Converting TOM2 Libraries to TOM1

TriQuint is utilizing the TOM2 (TriQuint's Own Model, version 2) for all new FET models. TOM2 will be available in many popular simulators in the coming months. PSPICE(TM) for Windows (Microsim, Inc.) will support TOM2 in version 7.1 due in April 1996. Compact Software's SuperSPICETM currently supports TOM2. It will take a while before some other simulators such as HP MDS@, HP-EESOF Libra@ and HSPICE (Meta Software) will support TOM2. For you who use these simulators, TOM2 libraries can be easily converted to TOM1 in the interim.

To convert TOM2 libraries to TOM1 perform the following in an ASCII editor. Be sure to save the changes as an ASCII (DOS text) file to avoid leaving word processor formating information in the file.

1. Delete any references to the following parameters:
    > NG
    > ND
    > ALPHATCE
    > GAMMATC
    > CGSTCE
    > CGDTCE
    > BTRK
    > DVT
    > DVTT

2. For PSPICE, change the reference of "level = 5" (or "level = -1" in some pre-release libraries) to "level = 3"

3. If the simulator produces a "domain error" when simulating at higher temperatures, try decreasing VMAX in steps of 100 mV.

Using this conversion, TOM1 will predict Ids well over much of the Vds range. The greatest deviations will occur at the knee voltage (Vds from 0.5 to 1 .O V).

TOM2 offers several improvements over TOM1 . Ids in the knee region is predicted more accurately. Subthreshold current (Ids when Vgs < Vp) is predicted. Temperture coefficients for several parameters and capacitances are added. Of course, the utility of these improvements depends on your circuit application. Most small signal circuits are adequately modeled using **TOM1 .** The greatest utility is for power amplifiers and switches.
For more information contact your TriQuint technical contact.