Agilent Technologies

Advanced Design System 2002

Vendor Component Libraries
Microwave Transistor Library

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Contents

Chapter 1: Microwave Transistor Library

The Microwave Transistor Library contains these nonlinear models:

Note   The library itself is a binary file named *MicrowaveTransistorLibrary.library* which can be found in *$HPEESOF_DIR/ComponentLibs/models*.

Chapter 2: Chip BJTs

The Chip BJTs consist of nonlinear models representing 92 parts from
5 manufacturers. The BJTs available for selection from the Schematic window are:

The library components are listed in the following sections. The tables are organized
by manufacturer library group and the individual components provided in each group
are listed by component name along with relevant physical and electrical
characteristics.

The tabulated Physical Specifications include:

Polarity: NPN or PNP

Maximum Electrical Specifications include:

Pdiss: Maximum dissipated power, mW

Vce: Maximum collector-emitter voltage, V

Ic: Maximum collector current, mA

Typical Electrical Specifications include:

Vce: Typical collector operating voltage, V

Ic: Typical collector operating current, mA

Hfe: DC current gain at typical operating bias

Ft: Frequency at which Hfe is 3 dB below maximum value, GHz

Agilent Technologies Chip BJTs

For modeling specifications, see "Chip BJTs" on page 2-1.

The Agilent Technologies Chip BJTs include 18 components, representing individual parts. The naming convention for these components is *cb_hp_<part number>_<model identifier>_<extraction date>*.

Table 2-1. Agilent Technologies Chip BJTs

Component Name	Description
cb_hp_AT41400_19900404	OBSOLETE AT41400 Package:DIE Model:eebjt1 NPN Pdiss(max)=500, Ic(max)=60, Vce(max)=12, Ic(typical)=25, Vce(typical)=8, Ft=9, Hfe=150
cb_hp_AT42000_19920721	AT42000: Chip NPN Pdiss=600mW, Vce(Max)=12V, Ic(Max)=80mA, Vce(typical)=8V, Ic(Typical)=35mA, Hfe=150, Ft=10GHz
cb_hp_AT60200_19900409	OBSOLETE AT60200 Package:DIE Model:eebjt1 NPN Pdiss(max)=160, Ic(max)=16, Vce(max)=12, Ic(typical)=5, Vce(typical)=8, Ft=9, Hfe=150
cb_hp_AT41400_19920721	OBSOLETE AT41400: Chip, NPN Pdiss=500mW, Vce(Max)=12V, Ic(Max)=60mA, Vce(typical)=8V, Ic(Typical)=10mA, Hfe=150, Ft=10GHz
cb_hp_AT00500_19910101	OBSOLETE AT00500 Package:DIE Model:bjt_gp NPN MDS b.07 library extraction
cb_hp_AT42000_19921101	die data n/a
cb_hp_AT41400_19921101	OBSOLETE die data n/a
cb_hp_AT60100_19900406	OBSOLETE AT60100 Package:DIE Model:eebjt1 NPN Pdiss(max)=80, Ic(max)=8, Vce(max)=12, Ic(typical)=3, Vce(typical)=8, Ft=9, Hfe=150
cb_hp_AT42000_19910101	AT42000 Package:DIE Model:bjt_gp NPN MDS b.07 library extraction
cb_hp_AT41400_19910101	OBSOLETE AT41400 Package:DIE Model:bjt_gp NPN MDS b.07 library extraction
cb_hp_AT01600_19900404	OBSOLETE AT01600 Package:DIE Model:eebjt1 NPN Pdiss(max)=1000, Ic(max)=150, Vce(max)=12, Ic(typical)=35, Vce(typical)=8, Ft=8, Hfe=150
cb_hp_AT21400_19900404	OBSOLETE AT21400 Package:DIE Model:eebjt1 NPN Pdiss(max)=250, Ic(max)=28, Vce(max)=10, Ic(typical)=14, Vce(typical)=8, Ft=10, Hfe=100
cb_hp_AT60500_19921101	OBSOLETE die data n/a
cb_hp_AT60500_19900411	OBSOLETE AT60500 Package:DIE Model:eebjt1 NPN Pdiss(max)=400, Ic(max)=40, Vce(max)=12, Ic(typical)=10, Vce(typical)=8, Ft=9, Hfe=150
cb_hp_AT01600_19921101	OBSOLETE die data n/a
cb_hp_AT00500_19900404	OBSOLETE AT00500 Package:DIE Model:eebjt1 NPN Pdiss(max)=500, Ic(max)=50, Vce(max)=12, Ic(typical)=20, Vce(typical)=8, Ft=9, Hfe=150
cb_hp_AT60500_19910101	OBSOLETE AT60500 Package:DIE Model:bjt_gp NPN MDS b.07 library extraction

Table 2-1. Agilent Technologies Chip BJTs (continued)

Component Name	Description
cb_hp_AT00500_19921101	OBSOLETE die data n/a
cb_hp_AT01600_19910101	OBSOLETE AT01600 Package:DIE Model:bjt_gp NPN MDS b.07 library extraction

Bipolarics Chip BJTs

For modeling specifications, see "Chip BJTs" on page 2-1.

The Bipolarics Chip BJTs include a single component installed in the library group. The naming convention for the component is *cb_bit_<part number>_<model identifier>_<extraction date>*.

Table 2-2. Bipolarics Chip BJTs

Component Name	Description
cb_bit_B20V1320d00_19931130	B20V1320-00 Package:DIE Model:eebjt2 NPN Pdiss(max)=na, Ic(max)=na, Vce(max)=na, Ic(typical)=na, Vce(typical)=na, Ft=na, Hfe=na

Motorola Chip BJTs

For modeling specifications, see "Chip BJTs" on page 2-1.

The Motorola Chip BJTs include 12 components, representing individual parts. The naming convention for these components is *cb_mot_<part number>_<model identifier>_<extraction date>*.

Table 2-3. Motorola Chip BJTs

Component Name	Description
cb_mot_MRFC9331_19931129	MRFC9331 Package:DIE Model:eebjt2 NPN Pdiss(max)=50, Ic(max)=2, Vce(max)=8, Ic(typical)=1, Vce(typical)=1, Ft=5, Hfe=80
cb_mot_MRFC572_19921101	MRFC572 Package:DIE Model:NPN
cb_mot_MRFC521_19921101	MRFC521 Package:DIE Model:bjt_gp PNP
cb_mot_MRFC901_19921101	MRFC901 Package:DIE Model:NPN
cb_mot_MRFC941_19921101	MRFC941 Package:DIE Model:eebjt1 NPN
cb_mot_MRFC941_19900412	MRFC941 Package:DIE Model:eebjt1 NPN Pdiss(max)=400, Ic(max)=50, Vce(max)=10, Ic(typical)=15, Vce(typical)=6, Ft=8, Hfe=50-200
cb_mot_MRFC911_19931130	MRFC911 Package:DIE Model:eebjt2 NPN Pdiss(max)=400, Ic(max)=40, Vce(max)=12, Ic(typical)=30, Vce(typical)=10, Ft=5, Hfe=30-200
cb_mot_MRFC571_19931130	MRFC571 Package:DIE Model:eebjt2 NPN Pdiss(max)=1500, Ic(max)=70, Vce(max)=10, Ic(typical)=50, Vce(typical)=8, Ft=8, Hfe=50-300
cb_mot_MRFC911_19921101	MRFC911 Package:DIE Model:bjt_gp NPN MDS b.07 library extraction
cb_mot_MRFC951_19921101	MRFC951 Package:DIE Model:eebjt1 NPN
cb_mot_MRFC951_19900411	MRFC951 Package:DIE Model:eebjt1 NPN Pdiss(max)=1000, Ic(max)=100, Vce(max)=10, Ic(typical)=30, Vce(typical)=8, Ft=8, Hfe=50-200
cb_mot_BFRC90_19931130	BFRC90 Package:DIE Model:eebjt2 NPN Pdiss(max)=180, Ic(max)=30, Vce(max)=15, Ic(typical)=14, Vce(typical)=10, Ft=5, Hfe=25-250

NEC Chip BJTs

For modeling specifications, see "Chip BJTs" on page 2-1.

The NEC Chip BJTs include 29 components, representing individual parts. The naming convention for these components is *cb_nec_<part number>_<model identifier>_<extraction date>*.

