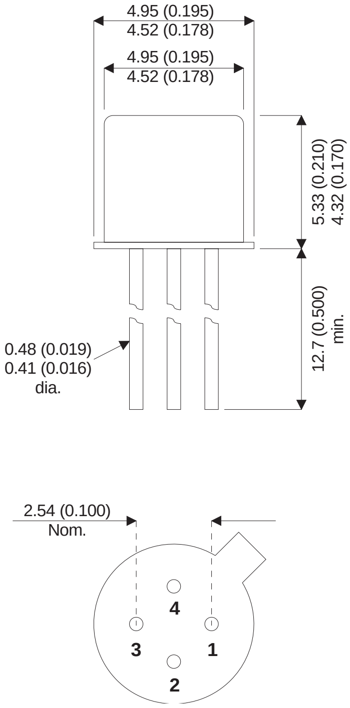
SEME LAB

BFY90

MECHANICAL DATA
Dimensions in mm (inches)



TO72

Pin 1 – Emitter

Pin 2 –Base

Pin 3 – Collector

Pin 4 – Connected to Case

SILICON PLANAR EPITAXIAL NPN TRANSISTOR

DESCRIPTION

The BFY90 is a low noise transistor intended for use in broad and narrow-band amplifiers up to 1GHz.

ABSOLUTE MAXIMUM RATINGS (T$_A$= 25°C unless otherwise stated)

V_{CBO}	Collector – Base Voltage	30V
V_{CER}	Collector – Emitter Voltage ($R_{BE} \leq 50\Omega$)	30V
V_{CEO}	Collector – Emitter Voltage	15V
V_{EBO}	Emitter – Base Voltage	2.5v
$I_{C(AV)}$	Average Collector Current	25mA
I_{CM}	Peak Collector Current (f ≥1MHz)	50mA
P_{tot}	Power Dissipation at $T_{amb} = 25°C$	200mW°C
T_j	Storage Temperature	200°C
$T_{stg,}$	Junction Temperature	–65 to +200°C

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Prelim. 12/99

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ELECTRICAL CHARACTERISTICS (T_A= 25°C unless otherwise stated)

	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut Off Current	V_{CB} = 15V	I_E = 0			10	nA
$V_{(BR)CEO*}$	Collector Emitter Breakdown Voltage	I_C = 10mA	I_B = 0	15			V
$V_{(BR)CER*}$	Collector Emitter Breakdown Voltage	I_C = 10mA	$R_{BE} \leq 50\Omega$	30			V
V_{CEK}	Collector Emitter Knee Voltage	I_C = 10mA				0.75	V
h_{21E}	Static Forward Current Transfer Ratio	V_{CE} = 1V	I_C = 2mA	25		150	—
		V_{CE} = 1V	I_C = 25mA	20		125	—
	DYNAMIC CHARACTERISTICS						
f_T	Transition Frequency	V_{CE} = 5V f = 500MHz	I_C = 2mA	1			GHz
		V_{CE} = 5V f = 500MHz	I_C = 25mA			1.3	GHz
$C_{22b(1)}$	Output Capacitance	V_{CB} = 10V f = 1MHz	I_E = 0.			1.5	pF
$C_{12e(2)}$	Open-Circuit Reverse Transfer Capacitance	V_{CE} = 5V f = 1MHz	I_C = 0			0.8	pF
NF	Noise Figure	V_{CE} = 5V f = 100kHz	I_C = 2mA R_G optimum			4	dB
		V_{CE} = 5V f = 200MHz	I_C = 2mA R_G optimum			3.5	dB
		V_{CE} = 5V f = 500MHz	I_C = 2mA $R_G = 50\Omega$			5	dB
		V_{CE} = 5V f = 800MHz	I_C = 2mA R_G optimum		5		dB
G_p	Power Gain	V_{CE} = 10V f = 200MHz	I_C = 14mA	21			dB
$P_{O(2)}$	Output Power	V_{CE} = 10V f_1 = 202MHz Output SWR ≤ 2 TOS sortie ≤ 2 d_{IM}* = - 30dB at 2 f_2 - f_1 = 208MHz	I_C = 14mA f_2= 205MHz	10			mW

THERMAL DATA

$R_{th(j-a)}$	Junction-ambient thermal resistance	≤ 0.875 Max	°C/W
$R_{th(j-c)}$	Junction-case thermal resistance	≤ 0.575 Max	°C/W

* Pulse test t_p = 300µs , $\delta \leq 2\%$

(1) Shield Lead (case) not connected

(2) Shield Lead (case) grounded

* Intermodulation Distortion