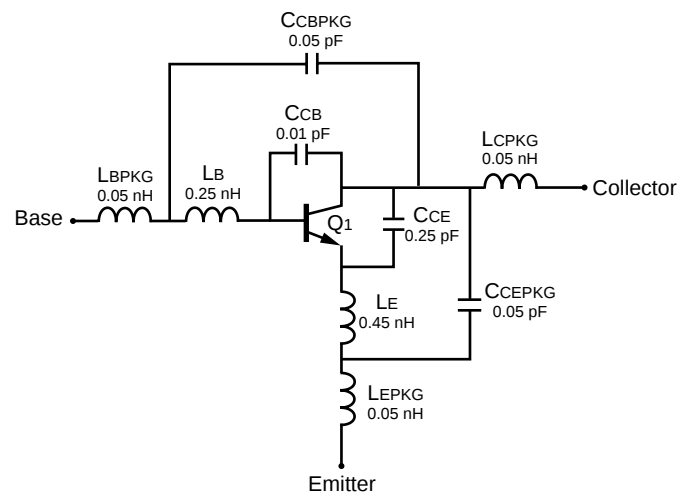


NEC

NONLINEAR MODEL

NE851M13

SCHEMATIC



BJT NONLINEAR MODEL PARAMETERS⁽¹⁾

Parameters	Q1	Parameters	Q1
IS	137e-18	MJC	0.14
BF	166	XCJC	0.5
NF	0.9871	CJS	0
VAF	20.4	VJS	0.75
IKF	50	MJS	0
ISE	80.4e-15	FC	0.55
NE	2.4	TF	15e-12
BR	28.7	XTF	0.1
NR	0.9889	VTF	2
VAR	2.7	ITF	0.03
IKR	0.021	PTF	0
ISC	532e-18	TR	1.0e-9
NC	1.28	EG	1.11
RE	0.45	XTB	0
RB	4	XTI	3
RBM	1	KF	170e-15
IRB	0	AF	1.65
RC	1.7		
CJE	2.4e-12		
VJE	0.87		
MJE	0.34		
CJC	0.65e-12		
VJC	0.52		

(1) Gummel-Poon Model

ADDITIONAL PARAMETERS

Parameters	NE851M13
CCB	0.01 pF
CCE	0.25 pF
LB	0.25 nH
LE	0.45 nH
CCBPKG	0.05 pF
CCEPKG	0.05 pF
LBX	0.05 nH
LCX	0.05 nH
LEX	0.05 nH

MODEL TEST CONDITIONS
Frequency: 0.1 to 5.0 GHz
Bias: VCE = 1 V to 4 V, IC = 1 mA to 40 mA
Date: 09/2001