MT3S11FS SPICE parameters (UCB SPICE 2G6) 20031112

NET LIST

```
.SUBCKT MT3S11FS 1 2 3
Re1      3 18    1.01E-07   ohm
Re2      9 19    1.01E-07   ohm
Le1      6 18    3.92E-11     H
Le2      6 19    3.92E-11     H
Ceg1     6  0    1.91E-14     F
Ceg2     9  0    1.77E-14     F
Rb1      2 15    1.01E-07   ohm
Rb2      8 16    1.01E-07   ohm
Lb1      5 15    3.92E-11     H
Lb2      5 16    3.92E-11     H
Cbg1     5  0    1.91E-14     F
Cbg2     8  0    1.77E-14     F
Rc1      1 13    1.01E-07   ohm
Rc2      7 14    1.01E-07   ohm
Lc1      4 13    3.95E-11     H
Lc2      4 14    3.95E-11     H
Ccg1     4  0    2.92E-14     F
Ccg2     7  0    4.02E-14     F
Cbe1     5  6    4.02E-14     F
Cbc1     7  8    2.21E-14     F
Cce1     7  9    2.21E-14     F
Le3      9 20    4.52E-10     H
Re3     12 20    2.00E-02   ohm
Lb3      8 17    3.73E-10     H
Rb3     11 17    2.00E-02   ohm
Cbe3    11 12    3.22E-14     F
Cce2     7 12    5.63E-13     F
Cbc2     7 11    2.81E-13     F

Q1  7  11  12  NPN
+ AREA   =          1
.MODEL  NPN  NPN
+ IS     =    1.12E-15     A
+ BF     =    1.89E+02
+ NF     =    9.97E-01
+ VAF    =    2.92E+01     V
+ IKF    =    1.00E+00     A
+ ISE    =    9.34E-12     A
+ NE     =    3.20E+00
+ BR     =    2.05E+01
+ NR     =    9.91E-01
+ VAR    =    2.34E+00     V
+ IKR    =    1.87E-03     A
+ ISC    =    3.27E-17     A
+ NC     =    1.06E+00
+ RB     =    2.00E+00   ohm
+ IRB    =    1.00E-09     A
+ RBM    =    2.00E+00   ohm
+ RE     =    1.46E+00   ohm
+ RC     =    3.57E+00   ohm
+ XTB    =    0.00E+00
+ EG     =    1.11E+00    eV
+ XTI    =    3.00E+00
+ CJE    =    2.63E-12     F
+ VJE    =    9.50E-01     V
+ MJE    =    4.75E-01
+ TF     =    6.09E-12     s
+ XTF    =    1.00E+01
+ VTF    =    3.00E+00     V
+ ITF    =    2.01E-01     A
+ PTF    =    2.00E+01   deg
+ CJC    =    7.48E-13     F
+ VJC    =    6.46E-01     V
+ MJC    =    1.30E-01
+ XCJC   =    1.00E+00
+ TR     =    1.00E-09     s
+ FC     =    8.50E-01
.ENDS
```

