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Title: CREATIVE PDB'S (PARTS DATABASES)

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Los Alamos
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CREATIVE PDB'S (PARTS DATABASES)

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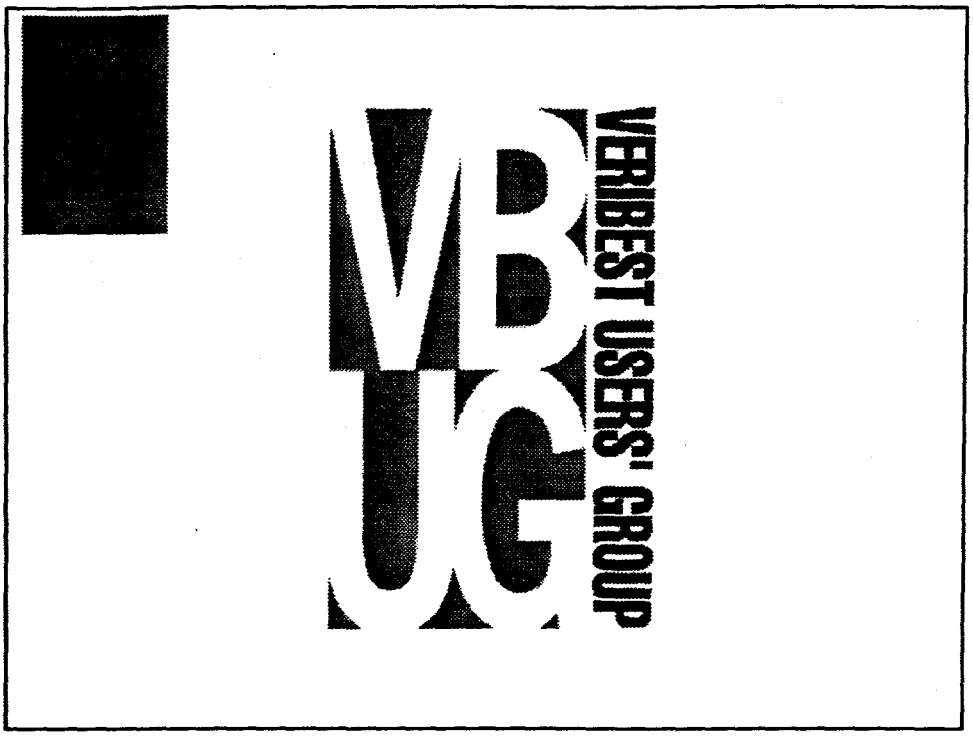
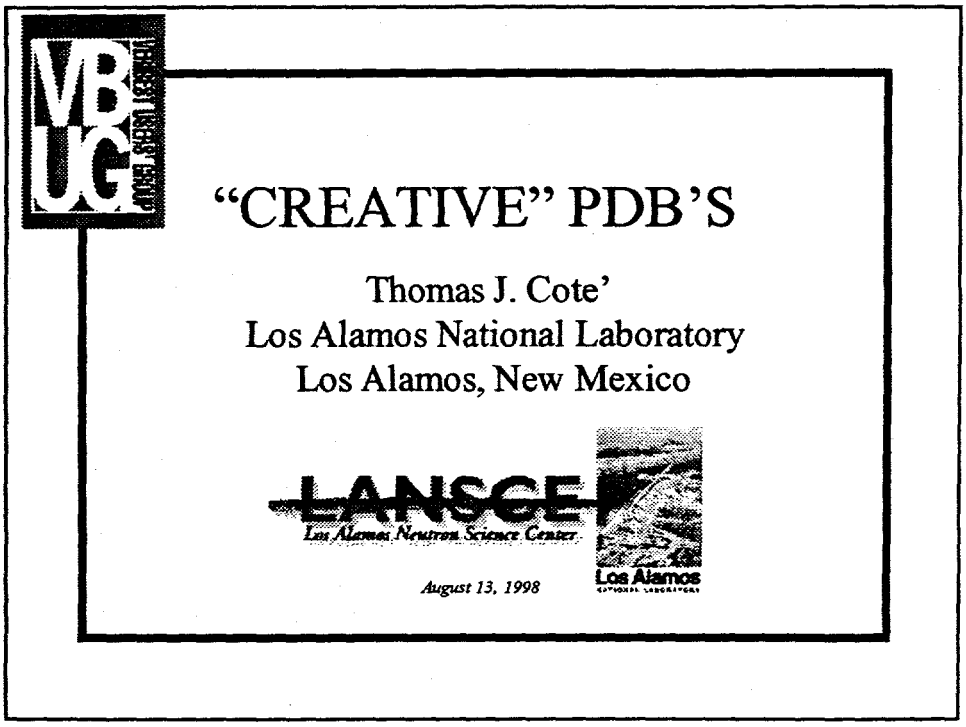
Abstract

