

**BF 679**  
**BF 679M**

# SILICON PLANAR PNP

## UHF-VHF AGC AMPLIFIER AND OSCILLATOR MIXER

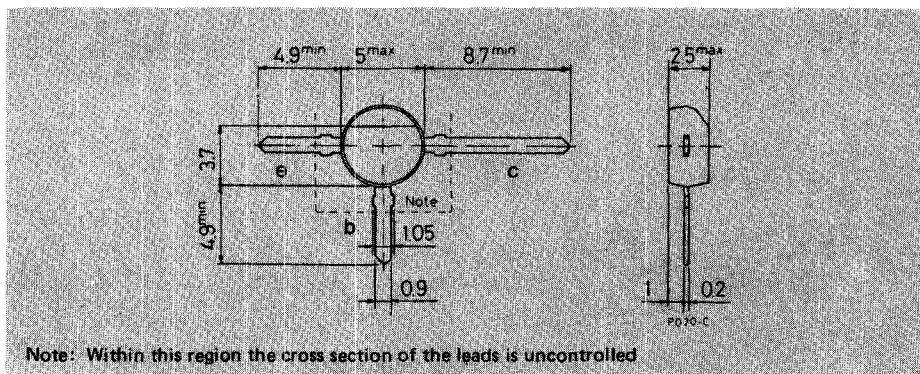
The BF 679 and BF 679M are silicon planar epitaxial PNP transistors in T-plastic package intended for the use in UHF-VHF range up to 900 MHz. Because of its low noise and gain characteristics versus current, the BF 679 is particularly suited as a controlled preamplifier stage in TV varicap tuners. The BF 679M because of its low thermal drift and high oscillation stability is particularly suggested as oscillator mixer.

### ABSOLUTE MAXIMUM RATINGS

$V_{CBO}$	Collector-base voltage ( $I_E = 0$ )	-40	V
$V_{CEO}$	Collector-emitter voltage ( $I_B = 0$ )	-35	V
$V_{EBO}$	Emitter-base voltage ( $I_C = 0$ )	-3	V
$I_C$	Collector current	-30	mA
$I_B$	Base current	-5	mA
$P_{tot}$	Total power dissipation at $T_{amb} \leq 45^\circ\text{C}$	170	mW
$T_{stg}$	Storage temperature	-55 to 150	$^\circ\text{C}$
$T_j$	Junction temperature	150	$^\circ\text{C}$

### MECHANICAL DATA

Dimensions in mm



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## THERMAL DATA

$R_{th\ j-amb}$	Thermal resistance junction-ambient	max	600	°C/W
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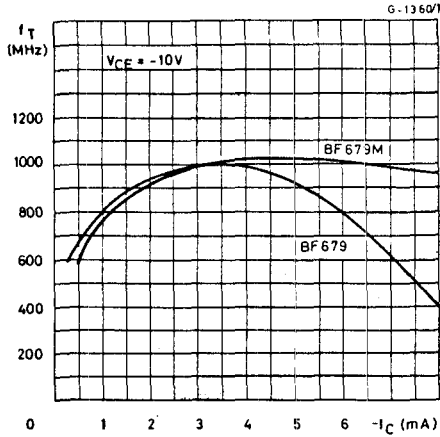
## ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25^{\circ}\text{C}$ unless otherwise specified)

