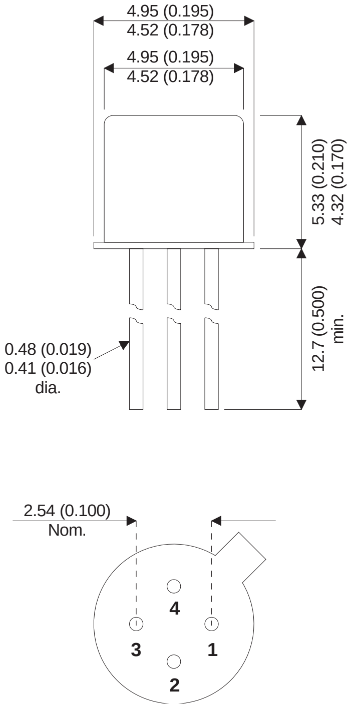
MECHANICAL DATA

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

Semelab plc. Telephone +44(0)1455 556565. Fax +44(0)1455 552612.
E-mail: sales@semelab.co.uk Website: http://www.semelab.co.uk

SEME LAB

BFY90

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 $R_{BE} \le 50\Omega$	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 I_C = 2mA f = 500MHz	1			GHz
		V_{CE} = 5V I_C = 25mA f = 500MHz			1.3	GHz
$C_{22b(1)}$	Output Capacitance	V_{CB} = 10V I_E = 0. f = 1MHz			1.5	pF
$C_{12e(2)}$	Open-Circuit Reverse Transfer Capacitance	V_{CE} = 5V I_C = 0 f = 1MHz			0.8	pF
NF	Noise Figure	V_{CE} = 5V I_C = 2mA f = 100kHz R_G optimum			4	dB
		V_{CE} = 5V I_C = 2mA f = 200MHz R_G optimum			3.5	dB
		V_{CE} = 5V I_C = 2mA f = 500MHz R_G = 50Ω			5	dB
		V_{CE} = 5V I_C = 2mA f = 800MHz R_G optimum		5		dB
G_p	Power Gain	V_{CE} = 10V I_C = 14mA f = 200MHz	21			dB
$P_{O(2)}$	Output Power	V_{CE} = 10V I_C = 14mA f_1 = 202MHz f_2= 205MHz Output SWR ≤ 2 TOS sortie ≤ 2 d_{IM}* = - 30dB at 2 f_2 - f_1 = 208MHz	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 , $\delta \le 2\%$

(1) Shield Lead (case) not connected

(2) Shield Lead (case) grounded

* Intermodulation Distortion

Semelab plc. Telephone +44(0)1455 556565. Fax +44(0)1455 552612.
E-mail: sales@semelab.co.uk Website: http://www.semelab.co.uk