Table 2-4. NEC Chip BJTs

Component Name	Description
cb_nec_NE32700_19900413	NE32700 Package:DIE Model:eebjt1 NPN Pdiss(max)=300, Ic(max)=50, Vce(max)=12, Ic(typical)=15, Vce(typical)=5, Ft=3, Hfe=100
cb_nec_NE24300_19891121	NE24300 Package:DIE Model:eebjt1 NPN Pdiss(max)=2750, Ic(max)=110, Vce(max)=16, Ic(typical)=50, Vce(typical)=8, Ft=10, Hfe=20-200
cb_nec_NE68100_19900403	NE68100 Package:DIE Model:bjt_gp NPN MDS b.07 library extraction
cb_nec_NE46100_19950901	NE46100 Package:NE00 Type:NPN Vce(Max)=V, Ic(Max)=mA, Vce(typical)=V, Ic(Typical)=mA, Hfe=, Ft=Hz Valid within: Bias{Vce=5V to 12.5V, Ic=50mA to 100mA} Frequency{0.1GHz TO 4.0GHz}
cb_nec_NE57800_19900403	NE57800 Package:DIE Model:eebjt1 NPN Pdiss(max)=250, Ic(max)=30, Vce(max)=11, Ic(typical)=10, Vce(typical)=8, Ft=6, Hfe=100
cb_nec_NE02100_19911007	die, n/a
cb_nec_NE41600_19900403	NE41600 Package:DIE Model:eebjt1 NPN Pdiss(max)=1800, Ic(max)=100, Vce(max)=18, Ic(typical)=50, Vce(typical)=10, Ft=3.5, Hfe=100
cb_nec_NE68100_19921101	embeded die, n/a
cb_nec_NE24600_19900503	NE24600 Package:DIE Model:eebjt1 NPN Pdiss(max)=5000, Ic(max)=250, Vce(max)=20, Ic(typical)=100, Vce(typical)=15, Ft=4.5, Hfe=80
cb_nec_NE68000_19900403	NE68000 Package:DIE Model:eebjt1 NPN Pdiss(max)=200, Ic(max)=35, Vce(max)=10, Ic(typical)=10, Vce(typical)=6, Ft=10, Hfe=100
cb_nec_NE64400_19931130	NE64400 Package:DIE Model:eebjt2 NPN Pdiss(max)=260, Ic(max)=3.5, Vce(max)=10, Ic(typical)=5, Vce(typical)=6, Ft=10, Hfe=100
cb_nec_NE85600_19900404	NE85600 Package:DIE Model:eebjt1 NPN Pdiss(max)=700, Ic(max)=100, Vce(max)=12, Ic(typical)=20, Vce(typical)=10, Ft=7, Hfe=120
cb_nec_NE68800_19960601	NE68800 Package:NE00 Type:NPN Vce(Max)=V, Ic(Max)=mA, Vce(typical)=V, Ic(Typical)=mA, Hfe=, Ft=Hz Valid within: Bias{Vce=1V to 3V, Ic=1mA to 10mA} Frequency{0.1GHZ to 10GHZ}
cb_nec_NE88900_19931124	NE88900 Package:DIE Model:eebjt2 PNP Pdiss(max)=300, Ic(max)=-50, Vce(max)=-12, Ic(typical)=-15, Vce(typical)=-5, Ft=4, Hfe=90
cb_nec_NE41600_19921101	die, n/a
cb_nec_NE68000_19921101	embeded die, n/a
cb_nec_NE21900_19900503	NE21900 Package:DIE Model:eebjt1 NPN Pdiss(max)=700, Ic(max)=80, Vce(max)=10, Ic(typical)=20, Vce(typical)=8, Ft=8, Hfe=100

Table 2-4. NEC Chip BJTs (continued)

Component Name	Description
cb_nec_NE21900_19900307	NE21900 Package:DIE Model:bjt_gp NPN MDS b.07 library extraction
cb_nec_NE73400_19900404	NE73400 Package:DIE Model:eebjt1 NPN Pdiss(max)=300, Ic(max)=50, Vce(max)=14, Ic(typical)=10, Vce(typical)=10, Ft=1.5, Hfe=100
cb_nec_NE64700_19900403	NE64700 Package:DIE Model:eebjt1 NPN Pdiss(max)=180, Ic(max)=20, Vce(max)=9, Ic(typical)=10, Vce(typical)=8, Ft=11, Hfe=100
cb_nec_NE85600_19921101	embeded die, n/a
cb_nec_NE64800_19900413	NE64800 Package:DIE Model:eebjt1 NPN Pdiss(max)=360, Ic(max)=40, Vce(max)=9, Ic(typical)=20, Vce(typical)=8, Ft=11, Hfe=100
cb_nec_NE68100_19960501	NE68100 Package:NE00 Type:NPN Vce(Max)=V, Ic(Max)=mA, Vce(typical)=V, Ic(Typical)=mA, Hfe=, Ft=Hz Valid within: Bias{VCE=8V, IC=7mA,20mA; VCE=2.5V, IC=0.3/1/3mA} Frequency{1.5GHz TO 10GHz}
cb_nec_NE02100_19900412	NE02100 Package:DIE Model:eebjt1 NPN Pdiss(max)=700, Ic(max)=70, Vce(max)=12, Ic(typical)=20, Vce(typical)=10, Ft=4.5, Hfe=70
cb_nec_NE73400_19921101	embeded die, n/a
cb_nec_NE68300_19921101	embeded die, n/a
cb_nec_NE68000_19960501	NE68000 Package:NE00 Type:NPN Vce(Max)=V, Ic(Max)=mA, Vce(typical)=V, Ic(Typical)=mA, Hfe=, Ft=Hz Valid within: Bias{Vce=1V to 6V, Ic=0.25mA to 20mA} Frequency{0.1GHZ TO 20.1GHZ}
cb_nec_NE85600_19960501	NE85600 Package:NE00 Type:NPN Vce(Max)=V, Ic(Max)=mA, Vce(typical)=V, Ic(Typical)=mA, Hfe=, Ft=Hz Valid within: Bias{Vce=1V to 10V, Ic=0.25mA to 40mA} Frequency{0.1GHz to 7.0GHz}
cb_nec_NE64500_19891214	NE64500 Package:DIE Model:eebjt1 NPN Pdiss(max)=400, Ic(max)=65, Vce(max)=12, Ic(typical)=20, Vce(typical)=8, Ft=8.5, Hfe=100

Siemens Chip BJTs

For modeling specifications, see "Chip BJTs" on page 2-1.

The Siemens Chip BJTs include 30 components, representing individual parts. The naming convention for these components is *cb_sms_<part number>_<model identifier>_<extraction date>*.

Table 2-5. Siemens Chip BJTs

Component Name	Description
cb_sms_T301_19960901	rf-bjt die: SPICE Lib. V1.00 09.01.1996 valid under 6Ghz
cb_sms_T341_19960901	rf-bjt die: SPICE Lib. V1.00 09.01.1996 valid under 6Ghz
cb_sms_T503_19960901	rf-bjt die: SPICE Lib. V1.00 09.01.1996 valid under 6Ghz
cb_sms_T236_19960901	rf-bjt die: SPICE Lib. V1.00 09.01.1996 valid under 6Ghz
cb_sms_T309_19960901	rf-bjt die: SPICE Lib. V1.00 09.01.1996 valid under 6Ghz
cb_sms_T349_19960901	rf-bjt die: SPICE Lib. V1.00 09.01.1996 valid under 6Ghz
cb_sms_T296_19960901	rf-bjt die: SPICE Lib. V1.00 09.01.1996 valid under 6Ghz
cb_sms_T389_19960901	rf-bjt die: SPICE Lib. V1.00 09.01.1996 valid under 6Ghz
cb_sms_T351_19921101	T351 die ( )
cb_sms_T302_19960901	rf-bjt die: SPICE Lib. V1.00 09.01.1996 valid under 6Ghz
cb_sms_T395_19921101	T395 die ( )
cb_sms_T359_19921101	T359 die ( )
cb_sms_T504_19960901	rf-bjt die: SPICE Lib. V1.00 09.01.1996 valid under 6Ghz
cb_sms_T134_19921101	T134 die ( )
cb_sms_T251_19921101	T251 die ( )
cb_sms_T501_19960901	rf-bjt die: SPICE Lib. V1.00 09.01.1996 valid under 6Ghz
cb_sms_T351_19960901	rf-bjt die: SPICE Lib. V1.00 09.01.1996 valid under 6Ghz
cb_sms_T395_19960901	rf-bjt die: SPICE Lib. V1.00 09.01.1996 valid under 6Ghz
cb_sms_T359_19960901	rf-bjt die: SPICE Lib. V1.00 09.01.1996 valid under 6Ghz
cb_sms_T301_19921101	T301 die ( )
cb_sms_T341_19921101	T341 die ( )
cb_sms_T236_19921101	T236 die ( )
cb_sms_T122_19960901	rf-bjt die: SPICE Lib. V1.00 09.01.1996 valid under 6Ghz
cb_sms_T349_19921101	T349 die ( )
cb_sms_T502_19960901	rf-bjt die: SPICE Lib. V1.00 09.01.1996 valid under 6Ghz
cb_sms_T251_19960901	rf-bjt die: SPICE Lib. V1.00 09.01.1996 valid under 6Ghz

Table 2-5. Siemens Chip BJTs (continued)

Component Name	Description
cb_sms_T239_19960901	rf-bjt die: SPICE Lib. V1.00 09.01.1996 valid under 6Ghz
cb_sms_T259_19960901	rf-bjt die: SPICE Lib. V1.00 09.01.1996 valid under 6Ghz
cb_sms_T396_19960901	rf-bjt die: SPICE Lib. V1.00 09.01.1996 valid under 6Ghz
cb_sms_T89_19960901	rf-bjt die: SPICE Lib. V1.00 09.01.1996 valid under 6Ghz

Chapter 3: Chip GaAs FETs

The Chip GaAs FETs consist of nonlinear models representing 152 parts from 13 manufacturers. The FETs available for selection from the Schematic window are:

The library components are listed in the following sections. The tables are organized by manufacturer library group, and the individual components provided in each group are listed by component name along with relevant physical and electrical characteristics.

