



## NPN BFW16A

### HF WIDEBAND TRANSISTORS

The BFW16A is NPN multi-emitter transistor in a TO-39 metal envelope, with the collector connected to the case. The transistor has extremely good intermodulation properties and a high power gain. It is a ruggedized version of the BFW16, which it succeeds.

It is primarily intended for :

- Final and driver stages of channel and band aerial amplifiers with high output power for bands I , II , III , IV , V (40-860 MHz).
  - Final stage of the wideband vertical amplifier in high speed oscilloscopes.
- Compliance to RoHS.

#### ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit
V <sub>CEO</sub>	Collector-Emitter Voltage	I <sub>B</sub> = 0	25	V
V <sub>CBOM</sub>	Collector-Base Voltage (open emitter ; peak value)	I <sub>E</sub> = 0	40	V
V <sub>EBO</sub>	Emitter-Base Voltage	I <sub>C</sub> = 0	2	V
V <sub>CERM</sub>	Collector-Emitter Voltage	R <sub>BE</sub> ≤ 50Ω	40	V
I <sub>C</sub>	Collector Current		150	mA
I <sub>CM</sub>	Collector Peak Current		300	mA
P <sub>t</sub>	Total Power Dissipation	@ T <sub>C</sub> = 125°	1.5	W
T <sub>J</sub>	Junction Temperature		200	°C
T <sub>Stg</sub>	Storage Temperature		-65 to +200	°C

#### THERMAL CHARACTERISTICS

Symbol	Ratings		Value	Unit
R <sub>thJa</sub>	Thermal Resistance, Junction to Ambient		250	K/W
R <sub>thJmb</sub>	Thermal Resistance, Junction to Mounting Base		50	K/W
R <sub>thJmb-h</sub>	Thermal Resistance, Junction to Mounting Base to heatsink		1.2	K/W



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### ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit	
$I_{CB0}$	Collector Cutoff Current	$I_E=0, V_{CB}=20\text{ V}, T_J=150^\circ\text{C}$	-	-	20	$\mu\text{A}$	
$h_{FE}$	DC Current Gain	$I_C=50\text{ mA}, V_{CE}=5.0\text{ V}$	25	-	-	-	
		$I_C=150\text{ mA}, V_{CE}=5.0\text{ V}$	25	-	-		
$f_T$	Transition frequency	$V_{CE}=15\text{ V}, I_C=150\text{ mA}$ $f=500\text{ MHz}$	-	1.2	-	GHz	
$C_c$	Collector capacitance at $f=1\text{MHz}$	$I_E=I_e=0, V_{CB}=15\text{ V}$	-	-	4	pF	
$C_{re}$	Feedback capacitance at $f=1\text{MHz}$	$I_C=10\text{ mA}, V_{CE}=15\text{ V}$ $T_{amb}=25^\circ\text{C}$	-	1.7	-		
<b>F</b>	Noise figure at $f=200\text{ MHz}$	$I_C=30\text{ mA}, V_{CE}=15\text{ V}$ $Z_S=75\ \Omega, T_{amb}=25^\circ\text{C}$	-	-	6	dB	
<b>G<sub>P</sub></b>	Power gain (not neutralized)	$I_C=70\text{ mA}$ $V_{CE}=18\text{ V}$ $T_{amb}=25^\circ\text{C}$	200 MHz	-	16	-	dB
			800 MHz	-	6.5	-	

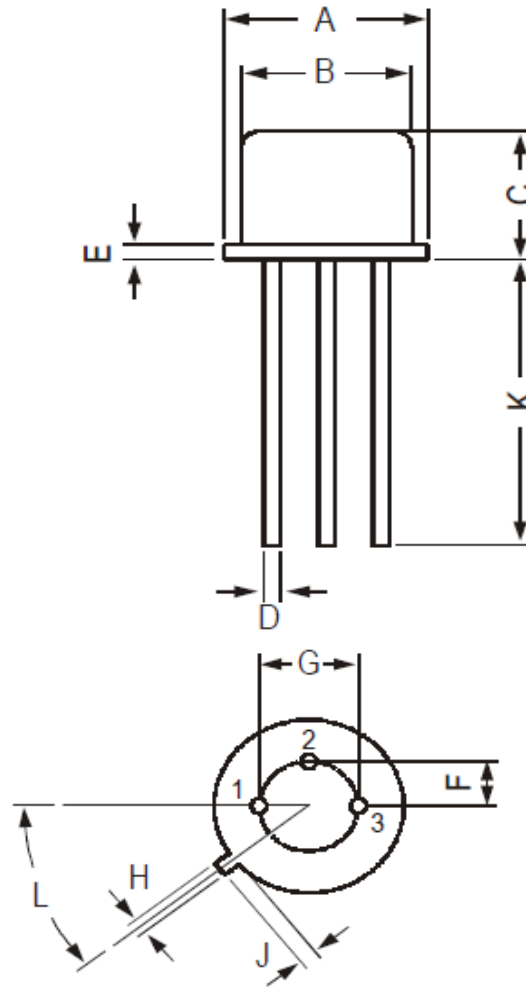


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### MECHANICAL DATA CASE TO-39

DIMENSIONS (mm)		
	min	max
A	8.50	9.39
B	7.74	8.50
C	6.09	6.60
D	0.40	0.53
E	-	0.88
F	2.41	2.66
G	4.82	5.33
H	0.71	0.86
J	0.73	1.02
K	12.70	-
L	42°	48°

Pin 1 :	Emitter
Pin 2 :	Base
Pin 3 :	Collector
Case :	Collector



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