BFY 74 - BFY 75

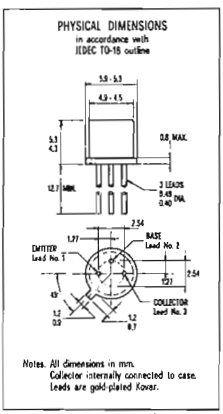
HIGH FREQUENCY AMPLIFIER AND OSCILLATOR

NPN DIFFUSED SILICON PLANAR TRANSISTORS

GENERAL DESCRIPTION - Type BFY 74 is an NPN silicon PLANAR transistor intended for general purpose use including DC and video amplifiers, fast current-mode switching and RF/IF applications up to VHF.

The BFY 74 utilises the PLANAR process to provide a 360 Mc/s gain bandwidth product, 45V V_{CEO} rating, and useful gain over a wide range of collector current (50 µA to 20 mA) together with low leakage and extreme parameter stability with life.

Type BFY 75 is a higher gain version of the BFY 74.



Notes. All dimensions in mm.
Collector internally connected to case.
Leads are gold-plated Kovar.

ABSOLUTE MAXIMUM RATINGS (Note 1)

Maximum Temperatures

Storage Temperature	-65°C to + 300°C
Operating Junction Temperature	200°C Maximum
Lead Temperature (Soldering, No Time Limit)	300°C Maximum

Maximum Power Dissipations

Total Dissipation at 25°C Case Temperature (Notes 2 and 3)	1.2 Watts
at 100°C Case Temperature (Notes 2 and 3)	0.68 Watt
at 25°C Ambient Temperature (Notes 2 and 3)	0.36 Watt

Maximum Voltages

V_{CBO}	Collector to Base Voltage	60 Volts
V_{CEO}	Collector to Emitter Voltage (Note 4)	45 Volts
V_{EBO}	Emitter to Base Voltage	5.0 Volts

ELECTRICAL CHARACTERISTICS (25°C free air temperature unless otherwise noted)

		BFY 74			BFY 75				
SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
h_{FE}	DC Current Gain		45		35	70			I_C = 0.1 mA V_{CE} = 5.0 V
h_{FE}	DC Current Gain	30	65		40	105			I_C = 1.0 mA V_{CE} = 5.0 V
h_{FE}	DC Pulse Current Gain (Note 5)	40	75	180	65	114	300		I_C = 10 mA V_{CE} = 5.0 V
h_{FE}	DC Pulse Current Gain (Note 5)	30	60		40	100			I_C = 20 mA V_{CE} = 4.0 V
h_{FE} (-55°C)	DC Pulse Current Gain (Note 5)	20			30				I_C = 10 mA V_{CE} = 5.0 V
V_{BE} (sat)	Base Saturation Voltage		0.70	0.8		0.70	0.8	V	I_C = 1.0 mA I_B = 0.1 mA
V_{BE} (sat)	Base Saturation Voltage	0.7	0.79	0.9	0.7	0.79	0.9	V	I_C = 10 mA I_B = 1.0 mA
V_{CE} (sat)	Collector Saturation Voltage		0.3	0.8		0.3	0.8	V	I_C = 5.0 mA I_B = 0.5 mA
V_{CE} (sat)	Collector Saturation Voltage		0.4	1.0		0.4	1.0	V	I_C = 10 mA I_B = 1.0 mA
BV_{CBO}	Collector to Base Breakdown Voltage	60			60			V	I_C = 100 µA I_E = 0
BV_{EBO}	Emitter to Base Breakdown Voltage	5.0			5.0			V	I_C = 0 I_E = 100 µA
LV_{CEO}	Collector to Emitter Sustaining Voltage	45			45			V	I_C = 10 mA I_B = 0
I_{CBO}	Collector Cutoff Current		1.1	10		1.1	10	nA	I_E = 0 V_{CB} = 45 V
I_{CBO} (150°C)	Collector Cutoff Current		5.0	30		5.0	30	µA	I_E = 0 V_{CB} = 45 V
f_T	Transition Frequency	250	360		250	360		Mc/s	I_C = 10 mA V_{CE} = 15 V
C_{ob}	Output Capacitance		3.0	4.0		3.0	4.0	pF	I_E = 0 V_{CB} = 10 V
C_{TE}	Emitter Transition Capacitance		6.5	10		6.5	10	pF	I_C = 0 V_{BE} = 0.5 V
h_{fe}	Small Signal Current Gain (f = 1Kc/s)	40	90	200	65	130	310		I_C = 5.0 mA V_{CE} = 5.0 V
h_{fe}	Small Signal Current Gain (f = 1Kc/s)		75			100			I_C = 1.0 mA V_{CE} = 5.0 V
h_{ie}	Input Resistance (f = 1Kc/s)		0.8			1.0		KΩ	I_C = 5.0 mA V_{CE} = 5.0 V
h_{ie}	Input Resistance (f = 1Kc/s)		2.8			3.0		KΩ	I_C = 1.0 mA V_{CE} = 5.0 V
h_{oe}	Output Conductance (f = 1Kc/s)		20	100		30	125	µmho	I_C = 5.0 mA V_{CE} = 5.0 V
h_{oe}	Output Conductance (f = 1Kc/s)		6.0			10		µmho	I_C = 1.0 mA V_{CE} = 5.0 V