The tabulated Physical Specifications include:

Gw: Gate width, microns

Gl: Gate length, microns

Maximum Electrical Specifications include:

Pdiss: Maximum dissipated power, mW

Vbr: Breakdown voltage, V

Typical Electrical Specifications include:

Vds: Typical drain-source operating voltage, V

Idss: Saturation current, mA, simulated using the model at typical Vds

Vt: Threshold gate voltage, V, simulated using the model at typical Vds

Model Validation data has been provided as a simple large-signal figure of merit for the model. The validation was based on simulations of the model and measurements of the associated device, conducted at 1 GHz. Validation data includes:

Vds: Drain-source operating voltage, V

Ids: Operating drain current, mA

P1dB, Sim: Output power for 1 dB compression, dBm, simulated using the model at validation Vds, Ids. Values listed as na denote that the associated P1dB simulation was not performed.

P1dB, Error: Absolute error between P1dB, Sim and P1dB measured, at the validation Vds, Ids. Values listed as na denote that the associated P1dB measurement is not available.

Agilent Technologies Chip FETs

For modeling specifications, see "Chip GaAs FETs" on page 3-1.

The Agilent Technologies Chip GaAs FETs include 12 components, representing individual parts. The naming convention for these components is *cf_hpa_<part number>_<model identifier>_<extraction date>*.

Table 3-1. Agilent Technologies Chip GaAs FETs

Component Name	Description
cf_hp_ATF10100_19911201	OBSOLETE ATF10100 Package:DIE Model:curtice N-channel MDS b.07 library extraction
cf_hp_ATF45100_19930609	OBSOLETE ATF45100 Package:DIE Model:eefet3 N-channel Gate Width=2500, Gate Length=0.5, Pdiss(max)=4000, Vds(typical)=9, Idss=645.97, Vt=-5.6
cf_hp_ATF25100_19911201	OBSOLETE ATF25100 Package:DIE Model:curtice N-channel MDS b.07 library extraction
cf_hp_ATF44100_19930730	OBSOLETE ATF44100 Package:DIE Model:eefet3 N-channel Gate Width=5000, Gate Length=0.5, Pdiss(max)=8300, Vds(typical)=9, Idss=1093.28, Vt=-4.5
cf_hp_ATF13100_19930609	OBSOLETE ATF13100 Package:DIE Model:eefet3 N-channel Gate Width=250, Gate Length=0.3, Pdiss(max)=225, Vds(typical)=4, Idss=56.48, Vt=-1.6
cf_hp_ATF26100_19930609	OBSOLETE ATF26100 Package:DIE Model:eefet3 N-channel Gate Width=250, Gate Length=0.3, Pdiss(max)=275, Vds(typical)=5, Idss=72.52, Vt=-2.7
cf_hp_ATF46100_19940317	OBSOLETE ATF46100 Package:DIE Model:eefet3 N-channel Gate Width=1250, Gate Length=0.5, Pdiss(max)=2200, Vds(typical)=9, Idss=356.44, Vt=-5.1
cf_hp_ATF13100_19911201	ATF13100 Package:DIE Model:curtice N-channel MDS b.07 library extraction
cf_hp_ATF26100_19911201	OBSOLETE ATF26100 Package:DIE Model:curtice N-channel MDS b.07 library extraction
cf_hp_ATF10100_19930609	OBSOLETE ATF10100 Package:DIE Model:eefet3 N-channel Gate Width=250, Gate Length=0.3, Pdiss(max)=430, Vds(typical)=4, Idss=62.4, Vt=-1
cf_hp_ATF21100_19930609	OBSOLETE ATF21100 Package:DIE Model:eefet3 N-channel Gate Width=750, Gate Length=0.3, Pdiss(max)=600, Vds(typical)=5, Idss=125.15, Vt=-1.4
cf_hp_ATF25100_19930609	OBSOLETE ATF25100 Package:DIE Model:eefet3 N-channel Gate Width=500, Gate Length=0.3, Pdiss(max)=450, Vds(typical)=5, Idss=53.03, Vt=-2.1

Celeritek Chip GaAs FETs

The Celeritek Chip GaAs FETs include 10 components, representing individual parts. The naming convention for these components is *cf_ctk_<part number>_<model identifier>_<extraction date>*.

Table 3-2. Celeritek Chip GaAs FETs

Component Name	Description
cf_ctk_CF00302_19930609	CF00302 Package:DIE Model:eefet3 N-channel Gate Width=600, Gate Length=0.5, Pdiss(max)=1600, Vds(typical)=6, Idss=183.43, Vt=-1.2
cf_ctk_CF00101_19930609	CF00101 Package:DIE Model:eefet3 N-channel Gate Width=300, Gate Length=0.5, Pdiss(max)=700, Vds(typical)=5.5, Idss=93.63, Vt=-1.8
cf_ctk_CF00501_19930730	CF00501 Package:DIE Model:eefet3 N-channel Gate Width=1200, Gate Length=0.5, Pdiss(max)=3000, Vds(typical)=6, Idss=226.97, Vt=-1.1
cf_ctk_CF00102_19930609	CF00102 Package:DIE Model:eefet3 N-channel Gate Width=300, Gate Length=0.5, Pdiss(max)=700, Vds(typical)=5.5, Idss=71.3, Vt=-0.9
cf_ctk_CF00401_19930609	CF00401 Package:DIE Model:eefet3 N-channel Gate Width=150, Gate Length=0.5, Pdiss(max)=400, Vds(typical)=5.5, Idss=34.73, Vt=-1.7
cf_ctk_CF00402_19930609	CF00402 Package:DIE Model:eefet3 N-channel Gate Width=150, Gate Length=0.5, Pdiss(max)=400, Vds(typical)=5.5, Idss=48.48, Vt=-1.5
cf_ctk_CF00101_19911201	CF00101 Package:DIE Model:curtice N-channel MDS b.07 library extraction
cf_ctk_CF00102_19911201	CF00102 Package:DIE Model:curtice N-channel MDS b.07 library extraction
cf_ctk_CF01501_19930730	CF01501 Package:DIE Model:eefet3 N-channel Gate Width=1200, Gate Length=0.5, Pdiss(max)=3000, Vds(typical)=6, Idss=324, Vt=-1.7
cf_ctk_CF00301_19930609	CF00301 Package:DIE Model:eefet3 N-channel Gate Width=600, Gate Length=0.5, Pdiss(max)=1400, Vds(typical)=6, Idss=159.08, Vt=-1.7

Fujitsu Chip GaAs FETs

The Fujitsu Chip GaAs FETs include 25 components, representing individual parts. The naming convention for these components is *cf_fuj_<part number>_<model identifier>_<extraction date>*.

