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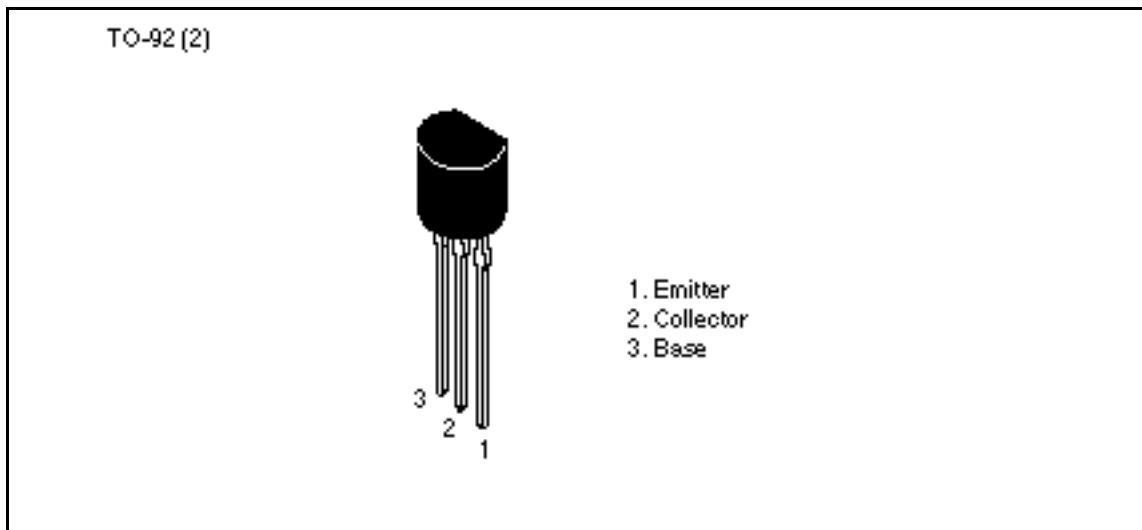
Silicon NPN Epitaxial Planar

