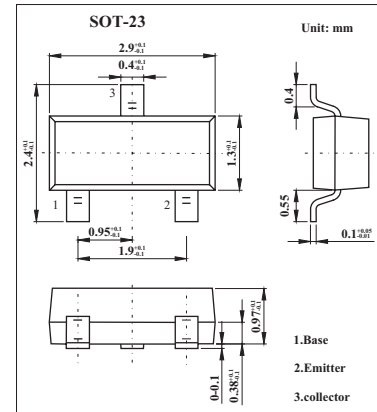


Silicon NPN Epitaxial

2SC2734



■ Features

- UHF frequency converter

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CB0}	20	V
Collector-emitter voltage	V_{CEO}	11	V
Emitter-base voltage	V_{EBO}	3	V
Collector current	I_C	50	mA
Collector power dissipation	P_C	150	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V_{CB0}	$I_C = 10\mu\text{A}$, $I_E = 0$	20			V
Collector-emitter breakdown voltage	V_{CEO}	$I_C = 1\text{mA}$, $R_{BE} = \infty$	11			V
Emitter-base breakdown voltage	V_{EBO}	$I_E = 10\mu\text{A}$, $I_C = 0$	3			V
Collector cutoff current	I_{CBO}	$V_{CB} = 10\text{V}$, $I_C = 0$			0.5	μA
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}$, $I_B = 5\text{mA}$			0.7	V
DC current gain	h_{FE}	$V_{CE} = 10\text{V}$, $I_C = 5\text{mA}$	20	90	200	
Collector output capacitance	C_{ob}	$V_{CB} = 10\text{V}$, $I_E = 0$, $f = 1\text{MHz}$		0.9	1.5	pF
Conversion gain	CG	$V_{CC} = 6\text{V}$, $I_C = 2\text{mA}$, $f = 900\text{MHz}$, $f_{osc} = 930\text{MHz}$ (0dBm), $f = 30\text{MHz}$		15		dB
Noise figure	NF	$V_{CC} = 6\text{V}$, $I_C = 2\text{mA}$, $f = 900\text{MHz}$, $f_{osc} = 930\text{MHz}$ (0dBm), $f_{out} = 30\text{MHz}$		9		dB
Oscillating output voltage	V_{osc}	$V_{CC} = 6\text{V}$, $I_C = 5\text{mA}$, $f = 930\text{MHz}$		140		mV
Transition frequency	f_T	$V_{CE} = 10\text{V}$, $I_C = 10\text{mA}$	1.4	3.5		GHz

■ Marking

Marking	GC
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■ Typical Characteristics