Table 3-3. Fujitsu Chip GaAs FETs

Component Name	Description
cf_fuj_FLK052XV_19911201	FLK052XV Package:DIE Model:curtice N-channel MDS b.07 library extraction
cf_fuj_FLK202XV_19930730	FLK202XV Package:DIE Model:eefet3 N-channel Gate Width=4800, Gate Length=0.8, Pdiss(max)=12500, Vds(typical)=10, Idss=953.82, Vt=-2.7
cf_fuj_FLR016XV_19920211	FLR016XV Package:DIE Model:curtice N-channel MDS b.07 library extraction
cf_fuj_FLK102XV_19911201	FLK102XV Package:DIE Model:curtice N-channel MDS b.07 library extraction
cf_fuj_FLR024XV_19921218	FLR024XV Package:DIE Model:eefet3 N-channel Gate Width=600, Gate Length=0.8, Pdiss(max)=1880, Vds(typical)=7.5, Idss=114.49, Vt=-2.7
cf_fuj_FLK052XV_19930730	FLK052XV Package:DIE Model:eefet3 N-channel Gate Width=1200, Gate Length=0.8, Pdiss(max)=3750, Vds(typical)=10, Idss=252.54, Vt=-3
cf_fuj_FLR016XP_19930730	FLR016XP Package:DIE Model:eefet3 N-channel Gate Width=300, Gate Length=0.25, Pdiss(max)=1150, Vds(typical)=8, Idss=57.01, Vt=-2.9
cf_fuj_FLK022XP_19921218	FLK022XP Package:DIE Model:eefet3 N-channel Gate Width=600, Gate Length=0.8, Pdiss(max)=1880, Vds(typical)=10, Idss=129.64, Vt=-3.4
cf_fuj_FLK102XV_19930730	FLK102XV Package:DIE Model:eefet3 N-channel Gate Width=2400, Gate Length=0.8, Pdiss(max)=7500, Vds(typical)=10, Idss=452.77, Vt=-2.3
cf_fuj_FLR016XV_19921218	FLR016XV Package:DIE Model:eefet3 N-channel Gate Width=300, Gate Length=0.25, Pdiss(max)=1150, Vds(typical)=8, Idss=59.14, Vt=-1.9
cf_fuj_FLR056XV_19921219	FLR056XV Package:DIE Model:eefet3 N-channel Gate Width=1200, Gate Length=0.25, Pdiss(max)=3750, Vds(typical)=8, Idss=244.07, Vt=-3
cf_fuj_FLK012XP_19930730	FLK012XP Package:DIE Model:eefet3 N-channel Gate Width=360, Gate Length=0.8, Pdiss(max)=1150, Vds(typical)=10, Idss=73.41, Vt=-2.6
cf_fuj_FLK052XP_19930730	FLK052XP Package:DIE Model:eefet3 N-channel Gate Width=1200, Gate Length=0.8, Pdiss(max)=3750, Vds(typical)=10, Idss=200.67, Vt=-1.9
cf_fuj_FLR026XV_19930730	FLR026XV Package:DIE Model:eefet3 N-channel Gate Width=600, Gate Length=0.25, Pdiss(max)=1880, Vds(typical)=8, Idss=247.69, Vt=-2.9
cf_fuj_FLR106XV_19921219	FLR106XV Package:DIE Model:eefet3 N-channel Gate Width=2400, Gate Length=0.25, Pdiss(max)=7500, Vds(typical)=8, Idss=530.55, Vt=-3.7
cf_fuj_FSX51X_19930730	FSX51X Package:DIE Model:eefet3 N-channel Gate Width=300, Gate Length=1, Pdiss(max)=1000, Vds(typical)=8, Idss=65.57, Vt=-2.4
cf_fuj_FLC081XP_19930730	FLC081XP Package:DIE Model:eefet3 N-channel Gate Width=375, Gate Length=na, Pdiss(max)=4160, Vds(typical)=10, Idss=303.47, Vt=-2
cf_fuj_FSC10X_19921219	FSC10X Package:DIE Model:eefet3 N-channel Gate Width=400, Gate Length=0.5, Pdiss(max)=1250, Vds(typical)=3, Idss=63.21, Vt=-1.4

Table 3-3. Fujitsu Chip GaAs FETs (continued)

Component Name	Description
cf_fuj_FLK102XP_19930730	FLK102XP Package:DIE Model:eefet3 N-channel Gate Width=2400, Gate Length=0.8, Pdiss(max)=7500, Vds(typical)=10, Idss=476.79, Vt=-2.5
cf_fuj_FLR054XV_19921219	FLR054XV Package:DIE Model:eefet3 N-channel Gate Width=1200, Gate Length=0.8, Pdiss(max)=3750, Vds(typical)=7.5, Idss=264.56, Vt=-3.2
cf_fuj_FLC151XP_19930730	FLC151XP Package:DIE Model:eefet3 N-channel Gate Width=750, Gate Length=na, Pdiss(max)=8300, Vds(typical)=10, Idss=645.29, Vt=-2.2
cf_fuj_FLK022XV_19930730	FLK022XV Package:DIE Model:eefet3 N-channel Gate Width=600, Gate Length=0.8, Pdiss(max)=1880, Vds(typical)=10, Idss=111.45, Vt=-2.3
cf_fuj_FLR026XP_19930730	FLR026XP Package:DIE Model:eefet3 N-channel Gate Width=600, Gate Length=0.25, Pdiss(max)=1880, Vds(typical)=8, Idss=142.69, Vt=-4.2
cf_fuj_FSX52X_19930730	FSX52X Package:DIE Model:eefet3 N-channel Gate Width=600, Gate Length=1, Pdiss(max)=1500, Vds(typical)=8, Idss=166.97, Vt=-3.7
cf_fuj_FLR014XP_19921218	FLR014XP Package:DIE Model:eefet3 N-channel Gate Width=360, Gate Length=0.8, Pdiss(max)=1150, Vds(typical)=8, Idss=82.66, Vt=-3.4

Harris Chip GaAs FETs

For modeling specifications, see "Chip GaAs FETs" on page 3-1.

The Harris Chip GaAs FETs include 17 components, representing individual parts. The naming convention for these components is *cf_hm_<part number>_<model identifier>_<extraction date>*.

Table 3-4. Harris Chip GaAs FETs

Component Name	Description
cf_hm_HMF06100d200_19940325	HMF06100-200 Package:DIE Model:hpfet N-channel MDS b.07 library extraction
cf_hm_HMF0610200_19921221	HMF0610200 Package:DIE Model:eefet3 N-channel Gate Width=600, Gate Length=0.5, Pdiss(max)=1000, Vds(typical)=4, Idss=135.61, Vt=-3
cf_hm_HMF06300_19940325	HMF06300 Package:DIE Model:hpfet N-channel MDS b.07 library extraction
cf_hm_HMF0300_19921221	HMF0300 Package:DIE Model:eefet3 N-channel Gate Width=300, Gate Length=0.5, Pdiss(max)=1000, Vds(typical)=8, Idss=84.84, Vt=-3.8
cf_hm_HMF1200_19921221	HMF1200 Package:DIE Model:eefet3 N-channel Gate Width=1200, Gate Length=0.5, Pdiss(max)=4000, Vds(typical)=8, Idss=350.98, Vt=-4.9
cf_hm_HMF0600_19921221	HMF0600 Package:DIE Model:eefet3 N-channel Gate Width=600, Gate Length=0.5, Pdiss(max)=1400, Vds(typical)=8, Idss=175.83, Vt=-4.1
cf_hm_HMF03100d300_19940318	HMF03100-300 Package:DIE Model:hpfet N-channel MDS b.07 library extraction
cf_hm_HMF03300_19940318	HMF03300 Package:DIE Model:hpfet N-channel MDS b.07 library extraction
cf_hm_HMF1210_19921221	HMF1210 Package:DIE Model:eefet3 N-channel Gate Width=1200, Gate Length=0.5, Pdiss(max)=2800, Vds(typical)=6, Idss=282.42, Vt=-2.8
cf_hm_HMF03100d100_19940317	HMF03100-100 Package:DIE Model:hpfet N-channel MDS b.07 library extraction
cf_hm_HMF06100d100_19940318	HMF06100-100 Package:DIE Model:hpfet N-channel MDS b.07 library extraction
cf_hm_HMF0610100_19921221	HMF0610100 Package:DIE Model:eefet3 N-channel Gate Width=600, Gate Length=0.5, Pdiss(max)=1000, Vds(typical)=6, Idss=154.14, Vt=-3.1
cf_hm_HMF2402_19921221	HMF2402 Package:DIE Model:eefet3 N-channel Gate Width=2400, Gate Length=0.5, Pdiss(max)=8000, Vds(typical)=8, Idss=645.87, Vt=-3.4
cf_hm_HMF0330_19921221	HMF0330 Package:DIE Model:eefet3 N-channel Gate Width=300, Gate Length=0.5, Pdiss(max)=300, Vds(typical)=4, Idss=32.21, Vt=-1.7
cf_hm_HMF03300_19911201	HMF03300 Package:DIE Model:curtice N-channel MDS b.07 library extraction

Table 3-4. Harris Chip GaAs FETs (continued)

Component Name	Description
cf_hm_HMF03100_19921221	HMF03100 Package:DIE Model:eefet3 N-channel Gate Width=300, Gate Length=0.5, Pdiss(max)=800, Vds(typical)=6, Idss=86.85, Vt=-3.4
cf_hm_HMF03100d200_19940323	HMF03100-200 Package:DIE Model:hpfet N-channel MDS b.07 library extraction

Litton Chip GaAs FETs

For modeling specifications, see "Chip GaAs FETs" on page 3-1.

The Litton Chip GaAs FETs include 16 components, representing individual parts. The naming convention for these components is *cf_lit_<part number>_<model identifier>_<extraction date>*.