PDB component property entries and creative "picklists" can make the schematic entry process and downstream tools such as BOM generation more useful. This presentation will show how creative PDB's can enhance the design process. Examples of PDB entries developed at Los Alamos National Laboratory will be discussed.





"CREATIVE" PDB'S

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Los Alamos Neutron Science Center

Los Alamos

August 13, 1998

TOPICS

→ Introduction / Background Information

- Customizing PDB Properties/Picklists
- PDB Examples
- Displaying PDB Component Properties on Symbols/Schematics
- Editing Property Files
- Displaying PDB Component Properties on BOM's
- Summary

Introduction/Background Information

- Legacy Product - Cadnetix/Dazix
- R&D Environment
- Front to Back Design
- Wide Range of PCB Requirements
- Many Engineering Customers/Clients
- Small Design Section
- No Full-Time Librarian

TOPICS

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CUSTOMIZING PDB PROPERTIES

- Identify Requirements
- Make The PDB Work For You

IDENTIFY REQUIREMENTS

- Identify the requirements of your design process & develop a PDB format that supports it.

  For example, we decided that our design process would include using symbol device place on all of our schematics. We found that the default component properties in the delivered pdb's were not adequate for our requirements, so, we modified them.

MAKE THE PDB WORK FOR YOU!

- We set out to make our pdb's "designer friendly" so that our schematic entry tasks would be less cumbersome. We designed a simplified picklist format which we built into our pdb's.