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Application

- VHF amplifier
- Mixer, Local oscillator

Outline



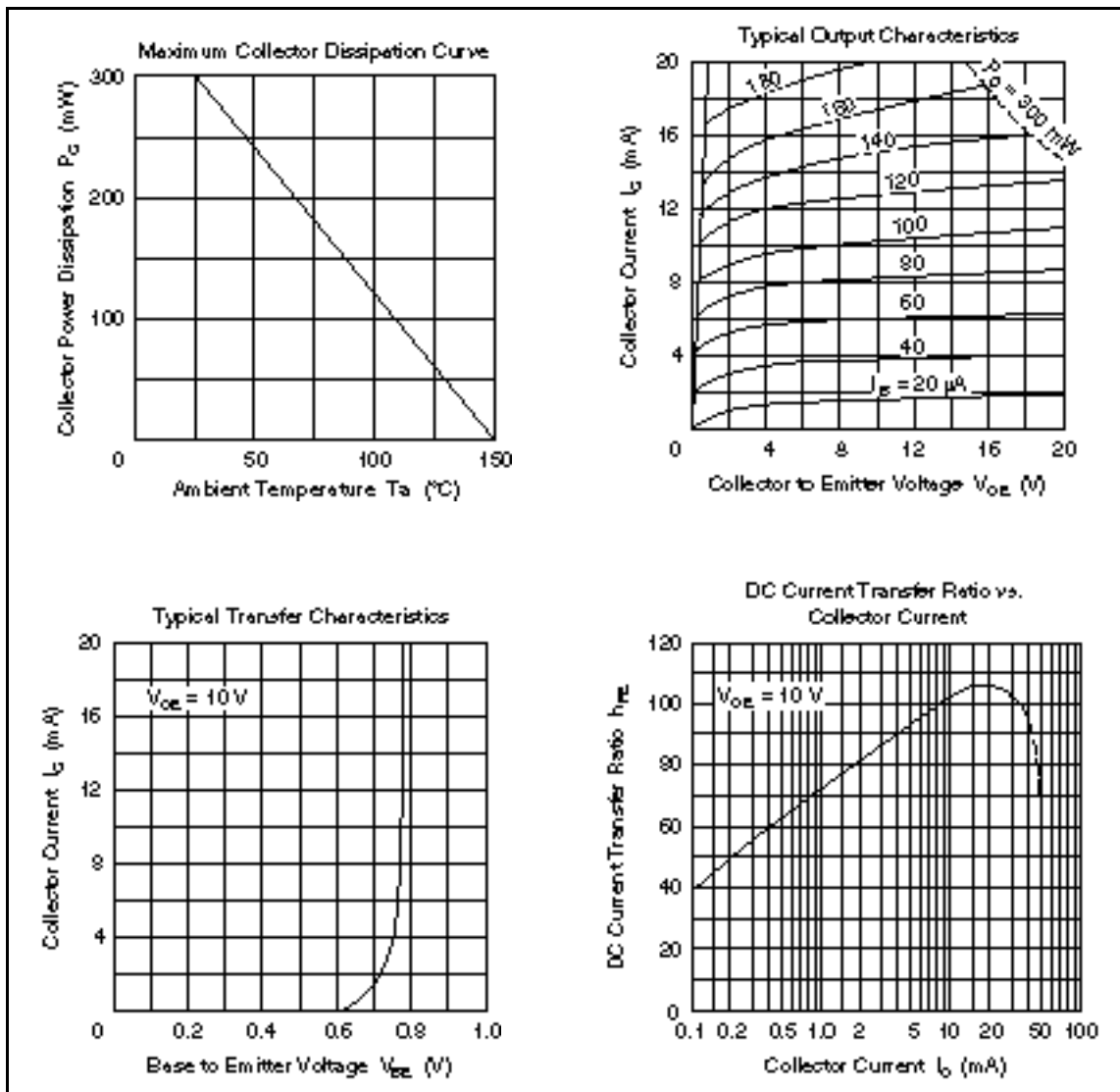
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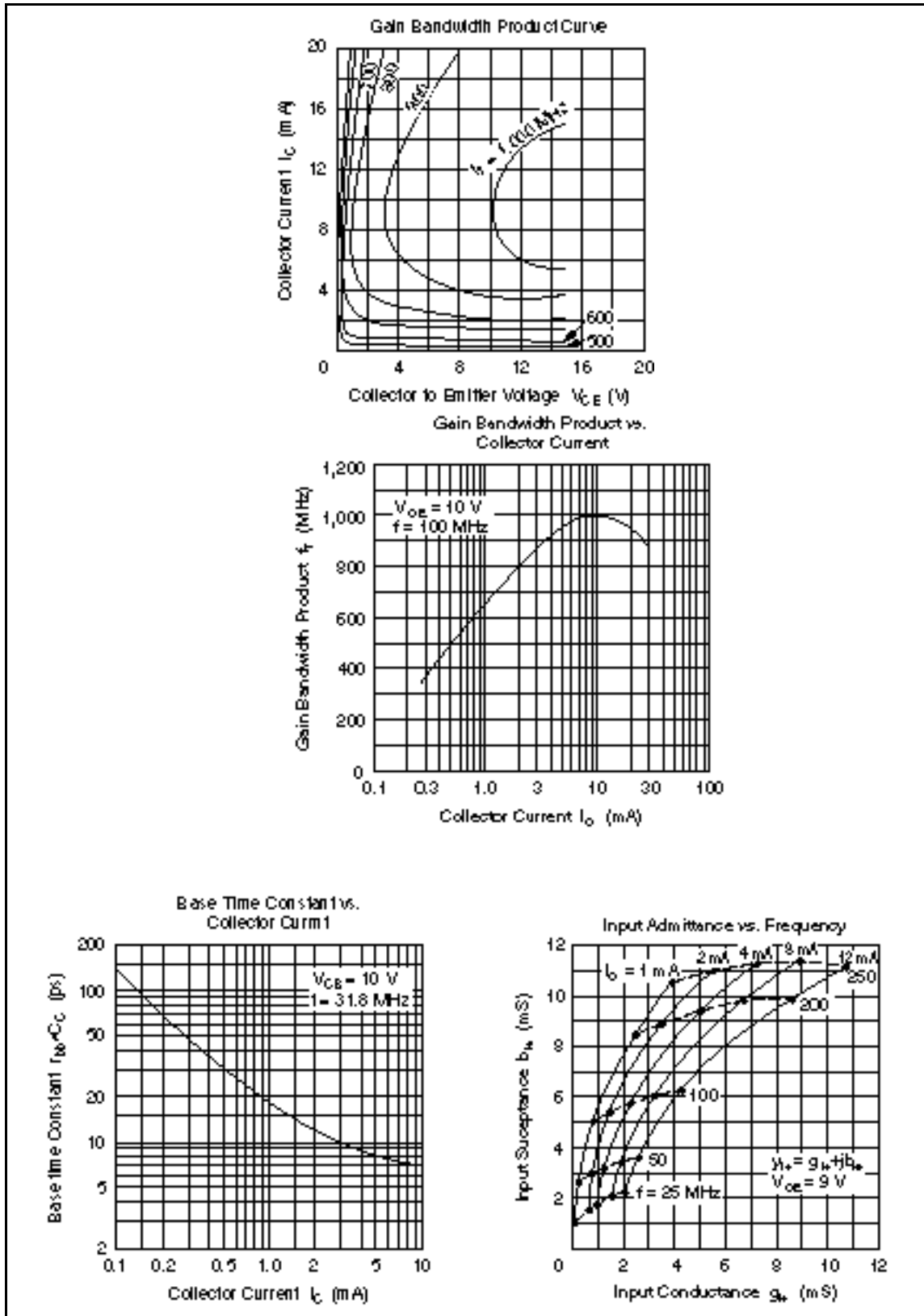
Absolute Maximum Ratings (Ta = 25°C)