Table 3-5. Litton Chip GaAs FETs

Component Name	Description
cf_lit_LF2502_19930609	LF2502 Package:DIE Model:eefet3 N-channel Gate Width=250, Gate Length=0.5, Pdiss(max)=450, Vds(typical)=4, Idss=31.94, Vt=-1.3
cf_lit_LF2503_19930609	LF2503 Package:DIE Model:eefet3 N-channel Gate Width=280, Gate Length=0.5, Pdiss(max)=500, Vds(typical)=4, Idss=60.58, Vt=-2.4
cf_lit_LF0777_19930609	LF0777 Package:DIE Model:eefet3 N-channel Gate Width=280, Gate Length=0.3, Pdiss(max)=300, Vds(typical)=3.5, Idss=39.48, Vt=-1.3
cf_lit_LF3501_19930609	LF3501 Package:DIE Model:eefet3 N-channel Gate Width=500, Gate Length=0.8, Pdiss(max)=800, Vds(typical)=8, Idss=134.71, Vt=-3.2
cf_lit_LF1503A_19930609	LF1503A Package:DIE Model:eefet3 N-channel Gate Width=280, Gate Length=0.8, Pdiss(max)=300, Vds(typical)=4, Idss=76.72, Vt=-2.1
cf_lit_LF6836_19930609	LF6836 Package:DIE Model:eefet3 N-channel Gate Width=360, Gate Length=0.5, Pdiss(max)=800, Vds(typical)=5.5, Idss=115.51, Vt=-2.4
cf_lit_LF6828_19930609	LF6828 Package:DIE Model:eefet3 N-channel Gate Width=280, Gate Length=0.5, Pdiss(max)=800, Vds(typical)=5.5, Idss=80.01, Vt=-2.7
cf_lit_LF2501A_19930609	LF2501A Package:DIE Model:eefet3 N-channel Gate Width=500, Gate Length=0.5, Pdiss(max)=500, Vds(typical)=6, Idss=79.88, Vt=-1.8
cf_lit_LF6872_19930730	LF6872 Package:DIE Model:eefet3 N-channel Gate Width=720, Gate Length=0.5, Pdiss(max)=1500, Vds(typical)=5.5, Idss=258.77, Vt=-3.7
cf_lit_LF3501_19911201	LF3501 Package:DIE Model:curtice N-channel MDS b.07 library extraction
cf_lit_LF1503A_19911201	LF1503A Package:DIE Model:curtice N-channel MDS b.07 library extraction
cf_lit_LF0503A_19930609	LF0503A Package:DIE Model:eefet3 N-channel Gate Width=280, Gate Length=0.3, Pdiss(max)=300, Vds(typical)=4, Idss=46.24, Vt=-1.5
cf_lit_LF3830_19930730	LF3830 Package:DIE Model:eefet3 N-channel Gate Width=3000, Gate Length=0.5, Pdiss(max)=9000, Vds(typical)=9, Idss=795.4, Vt=-3.3
cf_lit_LF6836_19911201	LF6836 Package:DIE Model:curtice N-channel MDS b.07 library extraction
cf_lit_LF3814_19930730	LF3814 Package:DIE Model:eefet3 N-channel Gate Width=1400, Gate Length=0.5, Pdiss(max)=3000, Vds(typical)=7, Idss=346.53, Vt=-3.5
cf_lit_LF6828_19911201	LF6828 Package:DIE Model:curtice N-channel MDS b.07 library extraction

Microwave Technology Chip GaAs FETs

For modeling specifications, see "Chip GaAs FETs" on page 3-1.

The Microwave Technology Chip GaAs FETs include 15 components, representing individual parts. The naming convention for these components is *cf_mwt_<part number>_<model identifier>_<extraction date>*.

Table 3-6. Microwave Technology Chip GaAs FETs

Component Name	Description
cf_mwt_MWT7HP_19930730	MWT-7HP Package:DIE Model:eefet3 N-channel Gate Width=250, Gate Length=0.3, Pdiss(max)=600, Vds(typical)=4, Idss=77.55, Vt=-2
cf_mwt_MWT13HP_19930730	MWT-13HP Package:DIE Model:eefet3 N-channel Gate Width=1200, Gate Length=0.3, Pdiss(max)=3000, Vds(typical)=6, Idss=298.67, Vt=-2.6
cf_mwt_MWT2HP_19930730	MWT-2HP Package:DIE Model:eefet3 N-channel Gate Width=630, Gate Length=0.3, Pdiss(max)=1500, Vds(typical)=6, Idss=190.19, Vt=-2.9
cf_mwt_MWT3HP_19911201	MWT-3HP Package:DIE Model:curtice N-channel MDS b.07 library extraction
cf_mwt_MWT8HP_19930730	MWT-8HP Package:DIE Model:eefet3 N-channel Gate Width=1200, Gate Length=0.3, Pdiss(max)=3000, Vds(typical)=6, Idss=336.23, Vt=-3.1
cf_mwt_MWT3HP_19930730	MWT-3HP Package:DIE Model:eefet3 N-channel Gate Width=300, Gate Length=0.3, Pdiss(max)=750, Vds(typical)=6, Idss=99.45, Vt=-2.7
cf_mwt_MWT9LN_19930730	MWT-9LN Package:DIE Model:eefet3 N-channel Gate Width=750, Gate Length=0.3, Pdiss(max)=1750, Vds(typical)=6, Idss=130.68, Vt=-1.2
cf_mwt_MWT4LN_19930730	MWT-4LN Package:DIE Model:eefet3 N-channel Gate Width=180, Gate Length=0.3, Pdiss(max)=360, Vds(typical)=4.5, Idss=40.85, Vt=-1.7
cf_mwt_MWT6HP_19930730	MWT-6HP Package:DIE Model:eefet3 N-channel Gate Width=900, Gate Length=0.3, Pdiss(max)=2250, Vds(typical)=6, Idss=108.55, Vt=-2.8
cf_mwt_MWT7_19911201	MWT-7HP Package:DIE Model:curtice N-channel MDS b.07 library extraction
cf_mwt_MWT7LN_19930730	MWT-7LN Package:DIE Model:eefet3 N-channel Gate Width=250, Gate Length=0.3, Pdiss(max)=600, Vds(typical)=4, Idss=54.34, Vt=-6.3
cf_mwt_MWT9HP_19930730	MWT-9HP Package:DIE Model:eefet3 N-channel Gate Width=750, Gate Length=0.3, Pdiss(max)=1750, Vds(typical)=6, Idss=214.77, Vt=-3.4
cf_mwt_MWT4SN_19940325	MWT-4SN Package:DIE Model:hpfet N-channel MDS b.07 library extraction
cf_mwt_MWT1HG_19921215	MWT-1HG Package:DIE Model:eefet3 N-channel Gate Width=630, Gate Length=0.3, Pdiss(max)=1200, Vds(typical)=5, Idss=165.8, Vt=-2.2
cf_mwt_MWT5HG_19930802	MWT-5HG Package:DIE Model:eefet3 N-channel Gate Width=600, Gate Length=0.3, Pdiss(max)=750, Vds(typical)=6, Idss=70, Vt=-2.05

Mitsubishi Chip GaAs FETs

For modeling specifications, see "Chip GaAs FETs" on page 3-1.

The Mitsubishi Chip GaAs FETs include 15 components, representing individual parts. The naming convention for these components is *cf_mit_<part number>_<model identifier>_<extraction date>*.

Table 3-7. Mitsubishi Chip GaAs FETs

Component Name	Description
cf_mit_MGFC1403_19921217	MGFC1403 Package:DIE Model:eefet3 N-channel Gate Width=300, Gate Length=0.5, Pdiss(max)=500, Vds(typical)=3, Idss=46.29, Vt=-1.2
cf_mit_MGFC2407_19930609	MGFC2407 Package:DIE Model:eefet3 N-channel Gate Width=750, Gate Length=0.5, Pdiss(max)=1500, Vds(typical)=10, Idss=191.64, Vt=-3
cf_mit_MGFC2430K_19930730	MGFC2430K Package:DIE Model:eefet3 N-channel Gate Width=3000, Gate Length=0.6, Pdiss(max)=5000, Vds(typical)=10, Idss=547.88, Vt=-2.5
cf_mit_MGFC1412_19921217	MGFC1412 Package:DIE Model:eefet3 N-channel Gate Width=400, Gate Length=0.7, Pdiss(max)=550, Vds(typical)=3, Idss=63.18, Vt=-1.3
cf_mit_MGFC1404_19921217	MGFC1404 Package:DIE Model:eefet3 N-channel Gate Width=300, Gate Length=0.5, Pdiss(max)=500, Vds(typical)=3, Idss=51.09, Vt=-1.4
cf_mit_MGFC2415A_19930730	MGFC2415A Package:DIE Model:eefet3 N-channel Gate Width=1500, Gate Length=0.6, Pdiss(max)=2500, Vds(typical)=10, Idss=244.9, Vt=-2.2
cf_mit_MGFC1413_19930609	MGFC1413 Package:DIE Model:eefet3 N-channel Gate Width=180, Gate Length=0.5, Pdiss(max)=300, Vds(typical)=3, Idss=81.47, Vt=-1.9
cf_mit_MGFC2407A_19930730	MGFC2407A Package:DIE Model:eefet3 N-channel Gate Width=750, Gate Length=0.6, Pdiss(max)=1500, Vds(typical)=10, Idss=140.85, Vt=-2.4
cf_mit_MGFC1414_19930609	MGFC1414 Package:DIE Model:eefet3 N-channel Gate Width=150, Gate Length=0.5, Pdiss(max)=200, Vds(typical)=3, Idss=24.38, Vt=-1.2
cf_mit_MGFC2415_19930730	MGFC2415 Package:DIE Model:eefet3 N-channel Gate Width=1500, Gate Length=0.6, Pdiss(max)=2500, Vds(typical)=10, Idss=324.39, Vt=-3.7
cf_mit_MGFC2430A_19930730	MGFC2430A Package:DIE Model:eefet3 N-channel Gate Width=3000, Gate Length=0.6, Pdiss(max)=5000, Vds(typical)=10, Idss=576.75, Vt=-2.6
cf_mit_MGFC1425_19930609	MGFC1425 Package:DIE Model:eefet3 N-channel Gate Width=250, Gate Length=0.4, Pdiss(max)=350, Vds(typical)=3, Idss=22.78, Vt=-0.8
cf_mit_MGFC1402_19921216	MGFC1402 Package:DIE Model:eefet3 N-channel Gate Width=400, Gate Length=0.8, Pdiss(max)=550, Vds(typical)=3, Idss=61.3, Vt=-1.4
cf_mit_MGFC1801_19930730	MGFC1801 Package:DIE Model:eefet3 N-channel Gate Width=800, Gate Length=0.7, Pdiss(max)=1200, Vds(typical)=6, Idss=212.42, Vt=-2.9
cf_mit_MGFC1405_19930730	MGFC1405 Package:DIE Model:eefet3 N-channel Gate Width=300, Gate Length=0.4, Pdiss(max)=350, Vds(typical)=3, Idss=33.98, Vt=-0.9