TOPICS

- Introduction / Background Information
- Customizing PDB Properties/Picklists

→ PDB Examples

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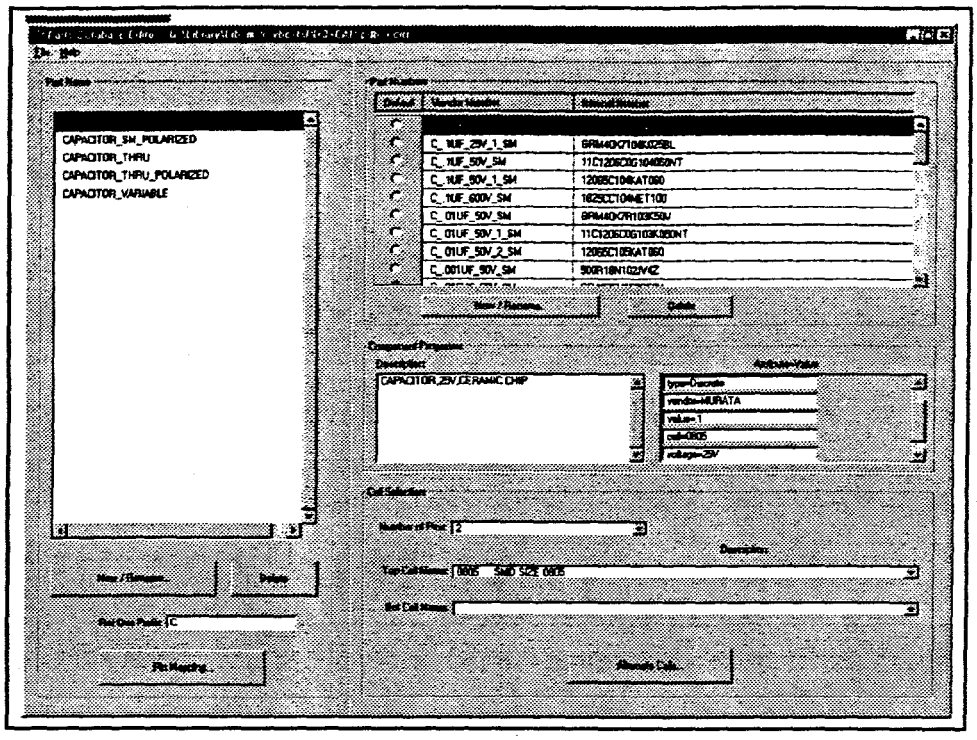
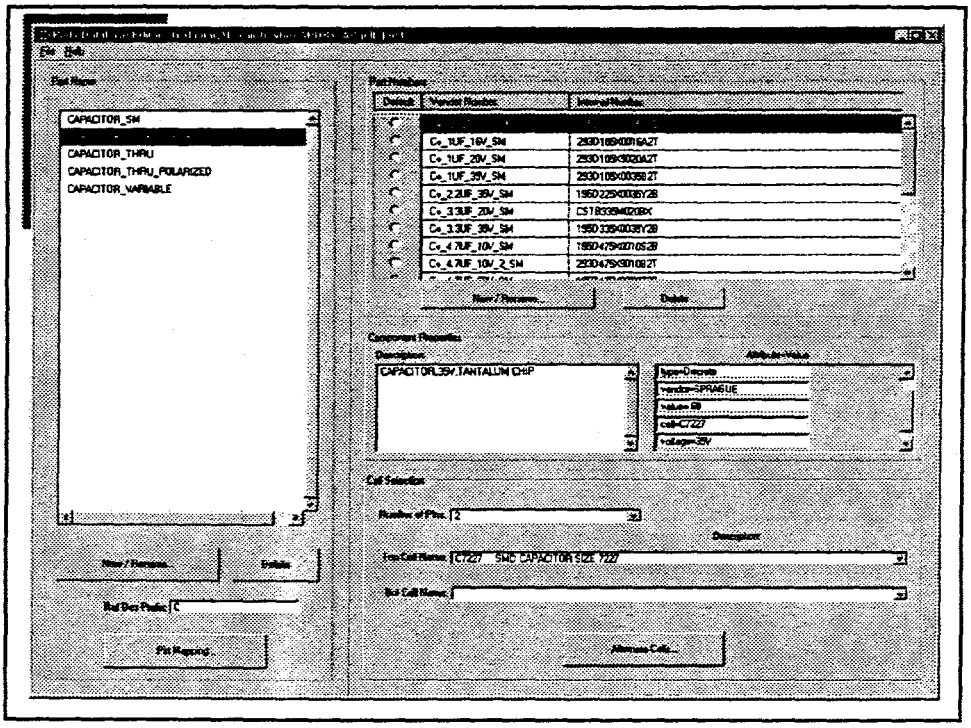
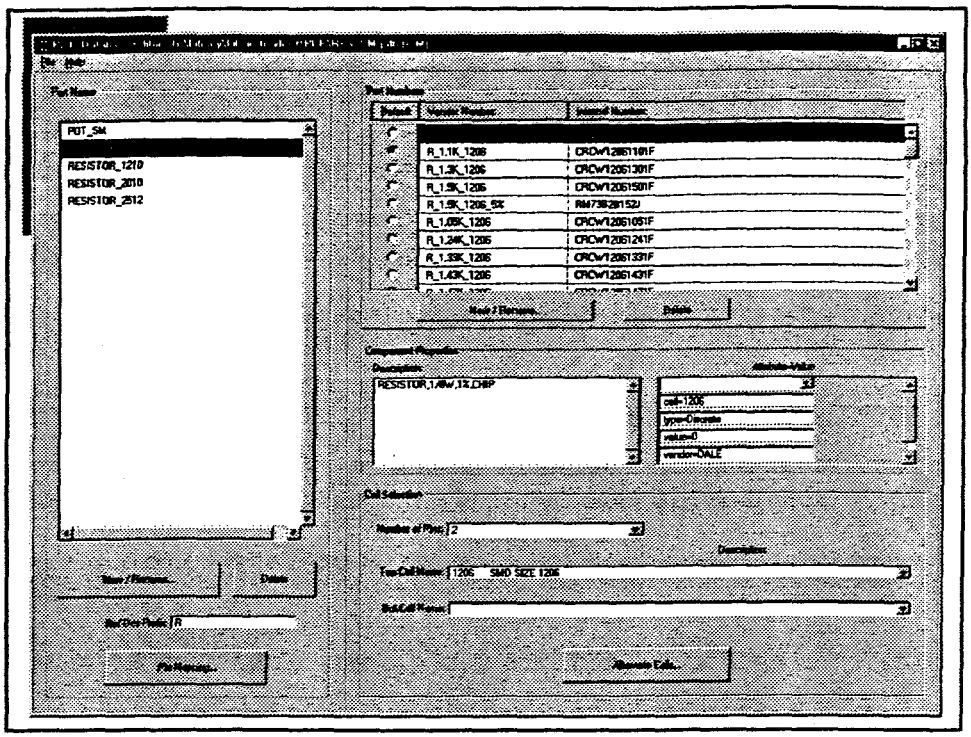
EXAMPLES

