

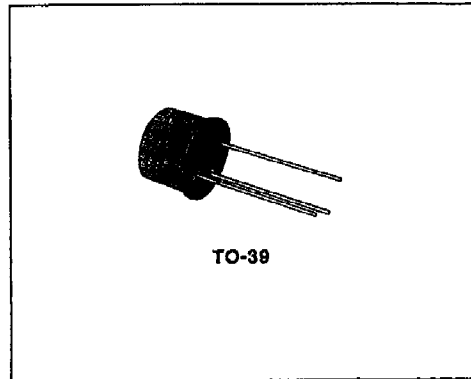
BFW16A
BFW17A

CATV-MATV AMPLIFIERS

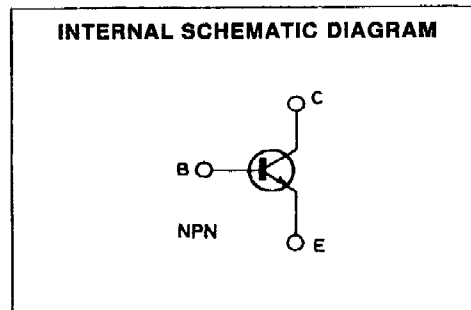
DESCRIPTION

The BFW 16A and BFW 17A are multi-emitter silicon planar epitaxial NPN transistors in Jedec TO-39 metal case, with extremely good intermodulation properties and high power gain. They are primarily intended for final and driver stages in channel and band-aerial amplifiers with high output power from 40 to 860 MHz.

Another possible application is as the final stage of the wide band vertical amplifier in high speed oscilloscopes.



INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base Voltage ($I_E = 0$)	40	V
V_{CER}	Collector-emitter Voltage ($R_{BE} \leq 50 \Omega$)	40	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	25	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	3	V
I_C	Collector Current	150	mA
I_{CM}	Collector Peak Current	300	mA
P_{tot}	Total Power Dissipation at $T_{amb} \leq 25^\circ C$ at $T_{case} \leq 125^\circ C$	0.7 1.5	W W
T_{stg}, T_J	Storage and Junction Temperature	- 65 to 200	$^\circ C$



NJ Semi-Conductors reserves the right to change test conditions, parameters limits and package dimensions without notice information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

Quality Semi-Conductors

THERMAL DATA

$R_{th(j-case)}$	Thermal Resistance Junction-case	Max	50	$^{\circ}C/W$
$R_{th(j-amb)}$	Thermal Resistance Junction-ambient	Max	250	$^{\circ}C/W$

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cutoff Current ($I_E = 0$)	$V_{CB} = 20 V$ $T_{amb} = 150^{\circ}C$			20	μA
$V_{(BR)EBO}$	Emitter-base Breakdown Voltage ($I_C = 0$)	$I_E = 100 \mu A$	3			V
$V_{CEK}^{*/**}$	Collector-emitter Knee Voltage	$I_C = 100 mA$			0.75	V
h_{FE}^*	DC Current Gain	$I_C = 50 mA$ $V_{CE} = 5 V$ $I_C = 150 mA$ $V_{CE} = 5 V$	25 25			
f_T	Transition Frequency	$I_C = 150 mA$ $V_{CE} = 15 V$ $f = 500 MHz$ for BFW 16A for BFW 17A		1.2 1.1		GHz GHz
C_{CBO}	Collector-base Capacitance	$I_E = 0$ $V_{CB} = 15 V$ $f = 1 MHz$			4	pF
C_{re}	Reverse Capacitance	$I_C = 10 mA$ $V_{CE} = 15 V$ $f = 1 MHz$		1.7		pF
NF	Noise Figure (for BFW 16A only)	$I_C = 30 mA$ $V_{CE} = 15 V$ $R_g = 75 \Omega$ $f = 200 MHz$			6	dB
G_{pe}	Power Gain (not neutralized)	$I_C = 70 mA$ $V_{CE} = 18 V$ $f = 200 MHz$ for BFW 16A and BFW 17A $f = 800 MHz$ For BFW 16A only		16 6.5		dB dB
P_0	Output Power	$I_C = 70 mA$ $V_{CE} = 18 V$ Channel 9 ⁽¹⁾ for BFW 16A for BFW 17A Channel 62 ⁽²⁾ For BFW 16A only	130 70	150 90		mW mW mW

* Pulsed : pulse duration = 300 μs , duty cycle = 1 %.

** I_B = value for which $I_C = 110 mA$ at $V_{CE} = 1 V$.

(1) $f_p = 202 MHz$, $f_q = 205 MHz$, $f_{(2q-p)} = 208 MHz$.

(2) $f_p = 798 MHz$, $f_q = 802 MHz$, $f_{(2q-p)} = 806 MHz$.