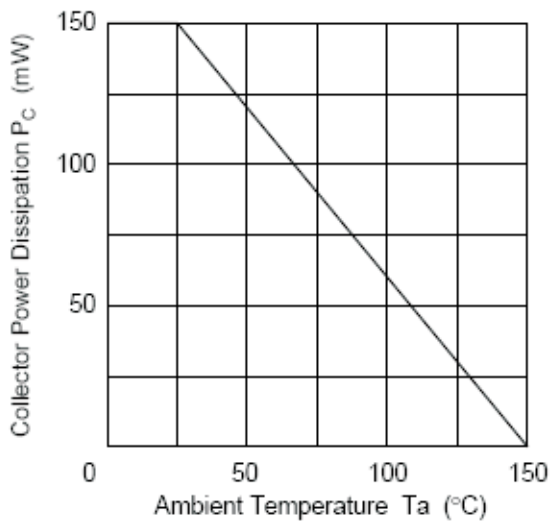


Fig.1 Maximum Collector Dissipation Curve

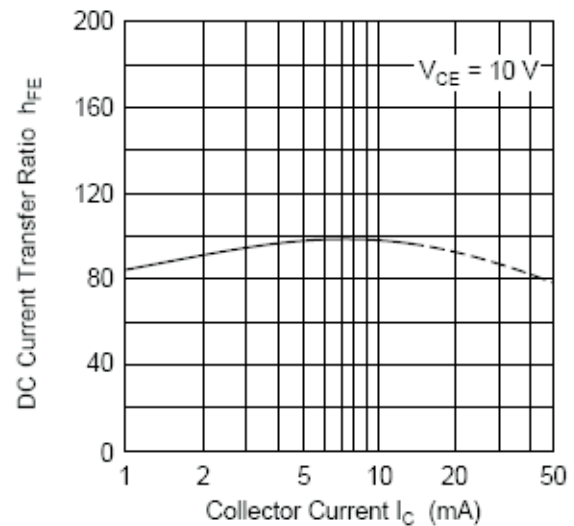


Fig.2 DC Current Transfer Ratio vs. Collector Current

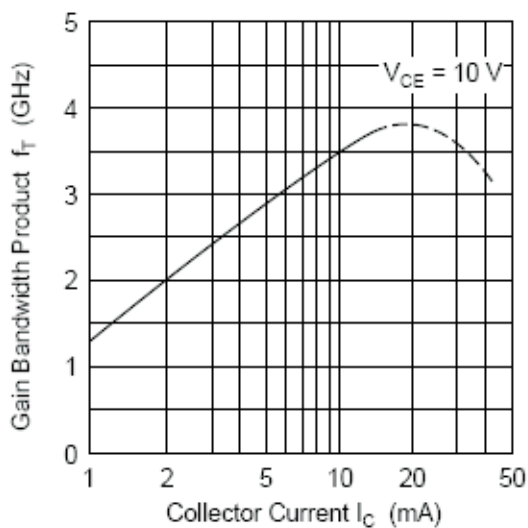


Fig.3 Gain Bandwidth Product vs. Collector Current

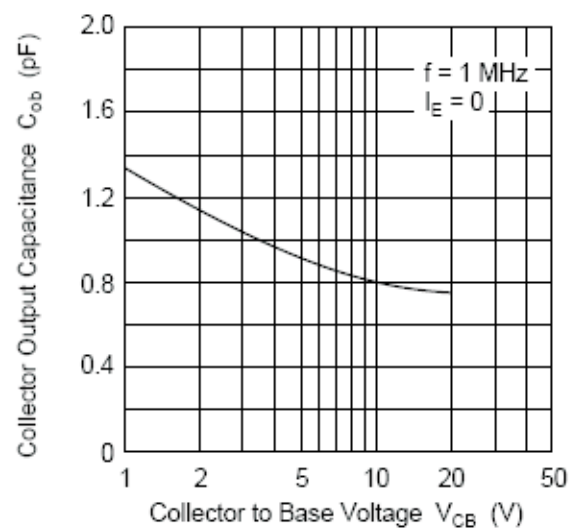


Fig.4 Collector Output Capacitance vs. Collector to Base Voltage

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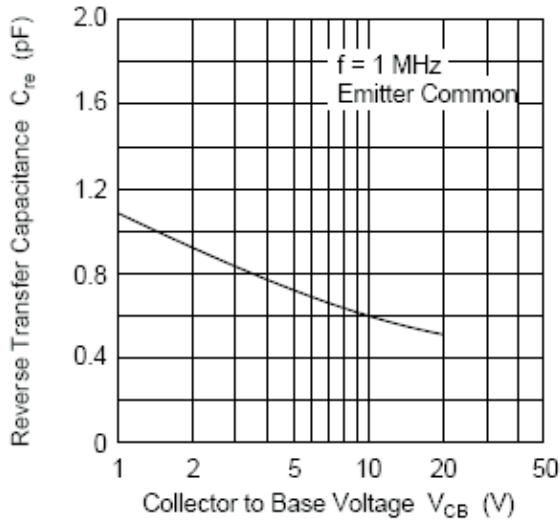