- PDB Component Properties
- PDB "Picklists"


CAPACITOR_SM_POLARIZED
CAPACITOR_THRU
CAPACITOR_THRU_POLARIZED
CAPACITOR_VARIABLE
C_1UF_25V_1_SM
C_1UF_50V_SM
C_1UF_50V_1_SM
C_1UF_600V_SM
C_01UF_50V_SM
C_01UF_50V_1_SM
C_01UF_50V_2_SM
C_001UF_50V_SM
CAPACITOR,25V,CERAMIC CHIP


CAPACITOR_SM
CAPACITOR_THRU
CAPACITOR_THRU_POLARIZED
CAPACITOR_VARIABLE
Co_1UF_16V_SM
Co_1UF_20V_SM
Co_1UF_35V_SM
Co_2.2UF_35V_SM
Co_3.3UF_25V_SM
Co_3.3UF_35V_SM
Co_4.7UF_10V_SM
Co_4.7UF_10V_2_SM
CAPACITOR,35V,TANTALUM CHIP



Did You Know....

- You can move pdb entries between pdb libraries in the cell manager?

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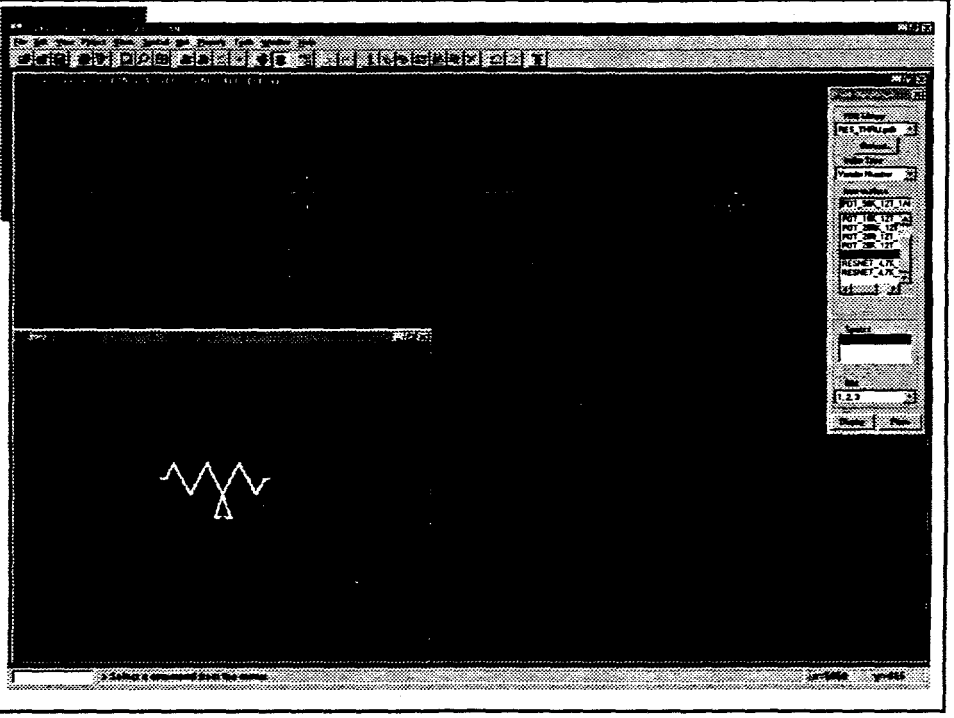


