

BF 679
BF 679M

SILICON PLANAR PNP

UHF-VHF AGC AMPLIFIER AND OSCILLATOR MIXER

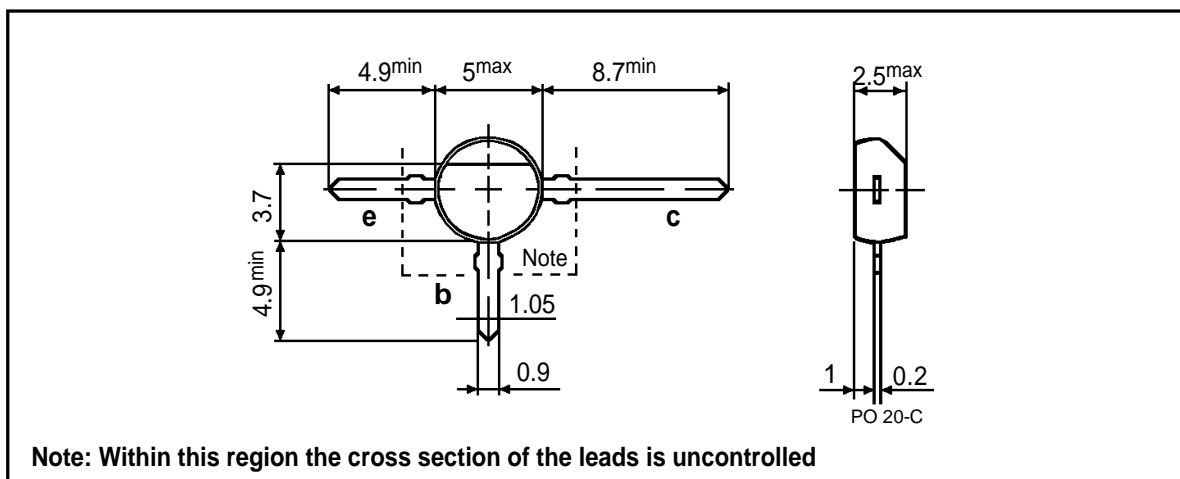
The BF 679 and BF 679M are silicon planar epitaxial PNP transistors in T-plastic package intended for the use in UHF-VHF range up to 900 MHz. Because of its low noise and gain characteristics versus current, the BF 679 is particularly suited as a controlled preamplifier stage in TV varicap tuners. The 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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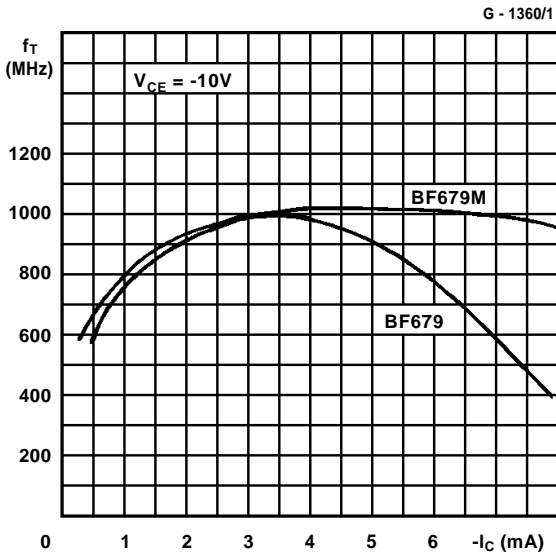
ELECTRICAL CHARACTERISTICS (T_{amb} 25°C unless otherwise specified)

