

BFW 64**200 MHz SMALL SIGNAL AMPLIFIER****NPN DIFFUSED SILICON PLANAR TRANSISTOR**

GENERAL DESCRIPTION - The BFW64 is a high frequency NPN Silicon Planar Transistor which has been designed for low noise, small signal amplifiers. It is suitable for the VHF stages of radar and telecommunication systems.

ABSOLUTE MAXIMUM RATINGS (Note 1)**Maximum Temperatures**

T_{STG}	Storage Temperature Range	-55°C to 175°C
T_J	Operating Junction Temperature	175°C
T_L	Lead Temperature (Soldering, 10 s time limit)	260°C

Maximum Power Dissipations (Notes 2 and 3)

P_D	Total Dissipation at 25°C Case Temperature	0.215 W
	at 25°C Ambient Temperature	0.15 W

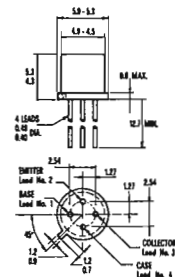
Maximum Voltages (25°C free air temperature)

V_{CBO}	Collector to Base Voltage	40 V
V_{CEO}	Collector to Emitter Voltage (Note 4)	30 V
V_{EBO}	Emitter to Base Voltage	4 V

ELECTRICAL CHARACTERISTICS (25°C free air temperature)

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
h_{FE}	DC Current Gain (Note 5)	30	70			$I_C = 4 \text{ mA}$ $V_{CE} = 10 \text{ V}$
V_{BE}	Base-Emitter Voltage	0.73	0.8		V	$I_C = 4 \text{ mA}$ $V_{CE} = 10 \text{ V}$
I_{CES}	Collector Reverse Current	0.001	0.5		μA	$V_{CE} = 10 \text{ V}$ $V_{EB} = 0$
BV_{CBO}	Collector to Base Breakdown Voltage	40			V	$I_C = 100 \mu\text{A}$ $I_E = 0$
BV_{EBO}	Emitter to Base Breakdown Voltage	4			V	$I_E = 100 \mu\text{A}$ $I_C = 0$
LV_{CEO}	Collector to Emitter Sustaining Voltage (Notes 4 and 5)	30			V	$I_C = 5 \text{ mA}$ $I_B = 0$
h_{fe}	High Frequency Current Gain	4.5	6.5			$I_C = 4 \text{ mA}$ $V_{CE} = 10 \text{ V}$ $f = 100 \text{ MHz}$
C_{re}	Reverse Transfer Capacitance	0.2	0.25		pF	$I_C = 4 \text{ mA}$ $V_{CE} = 10 \text{ V}$ $f = 1 \text{ MHz}$
NF	Noise Figure	5	6		dB	$I_C = 4 \text{ mA}$ $V_{CE} = 10 \text{ V}$ $f = 200 \text{ MHz}$ $R_S = 50 \text{ Ohm}$
G	Power Gain (neutralized)	18	21		dB	$I_C = 4 \text{ mA}$ $V_{CE} = 10 \text{ V}$ $f = 200 \text{ MHz}$
G	Power Gain (unneutralized)	17.7			dB	$I_C = 4 \text{ mA}$ $V_{CE} = 10 \text{ V}$ $f = 200 \text{ MHz}$ $\text{stab. factor} = 4$
AGC	Automatic Gain Control Collector Current	10	15		mA	$G = G(I_C = 4 \text{ mA}) - 30 \text{ dB}$ $f = 200 \text{ MHz}$

PHYSICAL DIMENSIONS
in accordance with
JEDEC TO-18 outline



Note: All dimensions in mm.
Leads are gold-plated copper.

NOTES:

- (1) These ratings are limiting values above which the serviceability of any individual semiconductor device may be impaired.
- (2) These are steady-state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.
- (3) These ratings give a maximum junction temperature of 175°C and junction-to-case thermal resistance of $700^{\circ}\text{C}/\text{W}$ (derating factor of $1.43\text{ mW}/^{\circ}\text{C}$); junction-to-ambient thermal resistance of $1000^{\circ}\text{C}/\text{W}$ (derating factor of $1\text{ mW}/^{\circ}\text{C}$).
- (4) This rating refers to a high-current point where collector-to-emitter voltage is lowest. For more information send for SGS-AR 5.
- (5) Measured under pulse conditions: pulse length = $300\mu\text{sec}$; duty cycle = 1%.