PLACING COMPONENT PROPERTIES ON SYMBOLS

- PLACEMENT
- SETTING ROTATIONS
- SETTING VISIBILITY ON/OFF
- COLORIZING PROPERTIES

TOPICS

- Introduction / Background Information
- Customizing PDB Properties/Picklists
- PDB Examples
- Displaying PDB Component Properties on Schematics

→ Editing Property Files

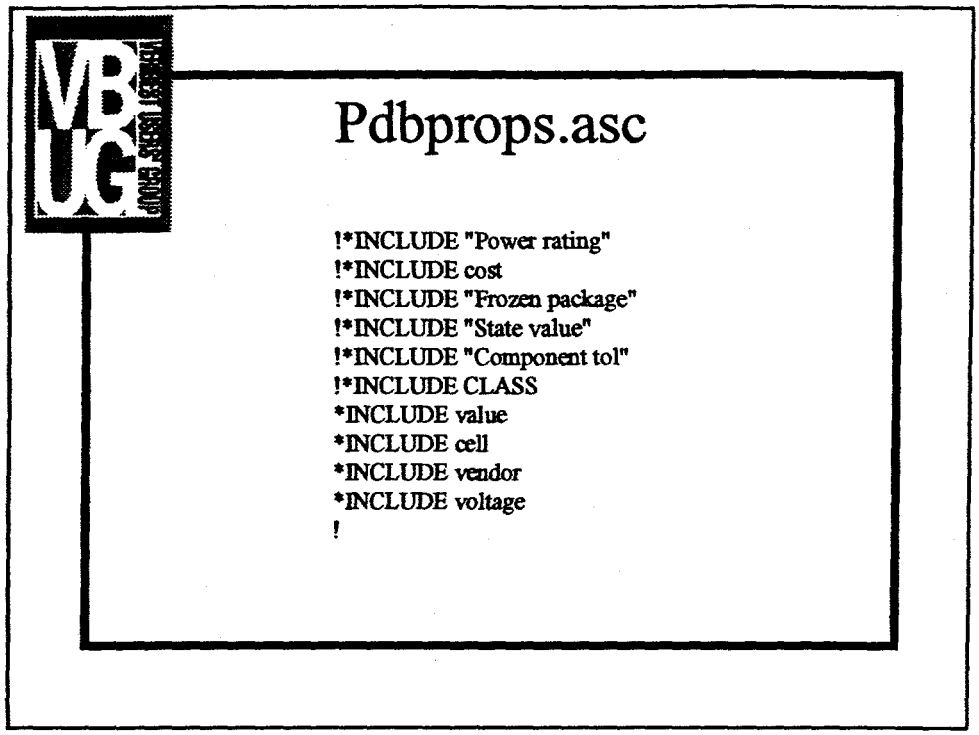
- Displaying PDB Component Properties on BOM's
- Summary