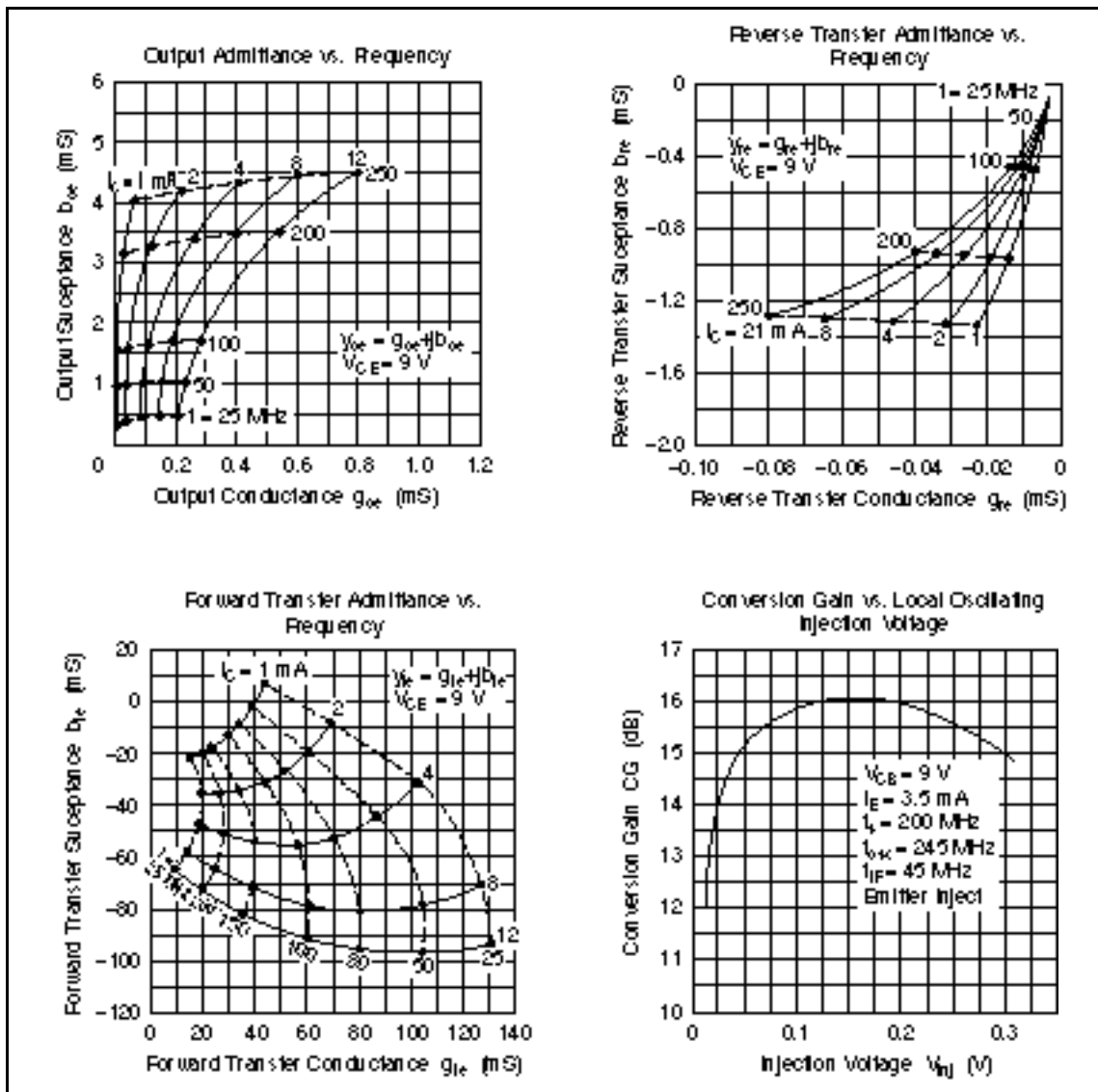
Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	30	V
Collector to emitter voltage	V_{CEO}	19	V
Emitter to base voltage	V_{EBO}	2	V
Collector current	I_C	50	mA
Emitter current	I_E	-50	mA
Collector power dissipation	P_C	300	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

