

NPN 4 GHz wideband transistor

 BFQ34T

N AMER PHILIPS/DISCRETE 69E D

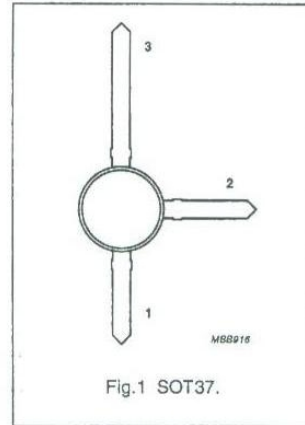
DESCRIPTION

NPN transistor in a plastic SOT37 envelope, intended for wideband amplification applications. The device features high output voltage capabilities.

A SOT5 (TO-39) version (ref: ON4497) is available on request.

PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector



QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter	-	-	25	V
V_{CEO}	collector-emitter voltage	open base	-	-	18	V
I_C	collector current		-	-	150	mA
P_{tot}	total power dissipation	up to $T_s = 145^\circ\text{C}$ (note 1)	-	-	1	W
h_{FE}	DC current gain	$I_C = 100\text{ mA}$; $V_{CE} = 10\text{ V}$; $T_j = 25^\circ\text{C}$	25	70	-	
f_T	transition frequency	$I_C = 100\text{ mA}$; $V_{CE} = 10\text{ V}$; $f = 800\text{ MHz}$; $T_j = 25^\circ\text{C}$	-	3.7	-	GHz
G_{UM}	maximum unilateral power gain	$I_C = 100\text{ mA}$; $V_{CE} = 10\text{ V}$; $f = 800\text{ MHz}$; $T_{amb} = 25^\circ\text{C}$	-	12	-	dB
V_O	output voltage	$d_m = -60\text{ dB}$; $I_C = 90\text{ mA}$; $V_{CE} = 10\text{ V}$; $R_L = 75\ \Omega$; $T_{amb} = 25^\circ\text{C}$; $f_{(p+q-r)} = 793.25\text{ MHz}$	-	750	-	mV
P_{L1}	output power at 1 dB gain compression	$V_{CE} = 10\text{ V}$; $I_C = 90\text{ mA}$; $f = 800\text{ MHz}$; $T_{amb} = 25^\circ\text{C}$	-	22	-	dBm
ITO	third order intercept point	$I_C = 90\text{ mA}$; $V_{CE} = 10\text{ V}$; $f = 800\text{ MHz}$; $T_{amb} = 25^\circ\text{C}$	-	41	-	dBm

Note

1. T_s is the temperature at the soldering point of the collector lead.

T-31-01

PLASTIC RF TRANSISTORS

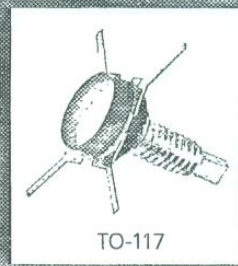
COMMUNICATIONS

- VHF/UHF Amplifiers
- Log Amplifiers
- CATV/MATV Amplifiers
- Microwave Amplifiers

INSTRUMENTATION

- Wideband Preamplifiers
- Oscilloscopes
- Spectrum Analyzers
- Frequency Counters

TYPE NUMBER	MAXIMUM RATINGS			TYPICAL CHARACTERISTICS									
	V _{ceo} (V)	I _c (mA)	P _{tot} (W)	GAIN-BW		NOISE FIGURE		POWER GAIN					
				f _{max} (GHz)	I _c (mA)	NF (dB)	f _{max} (MHz)	I _c (mA)	300 MHz	500 MHz	800 MHz	1000 MHz	2000 MHz
PLASTIC T-PACK – SOT-37													
NPN													
A486	15	25	0.19	1.0 1.6	2 25	4	500	2		15	11		
BFQ34T	18	150	1.0	3.7	100				20				
BFQ65	10	50	0.3	7.5	15	2.5 3	2000 2000	5 15					8
BFR90	15	25	0.18	5	14	2.4	500	2		19.5		13.5	
BFR90A	15	25	0.18	5	14	1.8 3.6	800 2000	4 4		19.5		13.5	
BFR91	12	35	0.18	5	30	1.9	500	2		18		12	
BFR91A	12	35	0.3	6	30	1.6 2.3	800 800	4 30				14	
BFR96	15	75	0.5	5.5	75	3.3	500	50		15.2		9.5	
BFR96S	15	100	0.7	5	70	4	800	70				11.5	
BFT24	5	2.5	0.03	2.3	1	3.8	500	1		17	11		
BFW92A	15	25	0.2	2.8	25	2.5	800	2				13	
BFW93	10	50	0.19	1.7	50	<5	500	2	16.5		10.5		
PNP													
BFQ23	12	35	0.18	5	30	2.4	500	2		16.5			
BFQ32	15	75	0.5	4.2 4.6	50 75	3.75	500	50		14			
BFQ51	15	25	0.18	5	14	2.7	500	2		19			
PLASTIC X-PACK – SOT-103													
NPN													
BFG34	18	150	1	3.7	100	2.3	800	20		14			7
BFG90A	15	25	0.18	5	14							18	
BFG91A	12	35	0.3	6	30							17	
BFG96	15	150	0.5	5	50							14	
PNP													
BFG23	12	35	0.18	5	30	2.3	800	4		14.5			
BFG32	15	75	0.7	4.5	50	4.3	800	50				13	
BFG51	15	25	0.18	5	14	2.4	800	4		15.9			



STRIP-LINE STUD RF TRANSISTORS

STRIP-LINE STUD – TO-117													
NPN													
BFR94	25	150	2.5	3.5	90 150	5	500	90		13.5			
STRIP-LINE STUD – SOT-122													
NPN													
BFQ34	18	150	2.25	3.5	75	8	500	120		16.3			
BFQ68	18	300	4.5	4	240							13	