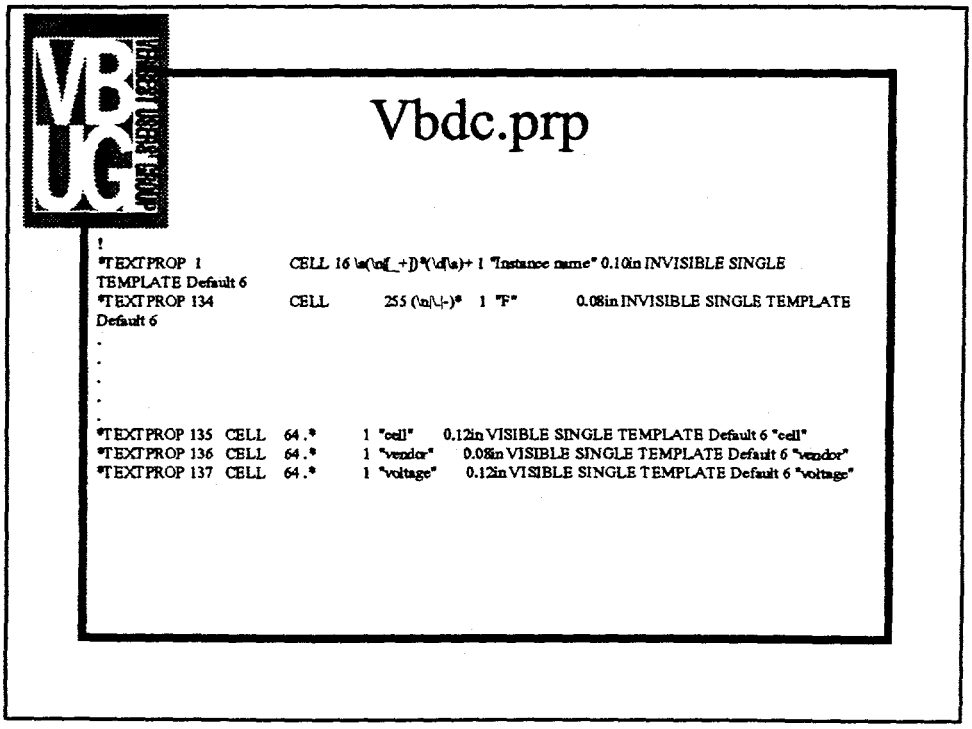
EDITING PROPERTY FILES

- PDB EDITOR PROPERTIES ***Pdbedit.asc***
- PDB PROPERTY CONFIG. ***Pdbprops.asc***
- TEXT PROPERTIES ***Vbdc.prp***

Pdbedit.asc

```
SECTION Component
LIST Properties
VALUE "cell="
VALUE "value="
VALUE "vendor="
VALUE "voltage="
VALUE "bottom_height="
VALUE "cost="
VALUE "pins="
VALUE "rating="
VALUE "tech="
VALUE "tolerance="
VALUE "top_height="
.
.
.
VALUE ""VHDL Model"="
ENDLIST
ENDSECTION
```


VB UG
VIRGINIA BEACH USERS GROUP
Pdbprops.asc
!*INCLUDE "Power rating"
!*INCLUDE cost
!*INCLUDE "Frozen package"
!*INCLUDE "State value"
!*INCLUDE "Component tol"
!*INCLUDE CLASS
*INCLUDE value
*INCLUDE cell
*INCLUDE vendor
*INCLUDE voltage
!