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

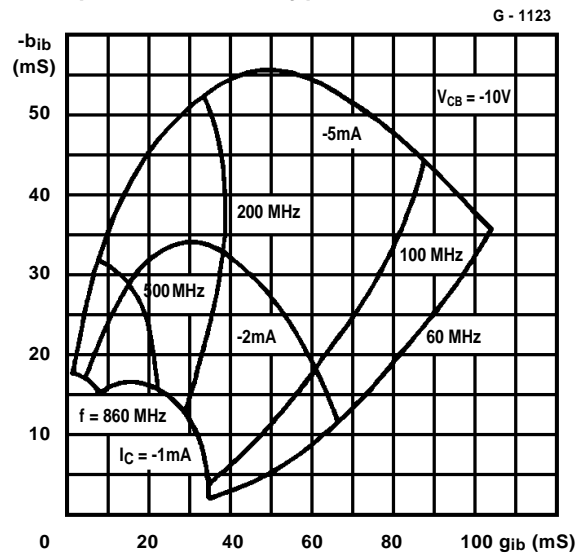
*See TEST CIRCUIT

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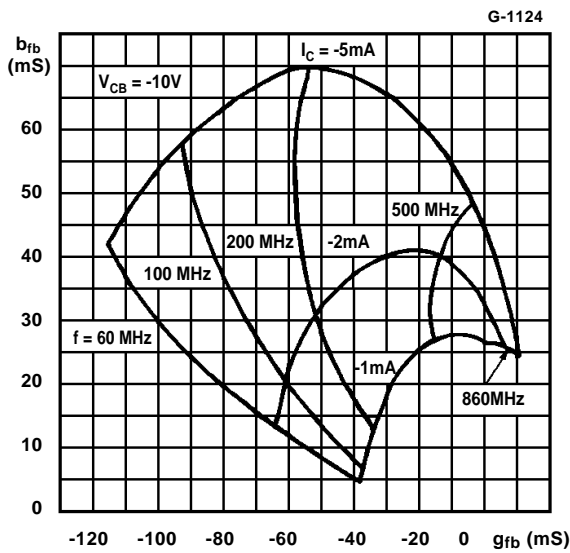
Typical transition frequency



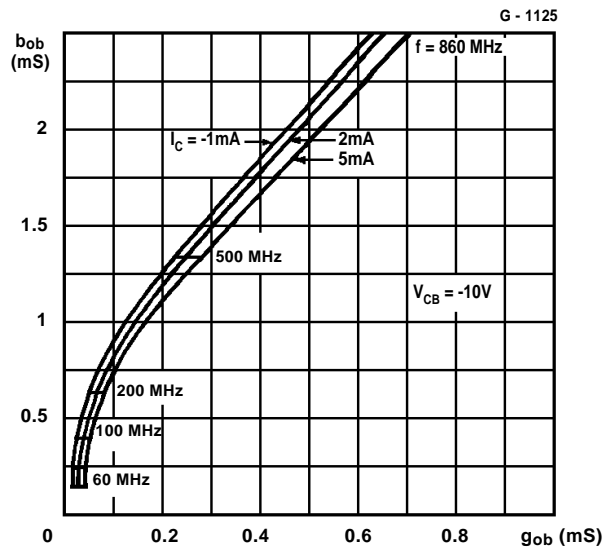
Typical input admittance (for BF 679 only)



Typical transfer admittance (for BF 679 only)

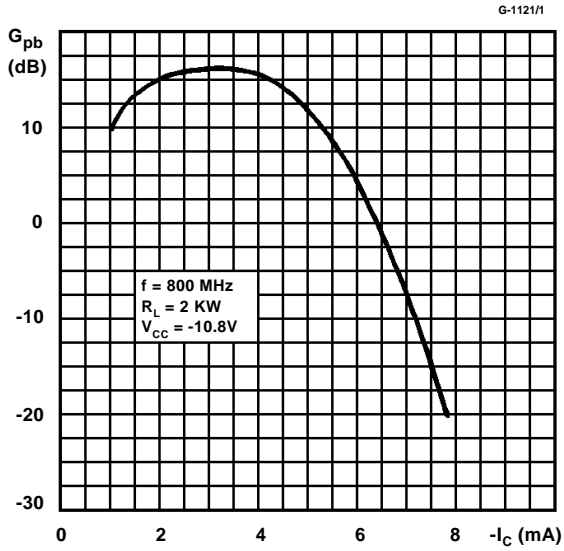


Typical output admittance (for BF 679 only)



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**Typical power gain
(for BF 679 only)**



TEST CIRCUIT

Power gain, AGC and noise figure