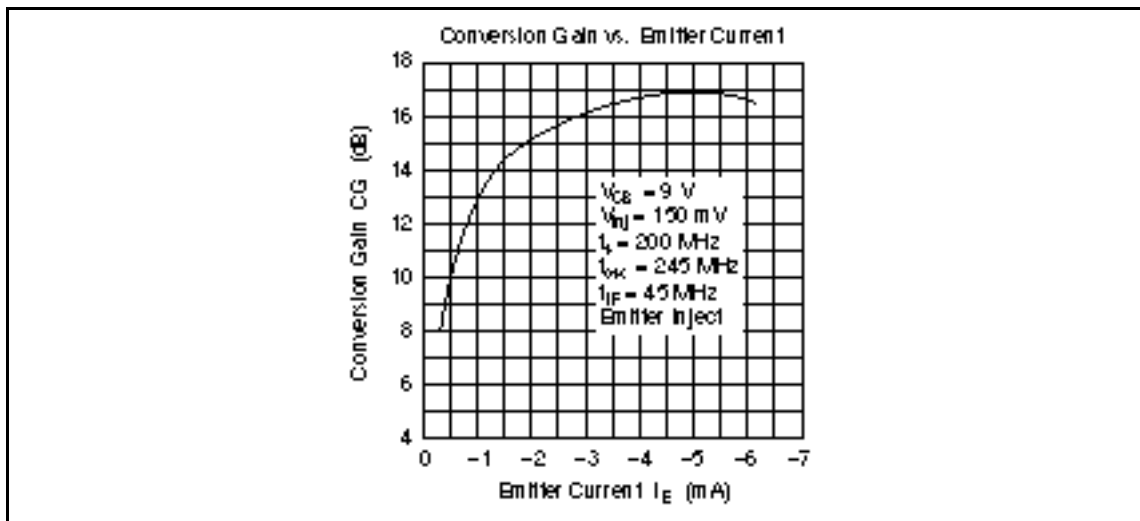
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	30	—	—	V	$I_C = 10 \mu A, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	19	—	—	V	$I_C = 3 \text{ mA}, R_{BE} =$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	2	—	—	V	$I_E = 10 \mu A, I_C = 0$
Collector cutoff current	I_{CBO}	—	—	0.5	μA	$V_{CB} = 10 \text{ V}, I_E = 0$
DC current transfer ratio	h_{FE}	40	—	—		$V_{CE} = 10 \text{ V}, I_C = 10 \text{ mA}$
Gain bandwidth product	f_T	600	1000	—	MHz	$V_{CE} = 10 \text{ V}, I_C = 10 \text{ mA}$
Collector output capacitance	C_{ob}	—	1.0	2.0	pF	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	0.2	1.0	V	$I_C = 20 \text{ mA}, I_B = 4 \text{ mA}$
Base time constant	$r_{bb'} \cdot C_C$	—	10	25	ps	$V_{CB} = 10 \text{ V}, I_C = 10 \text{ mA}, f = 31.8 \text{ MHz}$
Power gain	PG	—	33	—	dB	$V_{CE} = 10 \text{ V}, I_C = 5 \text{ mA}, f = 45 \text{ MHz}$
		—	18	—	dB	$V_{CE} = 10 \text{ V}, I_C = 5 \text{ mA}, f = 200 \text{ MHz}$









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