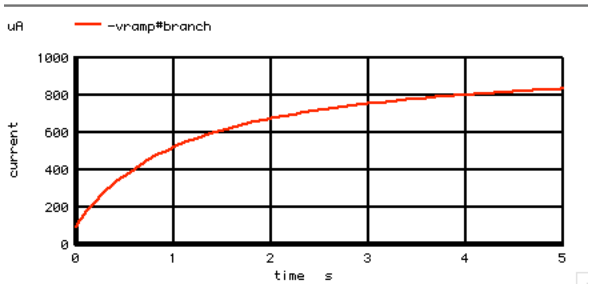
==========PINCH_RESISTOR==========

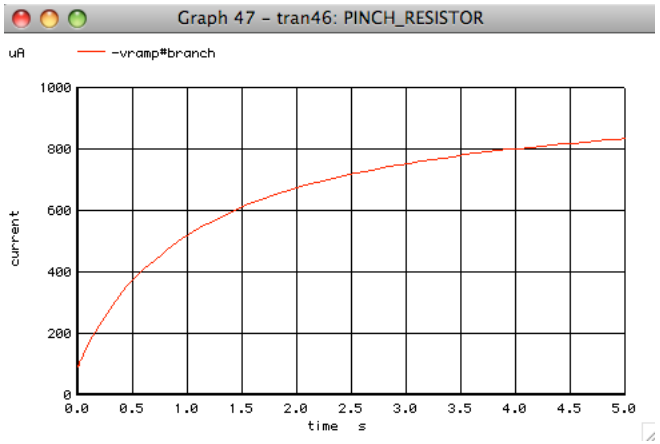
SOMETIMES MODELING PINCH RESISTORS IS IMPORTANT.



PINCH_RESISTOR

```
*
*                XRpinch
*     Vtest    _______
*        _____|_/\  /\  /\_
*      _|__      \/  \/  _|_
*     /_   \       :      ///
*    //\   \       :
*    \   \_//      :        Rset
*     \____/       :./\  /\  /\_|
*       _|_            \/  \/  _|_
*      ///     VRset         ///
*    Vramp
*                    Attach Pin 2 to highest voltage
*
*
*          ____________________________________________________
*         /                                   Nepi              /
*        /  ___________ /...................../_______________  /
*       / / _________ /                     /           _____/  /
*      / / /____ 1 /   /         2          /     /____ 3 / /  /
*     / / //___/| /   /                     /    //___/| / /  /
*    / / / |___|//   /                     /    / |___|// /  /
*   _/_/_/_____/___/_____________________/_____/_____/_/__/___
*  | | | p+imp |   |        n+imp         |     | p+imp | |  |
*  | \ \_____/    \_____________________/ base  \_____/ /   |
*  |  \_____________________________________________/       | Psub
*  |  _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ |
*  |/   N BURIED LAYER                                     \|
*   \ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ /
*          P-Substrate
*
Vramp        Vtest   0    PWL(   0     0.1  5  5.0)
XRpinch      Vtest   0    VRset  Rpinch
Rset         VRset   0    1k
.tran        100m    5     0     100m
.control
run
plot        -vramp#branch
dump
.endc
.SUBCKT      Rpinch  INP   INN  VRS
Isen         VRS     0     -1u
Bpinc        INP     INN   I = .000001*(v(INP) - v(INN))/(v(VRS)*(1+1*(v(INP) - v(INN))))
.ENDS        Rpinch
*                          .SUBCKT  Rpinch   INP   INN  VRS
*  |INP|_______          |VRS|
*  |___|       |_|_      |___|
*            _ /   \      _|_
*           |Bpinc|     /   \        ==>    |INP|_|_/\  /\  /\_|INN|
*           |     |     \/_\/                |___|     \/  \/    |___|
*           |  \___/     /\_/\                        :
*           |     |      \___/Isen                  |VRS|
*           |     |       _|_                       |___|
*  |INN|__|____|        ///
```

```
*  |___|
*
.end
```



***#1==========WinSpiceVersion==========**

```
PINCH_RESISTOR
*
*                XRpinch
*     Vtest    ________
*        _____|_/\  /\  /\_
*      _|__      \/  \/  _|_
*     /_  \       :      ///
*    //\   \      :
*    \   \_//     :       Rset
*     \____/      :./\  /\  /\_
*      ___|            \/  \/  _|_
*      ///     VRset         ///
*     Vramp


Vramp        Vtest  0    PWL(   0     0.1  5  5.0)
XRpinch  Vtest  0    VRset  Rpinch
Rset     VRset  0    1k
.tran    100m   5     0     100m

.control
run
plot  -vramp#branch
dump
.endc

*                                .SUBCKT  Rpinch   INP   INN  VRS
*  |INP|_______        |VRS|
*  |___|       |_ /\_|_  |___|
*            _ /  \      _|_     ==>    |INP|_|_/\  /\  /\_|INN|
*           |Bpinc|     /  \             |___|     \/  \/   |___|
*           |_ \___/     \/\/                          :
*            |  \___/    /\_/\                        |VRS|
*            |    |      \___/Isen                    |___|
*            |____|       ___|
*  |INN|__|____|         ///
*  |___|
*
```

```
.SUBCKT  Rpinch   INP   INN  VRS
Isen     VRS      0     -1u
Bpinc    INP   INN   I = .000001*(v(INP) - v(INN))/(v(VRS)*(1+1*(v(INP) - v(INN))))
.ENDS    Rpinch

*
*      Attach Pin 2 to highest voltage
*
*          ________________________________________________________
*         /               _____________________      Nepi         /
*        /  ____________ /..................../_______________   /
*       / / ________    /                    /     ________  /  /
*      / / /____ 1 /   /         2          /     /____ 3 / /  /
*     / / //___/| /   /                    /     //___/| / /  /
*    / / / |___|//   /                    /     / |___|// /  /
*  _/_/_/_______/___/____________________/_____/_______/_/__/____
*   | | | p+imp |   |       n+imp        |     | p+imp | |   |
*   |  \ \_____/     \__________________/ base  \_____/ /    |
*   |   \__________________________________________________/     |  Psub
*   |  _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _  _ _ _ _ _ _ _\|
*   |/   N BURIED LAYER                                        \|
*    \ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ /
*          P-Substrate
*


.end
```