NEC Chip GaAs FETs

For modeling specifications, see "Chip GaAs FETs" on page 3-1.

The NEC Chip GaAs FETs include 15 components, representing individual parts. The naming convention for these components is *cf_nec_<part number>_<model identifier>_<extraction date>*.

Table 3-8. NEC Chip GaAs FETs

Component Name	Description
cf_nec_NE900200_19930730	NE900200 Package:DIE Model:eefet3 N-channel Gate Width=1500, Gate Length=0.5, Pdiss(max)=3000, Vds(typical)=8, Idss=404.17, Vt=-3.9
cf_nec_NE72000_19930609	NE72000 Package:DIE Model:eefet3 N-channel Gate Width=400, Gate Length=1, Pdiss(max)=500, Vds(typical)=3, Idss=69.93, Vt=-1.5
cf_nec_NE71000hi_19920211	NE71000 Package:DIE Model:curtice N-channel MDS b.07 library extraction
cf_nec_NE71000_19930730	NE71000 Package:DIE Model:eefet3 N-channel Gate Width=300, Gate Length=0.3, Pdiss(max)=400, Vds(typical)=3, Idss=64.88, Vt=-1.5
cf_nec_NE900100_1993069	NE900100 Package:DIE Model:eefet3 N-channel Gate Width=750, Gate Length=0.5, Pdiss(max)=1500, Vds(typical)=8, Idss=227.21, Vt=-4
cf_nec_NE900000_19930730	NE900000 Package:DIE Model:eefet3 N-channel Gate Width=400, Gate Length=0.5, Pdiss(max)=800, Vds(typical)=8, Idss=115, Vt=-3.2
cf_nec_NE67300_37k_19931112	NE67300 Package:DIE Model:hpfet N-channel MDS b.07 library extraction
cf_nec_NE90000d23kwz_19931112	NE90000-23kwz Package:DIE Model:hpfet N-channel MDS b.07 library extraction
cf_nec_NE900100_19911201	NE900200 Package:DIE Model:curtice N-channel MDS b.07 library extraction
cf_nec_NE76100_19921215	NE76100 Package:DIE Model:eefet3 N-channel Gate Width=280, Gate Length=0.3, Pdiss(max)=500, Vds(typical)=3, Idss=69.03, Vt=-1
cf_nec_NE90000d12k_19931112	NE90000-12k Package:DIE Model:hpfet N-channel MDS b.07 library extraction
cf_nec_NE76000_19930730	NE76000 Package:DIE Model:eefet3 N-channel Gate Width=280, Gate Length=0.3, Pdiss(max)=500, Vds(typical)=3, Idss=37.27, Vt=-0.8
cf_nec_NE67300_19930730	NE67300 Package:DIE Model:eefet3 N-channel Gate Width=300, Gate Length=0.3, Pdiss(max)=400, Vds(typical)=3, Idss=72, Vt=-1.5
cf_nec_NE800400_19911201	NE800400 Package:DIE Model:curtice N-channel MDS b.07 library extraction
cf_nec_NE900400_19930730	NE900400 Package:DIE Model:eefet3 N-channel Gate Width=3000, Gate Length=0.5, Pdiss(max)=7500, Vds(typical)=8, Idss=822.93, Vt=-4.4

Okidata Chip GaAs FETs

For modeling specifications, see "Chip GaAs FETs" on page 3-1.

The Okidata Chip GaAs FETs include 2 components, representing individual parts. The naming convention for these components is *cf_oki_<part number>_<model identifier>_<extraction date>*.

Table 3-9. Okidata Chip GaAs FETs

Component Name	Description
cf_oki_KGA1450_19930609	KGA1450 Package:DIE Model:eefet3 N-channel Gate Width=300, Gate Length=0.25, Pdiss(max)=450, Vds(typical)=2, Idss=86.33, Vt=-1
cf_oki_KGA1460_19930609	KGA1460 Package:DIE Model:eefet3 N-channel Gate Width=200, Gate Length=0.25, Pdiss(max)=300, Vds(typical)=2, Idss=47.79, Vt=-1.2

Plessey Chip GaAs FETs

For modeling specifications, see "Chip GaAs FETs" on page 3-1.

The Plessey Chip GaAs FETs include 6 components, representing individual parts. The naming convention for these components is *cf_ply_<part number>_<model identifier>_<extraction date>*.

Table 3-10. PolyFet Chip GaAs FETs

Component Name	Description
cf_ply_P351140H_19930609	P351140H Package:DIE Model:eefet3 N-channel Gate Width=265, Gate Length=0.35, Pdiss(max)=400, Vds(typical)=4, Idss=87, Vt=-1.9
cf_ply_P351105_19930609	P351105 Package:DIE Model:eefet3 N-channel Gate Width=300, Gate Length=0.8, Pdiss(max)=450, Vds(typical)=5, Idss=50.88, Vt=-3.2
cf_ply_P351130_19930609	P351130 Package:DIE Model:eefet3 N-channel Gate Width=265, Gate Length=0.5, Pdiss(max)=400, Vds(typical)=3, Idss=75, Vt=-1.7
cf_ply_P351140L_19930609	P351140L Package:DIE Model:eefet3 N-channel Gate Width=265, Gate Length=0.35, Pdiss(max)=400, Vds(typical)=3, Idss=28, Vt=-2.3
cf_ply_P351101_19930609	P351101 Package:DIE Model:eefet3 N-channel Gate Width=350, Gate Length=4, Pdiss(max)=525, Vds(typical)=5, Idss=21.26, Vt=-1.5
cf_ply_P351140M_19930609	P351140M Package:DIE Model:eefet3 N-channel Gate Width=265, Gate Length=0.35, Pdiss(max)=400, Vds(typical)=3, Idss=50.24, Vt=-1.4

Raytheon Chip GaAs FETs

For modeling specifications, see "Chip GaAs FETs" on page 3-1.

The Raytheon Chip GaAs FETs include a single component, representing an individual part. The naming convention for the component is *cf_ray_<part number>_<model identifier>_<extraction date>*.

Table 3-11. Raytheon Chip GaAs FETs

Component Name	Description
cf_ray_RPK200303_19911201	RPK200303 Package:DIE Model:curtice N-channel MDS b.07 library extraction

Texas Instruments Chip GaAs FETs

For modeling specifications, see "Chip GaAs FETs" on page 3-1.

The Texas Instruments Chip GaAs FETs include 3 components, representing individual parts. The naming convention for the component is *cf_ti_<part number>_<model identifier>_<extraction date>*.

Table 3-12. Texas Instruments Chip GaAs FETs

Component Name	Description
cf_ti_TGF1350_19920228	TGF1350 Package:DIE Model:hpfet N-channel MDS b.07 library extraction
cf_ti_TGF1350_19930609	TGF1350 Package:DIE Model:eefet3 N-channel Gate Width=300, Gate Length=0.5, Pdiss(max)=500, Vds(typical)=3, Idss=54.6, Vt=-1.2
cf_ti_TGF1350_19920212	TGF1350 Package:DIE Model:curtic N-channel Gate Width=MDS, Gate Length=b.07, Pdiss(max)=library, Vds(typical)=extraction, Idss=, Vt=

Toshiba Chip GaAs FETs

For modeling specifications, see "Chip GaAs FETs" on page 3-1.

The Toshiba Chip GaAs FETs include 15 components, representing individual parts. The naming convention for these components is *cf_tsb_<part number>_<model identifier>_<extraction date>*.