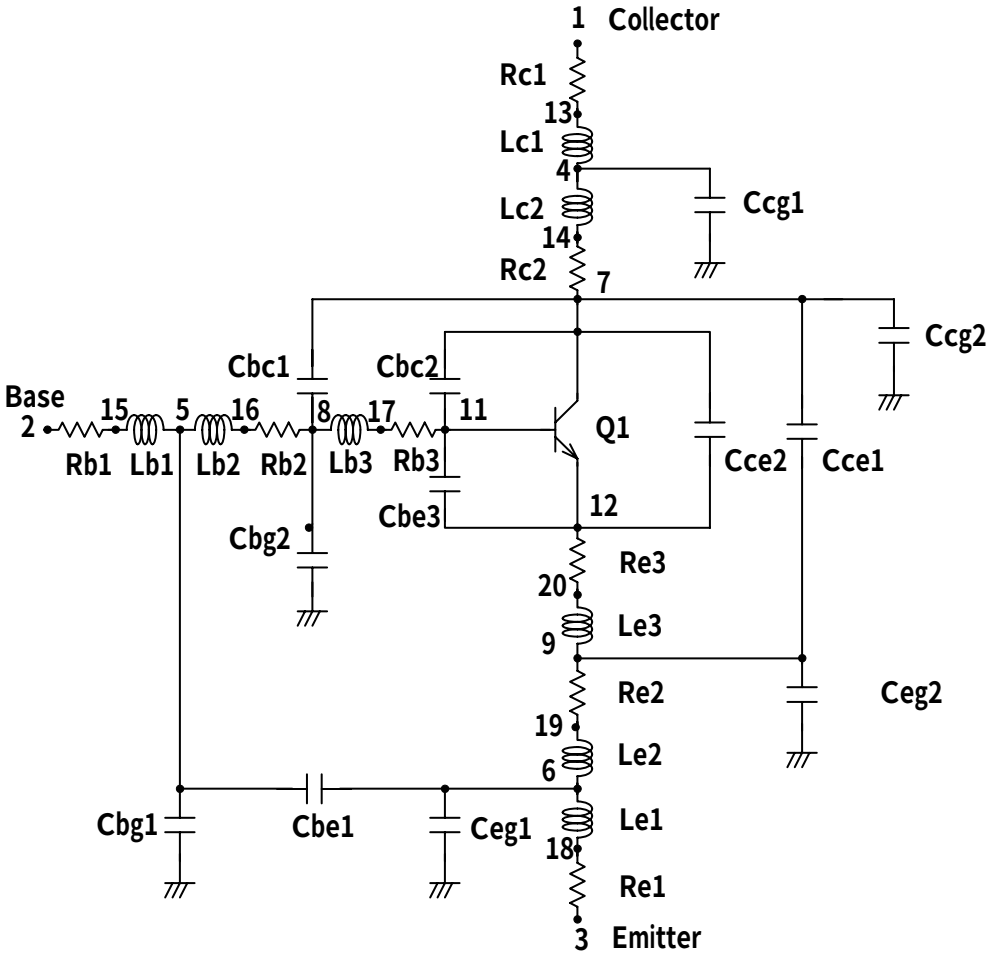

Fig1.Equivalent Circuit

Note1:
This data is valid for up to 6GHz.

Note2:
This data include the reference pads which we note in the data book.
The reference plane is defined as below figure.

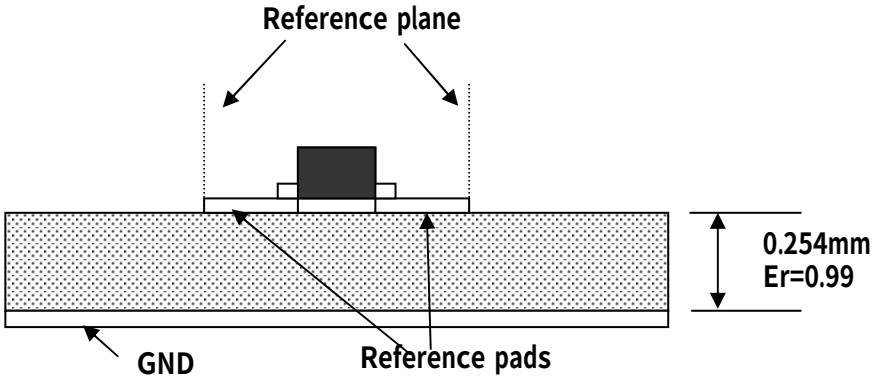

Fig2.Reference plane

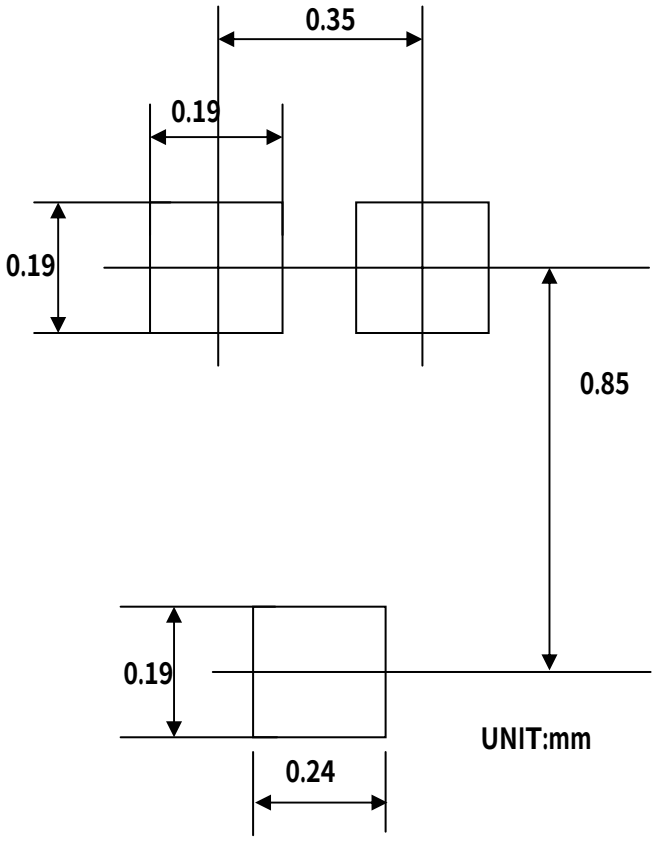

Fig3.Reference pads(fSM)

NOTE3:
Parasitic capacities are also modeled in this data.
In general some capacities exist between pads and GND or frame and GND.
Cbg1,Cbg2,Ccg1,Ccg2,Ceg1 and Ceg2 mean these parasitic capacities.

NOTE4:
The measurements shown in this document are given only as sample characteristics.
Moreover, these sample parameters are not guaranteed for when the device is used in the mass production of equipment, since the high-frequency (AC) characteristics of these devices will be affected by the external components which the customer uses, by the design of the circuits and by various other conditions. It is the responsibility of the customer to check the characteristics of a design. Toshiba assumes no responsibility for the integrity of customer circuit designs or applications.