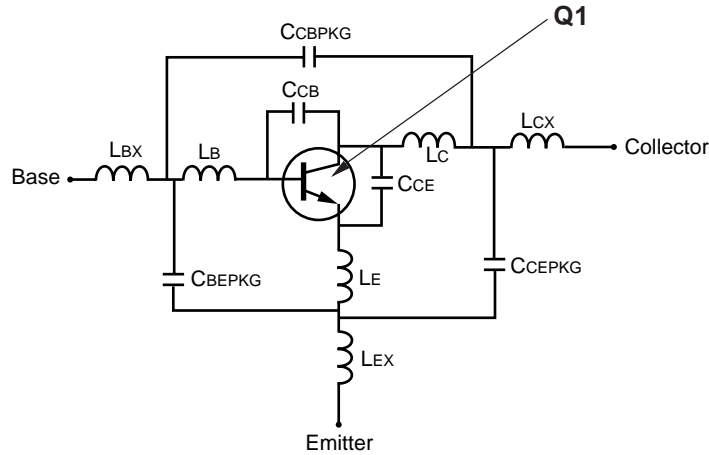


### SCHEMATIC



### BJT NONLINEAR MODEL PARAMETERS(1)

Parameters	Q1	Parameters	Q1
IS	2.7e-16	MJC	0.56
BF	185.0	XCJC	0
NF	1.02	CJS	0
VAF	15.0	VJS	0.750
IKF	0.055	MJS	0
ISE	1.77e-11	FC	0.50
NE	2.1	TF	14.0e-12
BR	1.0	XTF	3.0
NR	1.0	VTF	25.0
VAR	Infinity	ITF	0.1
IKR	Infinity	PTF	0
ISC	0	TR	0.3e-9
NC	2.0	EG	1.11
RE	0.6	XTB	0
RB	12.0	XTI	3.0
RBM	3.7	KF	0
IRB	1.2e-5	AF	1.0
RC	8.0		
CJE	1.2e-12		
VJE	0.77		
MJE	0.50		
CJC	0.8e-12		
VJC	0.27		

### UNITS

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

### ADDITIONAL PARAMETERS

Parameters	68139
CCB	0.07e-12
CCE	0.01e-12
LB	0.88e-9
LC	0.79e-9
LE	0.7e-9
CCBPKG	0.165e-12
CCEPKG	0.165e-12
CBEPKG	0.01e-12
LBX	0.39e-9
LCX	0.39e-9
LEX	0.2e-9

### MODEL RANGE

Frequency: 0.1 to 3.0 GHz  
 Bias:  $V_{CE} = 2.5\text{ V to } 8.0\text{ V}$ ,  $I_C = 0.3\text{ mA to } 7\text{ mA}$   
 Date: 6/17/96

(1) Gummel-Poon Model