Table 3-13. Toshiba Chip GaAs FETs

Component Name	Description
cf_tsb_JS8818AS_19911201	JS8818AS Package:DIE Model:curtice N-channel MDS b.07 library extraction
cf_tsb_JS8851AS_19921217	JS8851AS Package:DIE Model:eefet3 N-channel Gate Width=800, Gate Length=0.5, Pdiss(max)=2000, Vds(typical)=10, Idss=205.49, Vt=-4
cf_tsb_JS8818AAS_19921216	JS8818AAS Package:DIE Model:eefet3 N-channel Gate Width=300, Gate Length=0.3, Pdiss(max)=400, Vds(typical)=3, Idss=67.36, Vt=-1.8
cf_tsb_JS8850AAS_19920213	JS8850AAS Package:DIE Model:curtice N-channel MDS b.07 library extraction
cf_tsb_JS8834AS_19921215	JS8834AS Package:DIE Model:eefet3 N-channel Gate Width=400, Gate Length=0.8, Pdiss(max)=1500, Vds(typical)=10, Idss=179, Vt=-3.6
cf_tsb_JS8830AS_19930730	JS8830AS Package:DIE Model:eefet3 N-channel Gate Width=200, Gate Length=0.25, Pdiss(max)=250, Vds(typical)=3, Idss=19.61, Vt=-0.8
cf_tsb_JS8836AAS_19921217	JS8836AAS Package:DIE Model:eefet3 N-channel Gate Width=2400, Gate Length=0.8, Pdiss(max)=5000, Vds(typical)=10, Idss=530.04, Vt=-3.9
cf_tsb_JS8819AS_19911201	JS8819AS Package:DIE Model:curtice N-channel MDS b.07 library extraction
cf_tsb_JS8852AS_19921217	JS8852AS Package:DIE Model:eefet3 N-channel Gate Width=1500, Gate Length=0.5, Pdiss(max)=4000, Vds(typical)=10, Idss=452.65, Vt=-4.5
cf_tsb_JS8892AS_19921217	JS8892AS Package:DIE Model:eefet3 N-channel Gate Width=600, Gate Length=0.5, Pdiss(max)=1500, Vds(typical)=7, Idss=183.23, Vt=-3.1
cf_tsb_JS8835AS_19921215	JS8835AS Package:DIE Model:eefet3 N-channel Gate Width=800, Gate Length=0.8, Pdiss(max)=2500, Vds(typical)=10, Idss=190.51, Vt=-4.1
cf_tsb_JS8850AAS_19921222	JS8850AAS Package:DIE Model:eefet3 N-channel Gate Width=450, Gate Length=0.5, Pdiss(max)=1000, Vds(typical)=10, Idss=94.66, Vt=-3.7
cf_tsb_JS8818AS_19921216	JS8818AS Package:DIE Model:eefet3 N-channel Gate Width=300, Gate Length=0.3, Pdiss(max)=400, Vds(typical)=3, Idss=67.36, Vt=-1.8
cf_tsb_JS8819AS_19930730	JS8819AS Package:DIE Model:eefet3 N-channel Gate Width=300, Gate Length=0.5, Pdiss(max)=400, Vds(typical)=3, Idss=40.48, Vt=-0.9
cf_tsb_JS8893AS_19921217	JS8893AS Package:DIE Model:eefet3 N-channel Gate Width=1200, Gate Length=0.5, Pdiss(max)=2500, Vds(typical)=7, Idss=397.86, Vt=-3.5

Chapter 4: HEMTs

The HEMTs consist of nonlinear models representing 38 HEMTs from 9 manufacturers. The HEMTs available for selection from the Schematic window are:

Chip HEMTs

Packaged HEMTS

Chip HEMTs

The library components are listed in tables, organized by manufacturer library group, and the individual components provided in each group are listed by component name along with relevant physical and electrical characteristics.

The tabulated Physical Specifications include:

Gw: Gate width, microns

Gl: Gate length, microns

Maximum Electrical Specifications include:

Pdiss: Maximum dissipated power, mW

Vbr: Breakdown voltage, V

Typical Electrical Specifications include:

Vd: Typical drain-source operating voltage

VIdss: Saturation current, mA, simulated using the model at typical Vds

Vt: Threshold gate voltage, V, simulated using the model at typical Vds

Fujitsu Chip HEMTs

For modeling specifications, see .

The Fujitsu Chip HEMTs include 6 components, representing individual parts. The naming convention for these components is *ch_fuj_<part number>_<model identifier>_<extraction date>*.

Table 4-1. Fujitsu Chip HEMTs

Component Name	Description
ch_fuj_FHR02X_19921221	FHR02X Package:DIE Model:eehemt1 N-channel Gate Width=na, Gate Length=na, Pdiss(max)=180, Vds(typical)=2, Idss=42.2, Vt=-1.06
ch_fuj_FHX04X_19930913	FHX04X Package:DIE Model:eehemt1 N-channel Gate Width=na, Gate Length=na, Pdiss(max)=180, Vds(typical)=2, Idss=39.3, Vt=-0.9
ch_fuj_FHR10X_19930915	FHR10X Package:DIE Model:eehemt1 N-channel Gate Width=na, Gate Length=na, Pdiss(max)=180, Vds(typical)=2, Idss=28.2, Vt=-1.27
ch_fuj_FHX15X_19930913	FHX15X Package:DIE Model:eehemt1 N-channel Gate Width=na, Gate Length=na, Pdiss(max)=180, Vds(typical)=2, Idss=36.2, Vt=-0.74
ch_fuj_FHX34X_19930913	FHX34X Package:DIE Model:eehemt1 N-channel Gate Width=na, Gate Length=na, Pdiss(max)=290, Vds(typical)=3, Idss=36.7, Vt=-0.71
ch_fuj_FHX35X_19930915	FHX35X Package:DIE Model:eehemt1 N-channel Gate Width=200, Gate Length=0.25, Pdiss(max)=290, Vds(typical)=3, Idss=32.8, Vt=-0.66

Microwave Technology Chip HEMTs

For modeling specifications, see "Chip HEMTs" on page 4-2.

The Microwave Technology Chip HEMTs include 1 component, representing an individual part. The naming convention for the component is *ch_mwt_<part number>_<model identifier>_<extraction date>*.

Table 4-2. Microwave Technology Chip HEMTs

Component Name	Description
ch_mwt_MWTH4LN_19930915	MWT-H4LN Package:DIE Model:eehemt1 N-channel Gate Width=180, Gate Length=0.3, Pdiss(max)=280, Vds(typical)=4.5, Idss=29.6, Vt=-0.92

Mitsubishi Chip HEMTs

For modeling specifications, see "Chip HEMTs" on page 4-2.

The Mitsubishi Chip HEMTs include a single component, representing an individual part. The naming convention for the component is *ch_mit_<part number>_<model identifier>_<extraction date>*.

Table 4-3. Mitsubishi Chip HEMTs

Component Name	Description
ch_mit_MGFC4416C_19930915	MGFC4416C Package:DIE Model:eehemt1 N-channel Gate Width=na, Gate Length=na, Pdiss(max)=355, Vds(typical)=2, Idss=50.6, Vt=-0.86

NEC Chip HEMTs

For modeling specifications, see .

The NEC Chip HEMTs include 4 components, representing individual parts. The naming convention for these components is *ch_nec_<part number>_<model identifier>_<extraction date>*.

Table 4-4. NEC Chip HEMTs

Component Name	Description
ch_nec_NE33200_19940322	NE33200 Package:DIE Model:hpfet N-channel MDS b.07 library extraction
ch_nec_NE32400_19940322	NE32400 Package:DIE Model:hpfet N-channel MDS b.07 library extraction
ch_nec_NE32400_19921222	NE32400 Package:DIE Model:eehemt1 N-channel Gate Width=na, Gate Length=0.25, Pdiss(max)=165, Vds(typical)=2, Idss=35.4, Vt=-0.74
ch_nec_NE33200_19921223	NE33200 Package:DIE Model:eehemt1 N-channel Gate Width=na, Gate Length=0.25, Pdiss(max)=165, Vds(typical)=2, Idss=40.4, Vt=-0.67

Okidata Chip HEMTs

For modeling specifications, see "Chip HEMTs" on page 4-2.

The Okidata Chip HEMTs include 4 components, representing individual parts. The naming convention for these components is *ch_oki_<part number>_<model identifier>_<extraction date>*.

Table 4-5. Okidata HEMTs

Component Name	Description
ch_oki_KGA1770_19930609	KGA1770 Package:DIE Model:eehemt1 N-channel Gate Width=300, Gate Length=0.3, Pdiss(max)=200, Vds(typical)=2, Idss=17.5, Vt=-0.56
ch_oki_KGA1850_19930609	KGA1850 Package:DIE Model:eehemt1 N-channel Gate Width=300, Gate Length=0.3, Pdiss(max)=200, Vds(typical)=2, Idss=20.2, Vt=-0.51
ch_oki_KGA1860_19930609	KGA1860 Package:DIE Model:eehemt1 N-channel Gate Width=200, Gate Length=0.3, Pdiss(max)=200, Vds(typical)=2, Idss=17.05, Vt=-0.65
ch_oki_KGA1870_19930609	KGA1870 Package:DIE Model:eehemt1 N-channel Gate Width=200, Gate Length=0.3, Pdiss(max)=200, Vds(typical)=2, Idss=20.6, Vt=-0.63

Toshiba Chip HEMTs

For modeling specifications, see "Chip HEMTs" on page 4-2.