Fig.5 Reverse Transfer Capacitance vs. Collector to Base Voltage

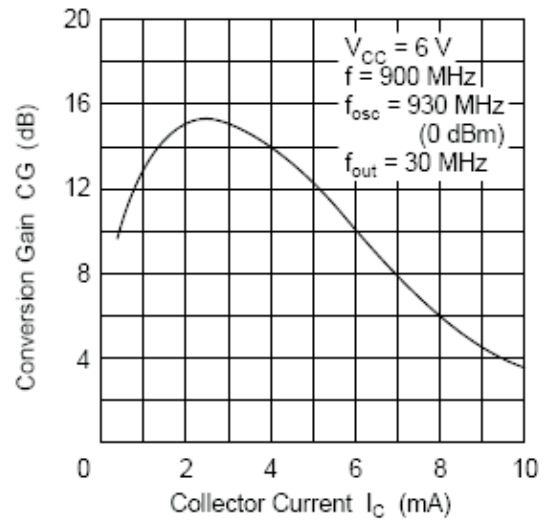


Fig.6 Conversion Gain vs. Collector Current

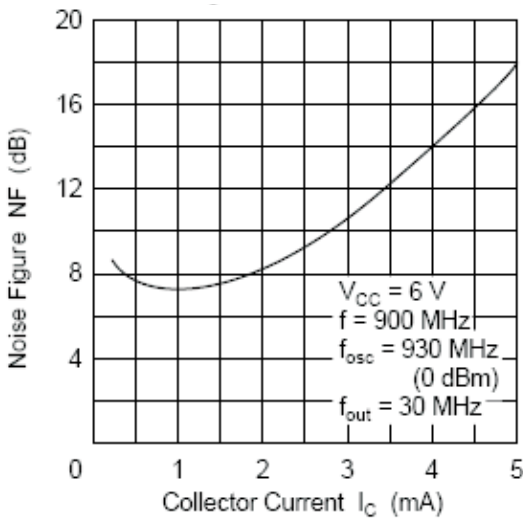


Fig.7 Noise Figure vs. Collector Current

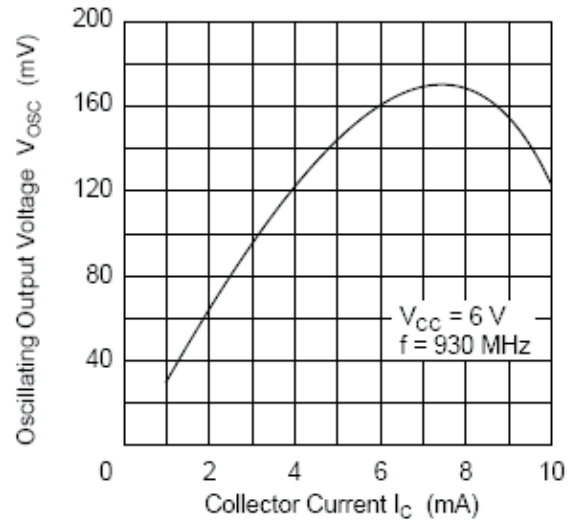


Fig.8 Oscillating Output Voltage vs. Collector Current

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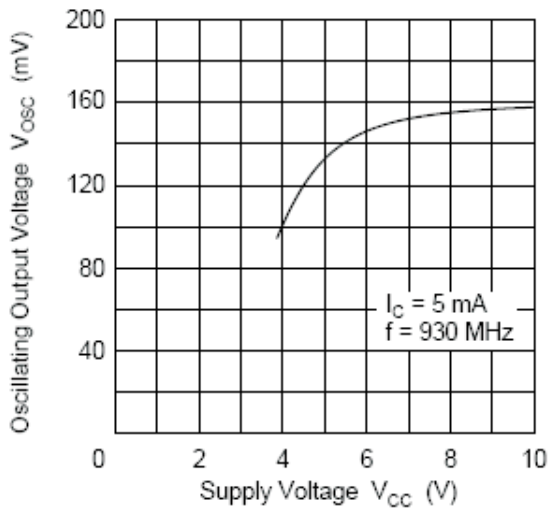


Fig.9 Oscillating Output Voltage vs. Supply Voltage

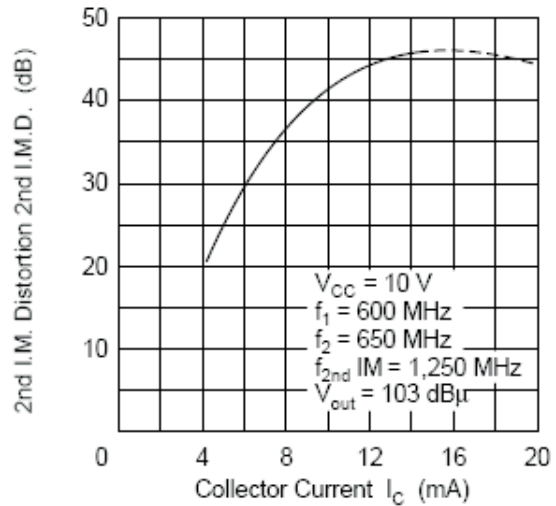


Fig.10 2nd I.M. Distortion vs. Collector Current

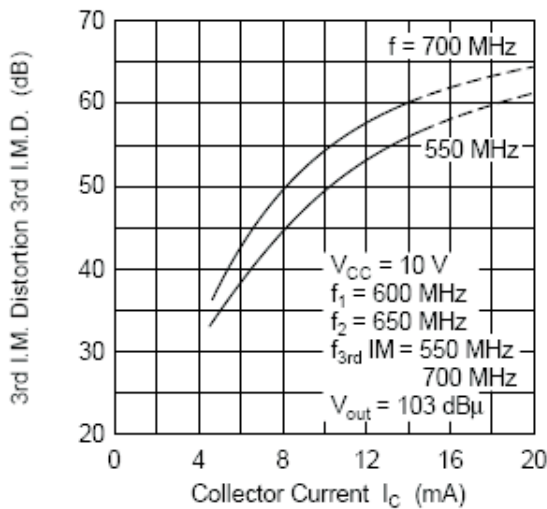


Fig.11 3rd I.M. Distortion vs. Collector Current

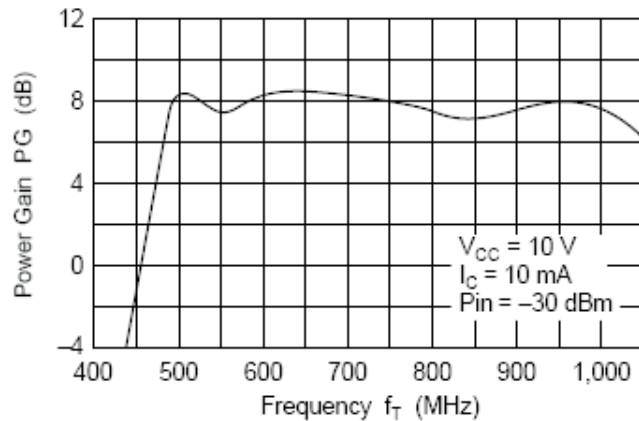


Fig.12 Power Gain vs. Frequency