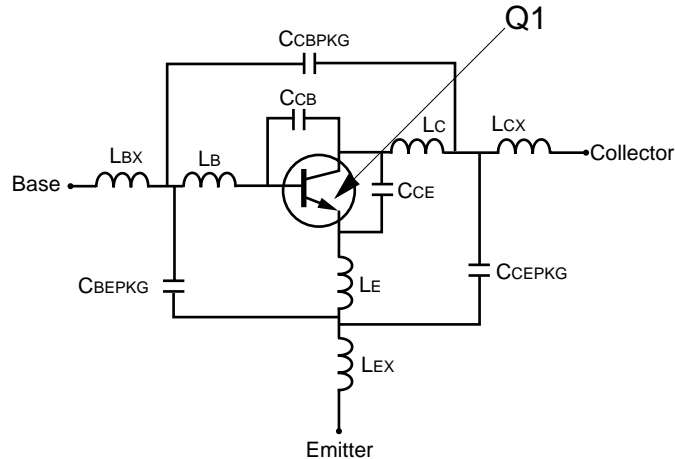


### SCHEMATIC



### BJT NONLINEAR MODEL PARAMETERS <sup>(1)</sup>

Parameters	Q1	Parameters	Q1
IS	3.8e-16	MJC	0.48
BF	135.7	XCJC	0.56
NF	1	CJS	0
VAF	28	VJS	0.75
IKF	0.6	MJS	0
ISE	3.8e-15	FC	0.75
NE	1.49	TF	11e-12
BR	12.3	XTF	0.36
NR	1.1	VTF	0.65
VAR	3.5	ITF	0.61
IKR	0.06	PTF	50
ISC	3.5e-16	TR	32e-12
NC	1.62	EG	1.11
RE	0.4	XTB	0
RB	6.14	XTI	3
RBM	3.5	KF	0
IRB	0.001	AF	1
RC	4.2		
CJE	0.796e-12		
VJE	0.71		
MJE	0.38		
CJC	0.549e-12		
VJC	0.65		

(1) Gummel-Poon Model

### UNITS

Parameter	Units
time	seconds
capacitance	farads
inductance	henries
resistance	ohms
voltage	volts
current	amps

### ADDITIONAL PARAMETERS

Parameters	68830
CCB	0.24e-12
CCE	0.27e-12
LB	0.5e-9
LE	0.86e-9
CCBPKG	0.08e-12
CCEPKG	0.04e-12
CBEPKG	0.04e-12
LBX	0.2e-9
LCX	0.1e-9
LEX	0.2e-9

### MODEL RANGE

Frequency: 0.05 to 3.0 GHz  
 Bias:  $V_{CE} = 1\text{ V to }5\text{ V}$ ,  $I_C = 1\text{ mA to }10\text{ mA}$   
 Date: 10/11/96