	Parameter	Test conditions	Min.	Typ.	Max.	Unit
	$I_{CBO}$ Collector cutoff current ( $I_E = 0$ )	$V_{CB} = -20\text{V}$			-100	nA
	$V_{(BR)CBO}$ Collector-base breakdown voltage ( $I_E = 0$ )	$I_C = -100\ \mu\text{A}$	-40			V
	$V_{(BR)CEO}$ Collector-emitter breakdown voltage ( $I_B = 0$ )	$I_C = -5\ \text{mA}$	-35			V
	$V_{(BR)EBO}$ Emitter-base breakdown voltage ( $I_C = 0$ )	$I_E = -10\ \mu\text{A}$	-3			V
→	$h_{FE}$ DC current gain	$I_C = -3\ \text{mA}$ $V_{CE} = -10\text{V}$	25	60		
→	$f_T$ Transition frequency	$I_C = -3\ \text{mA}$ $V_{CE} = -10\text{V}$ $f = 100\ \text{MHz}$	700	1000		MHz
	$C_{CBO}$ Collector-base capacitance	$I_E = 0$ $V_{CB} = -10\text{V}$ $f = 100\ \text{MHz}$		0.6		pF
	$C_{rb}$ Reverse capacitance	$I_C = 0$ $V_{CB} = -10\text{V}$ $f = 100\ \text{MHz}$		0.07		pF
	NF* Noise figure	$I_C = -3\ \text{mA}$ $V_{CC} = -10.8\text{V}$ $R_g = 50\ \Omega$ $f = 800\ \text{MHz}$		3.5	5	dB
	$G_{pb}^*$ Power gain	$I_C = -3\ \text{mA}$ $V_{CC} = -10.8\text{V}$ $R_L = 2\ \text{k}\Omega$ $f = 800\ \text{MHz}$	12	15		dB
→	$I_{C(AGC)}^*$ Collector current for $\Delta G_{pb} = 30\ \text{dB}$	for <b>BF 679</b> only $f = 800\ \text{MHz}$ $V_{CC} = -10.8\text{V}$	6.4		7.8	mA

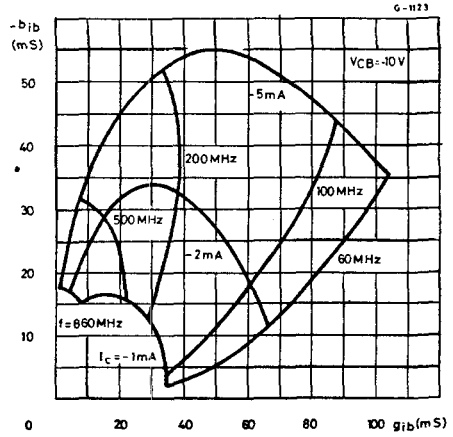
\*See TEST CIRCUIT

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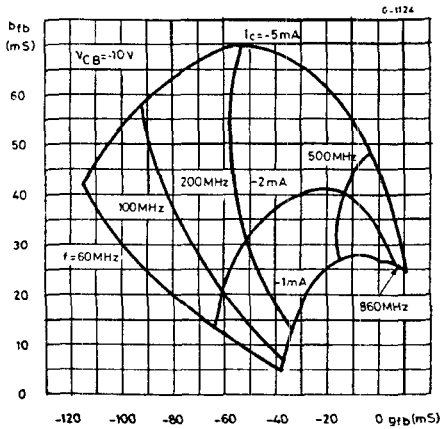
Typical transition frequency



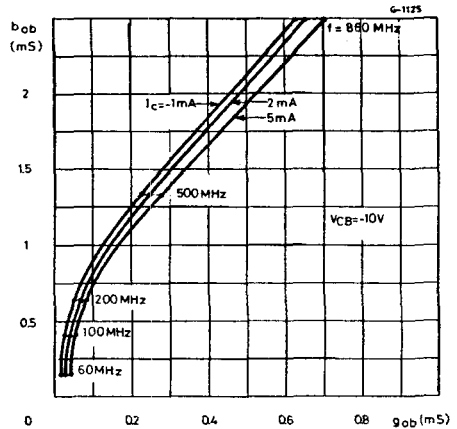
Typical input admittance  
(for BF 679 only)



Typical transfer admittance  
(for BF 679 only)

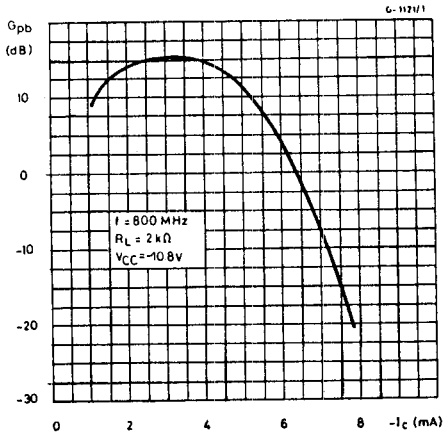


Typical output admittance  
(for BF 679 only)



# BF 679 BF 679 M

Typical power gain  
(for BF 679 only)



## TEST CIRCUIT

Power gain, AGC and noise figure

