

NPN Silicon RF Broadband Transistors

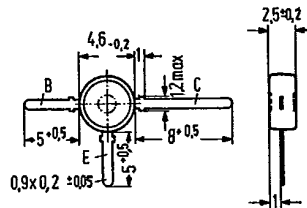
BFW 92

2 N 6621

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BFW 92 is an epitaxial NPN silicon planar RF transistor in a plastic package similar to TO 119 (50 B 3 DIN 41867); intended for use as RF amplifier up to the GHz range, e. g. for broadband antenna amplifiers. This transistor is also available upon request as JEDEC version under the designation 2N6621.

Type	Ordering code
BFW 92	Q62702-F321
2 N 6621	Q68000-A4669



Approx. weight 0.3 g Dimensions in mm

Maximum ratings

Collector-base voltage
Collector-emitter voltage
Emitter-base voltage
Collector current
Collector peak current ($f > 1$ MHz)
Junction temperature
Storage temperature range
Total power dissipation ($T_{amb} = 70^\circ\text{C}$)

	BFW 92 2 N 6621	
V_{CBO}	25	V
V_{CEO}	15	V
V_{EBO}	2.5	V
I_C	25	mA
I_{CM}	50	mA
T_j	150	$^\circ\text{C}$
T_{stg}	-55 to +125	$^\circ\text{C}$
P_{tot}	200	mW

Thermal resistance

Junction to ambient air
(mounted on glass fiber epoxy resin
PCB 40 mm x 25 mm x 1 mm)

R_{thJA}	400	K/W
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Static characteristics ($T_{amb} = 25^{\circ}\text{C}$)

Collector cutoff current ($V_{CBO} = 10\text{ V}$)	I_{CBO}	≤ 50	nA
Collector-emitter saturation voltage ¹⁾ ($I_C = 20\text{ mA}$)	V_{CEsat}	≤ 0.75	V
DC current gain ($I_C = 2\text{ mA}$; $V_{CE} = 1\text{ V}$)	h_{FE}	20 to 150	—
($I_C = 25\text{ mA}$; $V_{CE} = 1\text{ V}$)	h_{FE}	≥ 20	—

Dynamic characteristics ($T_{amb} = 25^{\circ}\text{C}$)

Transition frequency ($I_C = 14\text{ mA}$; $V_{CE} = 5\text{ V}$; $f = 200\text{ MHz}$)	f_T	1.9	GHz
Reverse transfer capacitance ($I_C = 2\text{ mA}$; $V_{CE} = 5\text{ V}$; $f = 1\text{ MHz}$)	C_{12e}	0.6	pF
Collector-base capacitance ($V_{CBO} = 10\text{ V}$; $f = 1\text{ MHz}$)	C_{CBO}	0.7	pF
Power gain ($I_C = 14\text{ mA}$; $V_{CE} = 5\text{ V}$; $f = 800\text{ MHz}$; $R_g = 60\ \Omega$)	G_{pe}	11	dB
Noise figure ($I_C = 2\text{ mA}$; $V_{CE} = 5\text{ V}$; $f = 800\text{ MHz}$; $R_g = 60\ \Omega$)	NF	4	dB
Output voltage ²⁾ ($I_C = 14\text{ mA}$; $V_{CE} = 5\text{ V}$; $R_g = R_L = 75\ \Omega$ $d_{IM} = 60\text{ dB}$)	V_o	150	mV

S parameter

Operating point: $I_C = 14\text{ mA}$; $V_{CE} = 5\text{ V}$; $Z_o = 60\ \Omega$

f (GHz)	S_{11}	φ	S_{21}	φ	S_{12}	φ	S_{22}	φ
0,1	0,445	-73	16,307	131	0,017	58	0,810	-14
0,2	0,345	-118	10,622	109	0,027	62	0,678	-19
0,3	0,313	-142	7,400	98	0,034	64	0,646	-19
0,4	0,309	-157	5,750	90	0,043	65	0,611	-19
0,5	0,311	-169	4,628	84	0,051	69	0,594	-22
0,6	0,315	-178	3,919	80	0,059	72	0,617	-24
0,7	0,326	173	3,362	76	0,067	72	0,601	-23
0,8	0,337	168	2,926	71	0,077	73	0,572	-26
0,9	0,349	164	2,622	68	0,085	73	0,576	-31
1,0	0,357	159	2,344	63	0,094	74	0,602	-33

1) Applicable to that characteristic passing through $I_C = 22\text{ mA}$; $V_{CE} = 1\text{ V}$ at constant I_B .

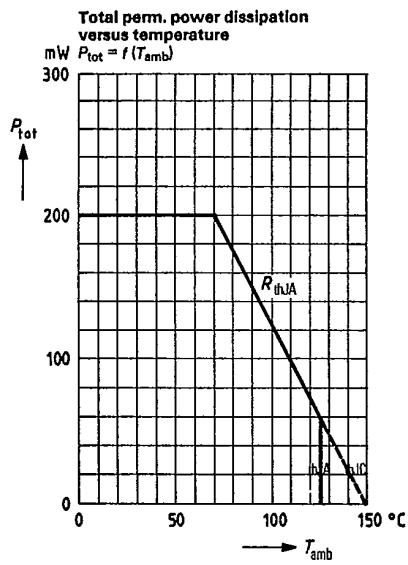
2) Measured with three tone modulation f approx. 800 MHz

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Datasheets for electronics components.