

357-595

BFY 81

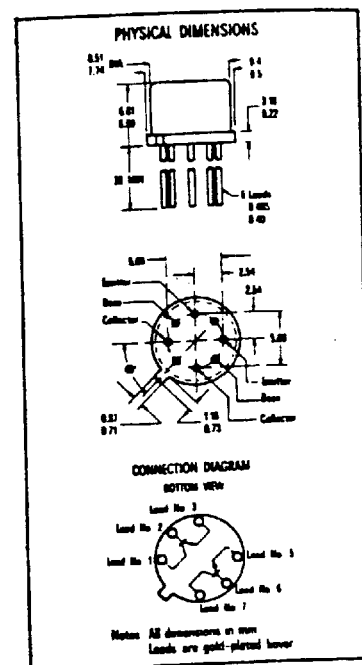
DUAL, HIGH-GAIN, LOW-NOISE, LOW-CURRENT TYPE

NPN DIFFUSED SILICON PLANAR TRANSISTORS

GENERAL DESCRIPTION- The BFY81 is a six terminal device containing two isolated high gain NPN double diffused silicon PLANAR transistors. The planar process guarantees the stability of the initial match time. The good thermal tracking over a wide current and temperature range offers the circuit designer matched transistors with specified performance for differential amplifiers and low level DC amplifiers.

ABSOLUTE MAXIMUM RATINGS (Note 1)

Maximum Temperatures		-65°C to + 200°C
Storage Temperature		200°C Maximum
Operating Junction Temperature		300°C Maximum
Lead Temperature (Soldering, No Time Limit)		
Maximum Power Dissipations		
Total Dissipation at 25°C Case Temperature (Note 2)	One Side Only	Both Sides
at 100°C Case Temperature (Note 2)	0.8 Watt	1.3 Watt
at 25°C Ambient Temperature (Note 2)	0.45 Watt	0.75 Watt
	0.4 Watt	0.5 Watt
Maximum Voltages		
BV _{CBO} Collector to Base Voltage		45 Volts
LV _{CEO} Collector to Emitter Voltage		45 Volts
BV _{EBO} Emitter to Base Voltage		6.0 Volts



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

SYMBOL	CHARACTERISTIC	MIN.	MAX.	UNITS	TEST CONDITIONS
h_{FE}	DC Current Gain	60			$I_C = 10 \mu A$ $V_{CE} = 5.0 V$
h_{FE}	DC Current Gain	100			$I_C = 100 \mu A$ $V_{CE} = 5.0 V$
h_{FE}	DC Current Gain	150			$I_C = 1.0 mA$ $V_{CE} = 5.0 V$
h_{FE1}/h_{FE2}	DC Current Gain Ratio	0.8	1.0		$I_C = 100 \mu A$ $V_{CE} = 5.0 V$
$V_{BE(ON)}$	Emitter to Base On Voltage		0.7	V	$I_C = 100 \mu A$ $V_{CE} = 5.0 V$
$V_{BE1} - V_{BE2}$	Base Emitter Voltage Differential		10	mV	$I_C = 100 \mu A$ $V_{CE} = 5.0 V$
$\Delta(V_{BE1} - V_{BE2})$	Base Emitter Voltage Differential Change		25	$\mu V/^\circ C$	$I_C = 100 \mu A$ $V_{CE} = 5.0 V$
$V_{CE(sat)}$	Collector Saturation Voltage		0.35	V	$I_C = 1.0 mA$ $I_B = 0.1 mA$
I_{CBO}	Collector Cutoff Current		10	nA	$I_E = 0$ $V_{CB} = 40 V$
$I_{CBO}(150^\circ C)$	Collector Cutoff Current		10	μA	$I_E = 0$ $V_{CB} = 40 V$
I_{EBO}	Emitter Cutoff Current		10	nA	$I_C = 0$ $V_{EB} = 5.0 V$
I_{CEO}	Collector to Emitter Cutoff Current		10	nA	$I_B = 0$ $V_{CE} = 5.0 V$
BV _{CBO}	Collector to Base Breakdown Voltage	45		V	$I_C = 10 \mu A$ $I_E = 0$
BV _{EBO}	Emitter to Base Breakdown Voltage	6.0		V	$I_E = 10 \mu A$ $I_C = 0$
LV _{CEO}	Collector to Emitter Sustaining Voltage (Note 3)	45		V	$I_C = 10 mA$ $I_B = 0$
h_{fe}	High Frequency Current Gain ($f = 30 Mc/s$)	2.0			$I_C = 500 \mu A$ $V_{CE} = 5.0 V$
C_{ob}	Output Capacitance		6.0	pF	$I_E = 0$ $V_{CB} = 5.0 V$
NF	Noise Figure (Narrow Band) ($f = 1 Kc/s$)		4.0	db	$I_C = 10 \mu A$ $V_{CE} = 5.0 V$