VB UG
VIRGINIA BEACH USERS GROUP
Vbdc.prp
!
TEXTPROP 1 CELL 16 \n(\n[_+])(\d[\n)+ 1 "Instance name" 0.10in INVISIBLE SINGLE TEMPLATE Default 6
TEXTPROP 134 CELL 255 (\n[\-) 1 "F" 0.08in INVISIBLE SINGLE TEMPLATE Default 6
.
.
.
.
.
TEXTPROP 135 CELL 64 . 1 "cell" 0.12in VISIBLE SINGLE TEMPLATE Default 6 "cell"
TEXTPROP 136 CELL 64 . 1 "vendor" 0.08in VISIBLE SINGLE TEMPLATE Default 6 "vendor"
TEXTPROP 137 CELL 64 . 1 "voltage" 0.12in VISIBLE SINGLE TEMPLATE Default 6 "voltage"

TOPICS

- Introduction / Background Information
- Customizing PDB Properties/Picklists
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- Displaying PDB Component Properties on Schematics
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- → Displaying PDB Component Properties on BOM's
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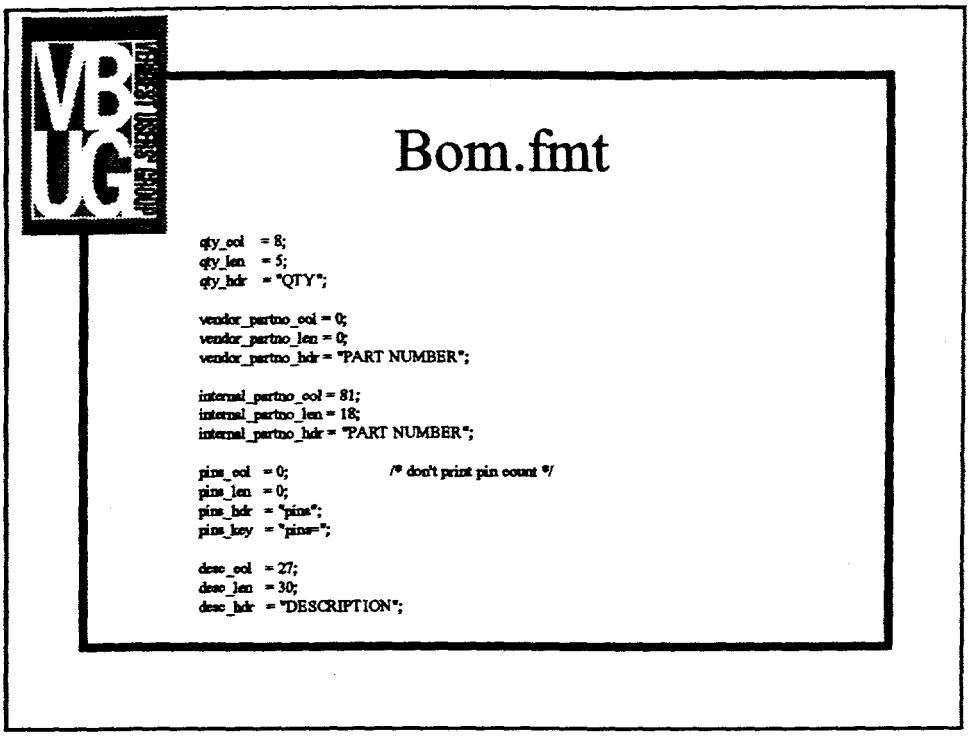
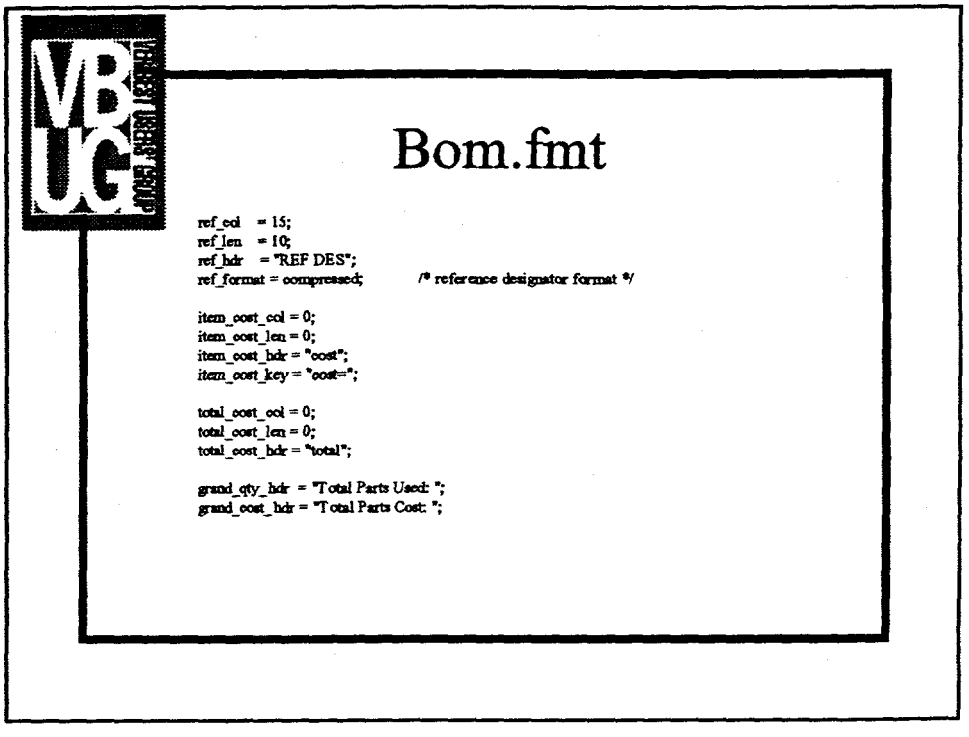
Bom.fmt

```
hdr_1 = "----------\n";
hdr_2 = "Los Alamos National Laboratory\n";
hdr_3 = "LANSCE-8 ECAD\n";
hdr_4 = "\n";

sort            = by_internal_partno; /* sort items by internal part number */
lines_per_page  = 39;                 /* ilp811 laser printer, sb -60 for regular lp's*/
col_hdr_just    = center;             /* center justify column header text */
col_hdr_bang    = -2;                 /* column header bang justification */
hdr_just        = center;             /* user defined header justification */
line_size       = 132;                /* number of characters per line */
page_mode       = yes;                /* do page numbers */
print_headers   = yes;                /* print page headers */
col_bang        = -2;                 /* no column bangs */
print_totals    = yes;                /* print qty/cost totals */
continued_line_col  = 5;              /* where to print the continued line character */
continued_line_char = "*";            /* character to use for continued lines */

itemno_col = 2;
itemno_len = 4;
itemno_hdr = "ITEM";
```