The Toshiba Chip HEMTs include 5 components, representing individual parts. The naming convention for these components is *ch_tsb_<part number>_<model identifier>_<extraction date>*.

Table 4-6. Toshiba Chip HEMTs

Component Name	Description
ch_tsb_JS8910AS_19921222	JS8910AS Package:DIE Model:eehemt1 N-channel Gate Width=100, Gate Length=0.1, Pdiss(max)=150, Vds(typical)=1.5, Idss=23.3, Vt=-0.73
ch_tsb_JS8902AS_19921222	JS8902AS Package:DIE Model:eehemt1 N-channel Gate Width=200, Gate Length=0.5, Pdiss(max)=200, Vds(typical)=2, Idss=18.1, Vt=-0.46
ch_tsb_JS8905AS_19921222	JS8905AS Package:DIE Model:eehemt1 N-channel Gate Width=200, Gate Length=0.25, Pdiss(max)=200, Vds(typical)=2, Idss=10.1, Vt=-0.56
ch_tsb_JS8911AS_19931207	JS8911AS Package:DIE Model:hpfet N-channel MDS b.07 library extraction
ch_tsb_JS8901AS_19930913	JS8901AS Package:DIE Model:eehemt1 N-channel Gate Width=200, Gate Length=0.5, Pdiss(max)=200, Vds(typical)=2, Idss=16.9, Vt=-0.59

Packaged HEMTs

The library components are listed in tables, organized by manufacturer library group and the individual components provided in each group are listed by component name along with relevant physical and electrical characteristics.

The tabulated Physical Specifications include:

Gw: gate width, microns

Gl: gate length, microns

Maximum Electrical Specifications include:

Pdiss: maximum dissipated power, mW

Vbr: breakdown voltage, V.

Typical Electrical Specifications include:

Vds: typical drain-source operating voltage, V

Idss: saturation current, mA, simulated using the model at typical Vds

Vt: threshold gate voltage, V, simulated using the model at typical Vds

Agilent Technologies Packaged HEMTs

For modeling specifications, see "Packaged HEMTs" on page 4-9.

The Agilent Technologies Packaged HEMTs include four components, representing individual parts. The naming convention for the component is *ph_hp_<part number>_<extraction date>*.

Table 4-7. Agilent Technologies Packaged HEMTs

Component Name	Description
ph_hp_ATF36163_19951110	ATF36163 PHEMT(Pseudomorphic High Electron Mobility Transistor): SOT-363Low parasitic ceramic microstrip package -6 terminal, Pdiss=180mW, VDS(Max)=3V, VGS(Max)=-3V, VGD(Max)=-3.5V, Id(Max)=Idss(max)=40mA, VDS(typical)=1.5V, ID(Typical)=10mA, Gm=55, Ft>18GHz
ph_hp_ATF35176_19921221	ATF35176: ATF76 Package 4-terminal, Gw=na, Gl=na, Pdiss=225mW Vbr=na, @Vds=2V: Idss(sim)=47.20mA, Vt(sim)=-0.92V
ph_hp_ATF34143_19990129	ATF34143 PHEMT(Pseudomorphic High Electron Mobility Transistor):SOT-343 Low cost surface mount small plastic package -4 terminal, Pdiss=725mW, VDS(Max)=5.5V, VGS(Max)=-5V, VGD(Max)=-5V, Id(Max)=Idss(max)=145mA, VDS(typical)=4V, ID(Typical)=60mA, Gm=230,
ph_hp_ATF36077_19940627	ATF36077 PHEMT(Pseudomorphic High Electron Mobility Transistor):Low parasitic ceramic microstrip package(style 77) -4 terminal, Pdiss=180mW, VDS(Max)=3V, VGS(Max)=-3V, VGD(Max)=-3.5V, Id(Max)=Idss(max)=45mA, VDS(typical)=1.5V, ID(Typical)=10mA, Gm=55, Ft=10GHz

Fujitsu Packaged HEMTs

For modeling specifications, see "Packaged HEMTs" on page 4-9.

The Fujitsu Packaged HEMTs include a single component, representing an individual part. The naming convention for the component is *ph_fuj_<part number>_<extraction date>*.

Table 4-8. Fujitsu Packaged HEMTs

Component Name	Description
ph_fuj_FHX35LG_19921222	FHX35LG Package:LG Model:eehemt1 N-channel Gate Width=na, Gate Length=na, Pdiss(max)=290, Vds(typical)=3, Idss=40, Vt=-0.77

Mitsubishi Packaged HEMTs

For modeling specifications, see .

The Mitsubishi Packaged HEMTs include 3 components, representing individual parts. The naming convention for these components is *ph_mit_<part number>_<extraction date>*.

Table 4-9. Mitsubishi Packaged HEMTs

Component Name	Description
ph_mit_MGF4918D_19930915	MGF4918D Package:GD16 Model:eehemt1 N-channel Gate Width=na, Gate Length=0.25, Pdiss(max)=200, Vds(typical)=2, Idss=53.6, Vt=-0.79
ph_mit_MGF4301_19930915	MGF4301 Package:GD4 Model:eehemt1 N-channel Gate Width=na, Gate Length=na, Pdiss(max)=160, Vds(typical)=2, Idss=36.4, Vt=-0.75
ph_mit_MGF4916C_19930915	MGF4916C Package:GD16 Model:eehemt1 N-channel Gate Width=na, Gate Length=0.25, Pdiss(max)=200, Vds(typical)=2, Idss=44.6, Vt=-0.79

NEC Packaged HEMTs

For modeling specifications, see "Packaged HEMTs" on page 4-9.

The NEC Packaged HEMTs include 4 components, representing individual parts. The naming convention for these components is *ph_nec_<part number>_<extraction date>*.

Table 4-10. NEC Packaged HEMTs

Component Name	Description
ph_nec_NE33284A_19921223	NE33284A Package:NEC84A Model:eehemt1 N-channel Gate Width=na, Gate Length=0.25, Pdiss(max)=165, Vds(typical)=2, Idss=35.3, Vt=-0.65
ph_nec_NE32484A_19921222	NE32484A Package:NEC84A Model:eehemt1 N-channel Gate Width=na, Gate Length=0.25, Pdiss(max)=165, Vds(typical)=2, Idss=37.4, Vt=-0.79
ph_nec_NE32684A_19921222	NE32684A Package:NEC84A Model:eehemt1 N-channel Gate Width=na, Gate Length=0.2, Pdiss(max)=165, Vds(typical)=2, Idss=37.1, Vt=-0.7
ph_nec_NE42484A_19921223	NE42484A Package:NEC84A Model:eehemt1 N-channel Gate Width=na, Gate Length=0.35, Pdiss(max)=165, Vds(typical)=2, Idss=53.2, Vt=-1.04

Siemens Packaged HEMTs

For modeling specifications, see "Packaged HEMTs" on page 4-9.

The Siemens Packaged HEMTs include 2 components, representing individual parts. The naming convention for these components is *ph_sms_<part number>_<extraction date>*.

Table 4-11. Siemens Packaged HEMTs

Component Name	Description
ph_sms_CFY76d08_19921221	CFY76-08 Package:MW4 Model:eehemt1 N-channel Gate Width=180, Gate Length=0.25, Pdiss(max)=180, Vds(typical)=2, Idss=31.8, Vt=-0.87
ph_sms_CFY66d08_19921221	CFY66-08 Package:SMSMICROX Model:eehemt1 N-channel Gate Width=180, Gate Length=0.25, Pdiss(max)=200, Vds(typical)=2, Idss=31.8, Vt=-0.82

Sony Packaged HEMTs

For modeling specifications, see "Packaged HEMTs" on page 4-9.

The Sony Packaged HEMTs include 3 components, representing individual parts. The naming convention for these components is *ph_sny_<part number>_<extraction date>*.

Table 4-12. Sony Packaged HEMTs

Component Name	Description
ph_sny_2SK676_19921217	2SK676 Package:M253 Model:eehemt1 N-channel Gate Width=300, Gate Length=0.5, Pdiss(max)=340, Vds(typical)=3, Idss=45.3, Vt=-2.04
ph_sny_2SK677_19921217	2SK677 Package:M253 Model:eehemt1 N-channel Gate Width=360, Gate Length=0.5, Pdiss(max)=340, Vds(typical)=3, Idss=61.8, Vt=-2.15
ph_sny_SGH5002F_19931224	SGH5002F Package:M253 Model:eehemt1 N-channel Gate Width=300, Gate Length=0.5, Pdiss(max)=340, Vds(typical)=3, Idss=49.1, Vt=-1.63

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