



# BFR 97

## SMALL SIGNAL TRANSISTOR

### NPN-UHF-HIGH LEVEL AMPLIFIER

### ADVANCE DATA

The BFR97 is a silicon epitaxial transistor in "POWER-X" plastic package primary intended for low intermodulation MATV applications.

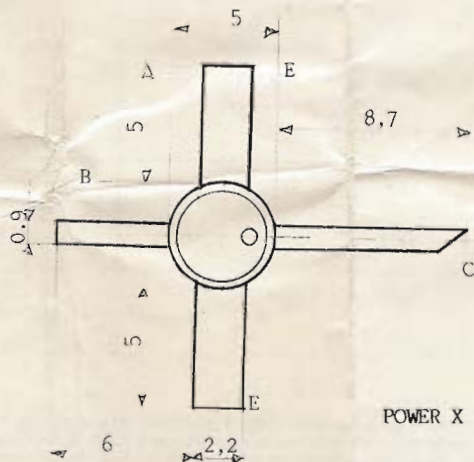
Pt/Ti/Au metallization is used for the ultimate reliability and uniformity. The "POWER-X" package with a compact plastic-Berillia-metal structure assures small dimensions and excellent D.C. power dissipation.

$V_{CBO}$	Collector-base voltage ( $I_E = 0$ )	20 V
$V_{CEO}$	Collector-emitter voltage ( $I_B = 0$ )	15 V
$V_{EBO}$	Emitter-base voltage ( $I_C = 0$ )	3 V
$I_C$	DC collector current	140 mA
$P_{tot}$	Total device power $T_c = 60^\circ$	1,3 W
$T_j$	Junction temperature	150°C
$T_{stg}$	Storage temperature	-55 to 150°C

$V_o$  Output voltage 0,7  $V_{eff}$  for - 60dB IMD 3 tone DIN 45004 at  $V_{ce} = 10V$   $I_c = 75mA$

### MECHANICAL DATA

Dimension in mm.



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## ELECTRICAL CHARACTERISTICS

Parameter	Test conditions	Min	Typ	Max	Unit
$I_{CBO}$ Collector cutoff current ( $I_E=0$ )	$V_{CB} = 10V$			100	nA
$V_{(BR)CBO}$ Collector-base breakdown voltage ( $I_E=0$ )	$I_C = 100 \mu A$	20			V
$V_{(BR)CEO}$ Collector-emitter breakdown voltage ( $I_B=0$ )	$I_C = 1mA$	15			V
$V_{(BR)EBO}$ Emitter-base breakdown voltage ( $I_C=0$ )	$I_E = 100 \mu A$	3			V
$h_{FE}$ DC current gain	$I_C = 75mA$ $V_{CE} = 10V$	30	60		
$f_T$ transition frequency	$I_C = 75mA$ $V_{CE} = 10V$		4,6		GHz
$C_{re}$ Reverse capacitance	$V_{CE} = 10V$		0,9		pF
NF Noise figure	$I_C = 40mA$ $V_{CE} = 10V$ $R_g = opt$ $f = 0,5GHz$		3,3		
$S_{21e}$ Forward transmission gain	$I_C = 75mA$ $V_{CE} = 10V$ $f = 1GHz$		9,5		dB
$G_{max}$ Power maximum available gain	$I_C = 75mA$ $V_{CE} = 10V$ $f = 1GHz$		13		dB

$$*G_{max} = \frac{|S_{21}|^2}{|S_{12}|^2} (K \pm \sqrt{K^2 - 1})$$

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