MBUG
Bom.fmt
qty_col = 8;
qty_len = 5;
qty_hdr = "QTY";
vendor_partno_col = 0;
vendor_partno_len = 0;
vendor_partno_hdr = "PART NUMBER";
internal_partno_col = 81;
internal_partno_len = 18;
internal_partno_hdr = "PART NUMBER";
pins_col = 0; /* don't print pin count */
pins_len = 0;
pins_hdr = "pins";
pins_key = "pins=";
desc_col = 27;
desc_len = 30;
desc_hdr = "DESCRIPTION";


MBUG
Bom.fmt
ref_col = 15;
ref_len = 10;
ref_hdr = "REF DES";
ref_format = compressed; /* reference designator format */
item_cost_col = 0;
item_cost_len = 0;
item_cost_hdr = "cost";
item_cost_key = "cost=";
total_cost_col = 0;
total_cost_len = 0;
total_cost_hdr = "total";
grand_qty_hdr = "Total Parts Used: ";
grand_cost_hdr = "Total Parts Cost: ";

Bom.fmt

```
free1_col = 60;
free1_len = 8;
free1_hdr = "VALUE";
free1_line = 0;
free1_key = "value=";

free2_col = 101;
free2_len = 15;
free2_hdr = "VENDOR";
free2_line = 0;
free2_key = "vendor=";

free3_col = 71;
free3_len = 8;
free3_hdr = "CELL";
free3_line = 0;
free3_key = "cell=";

free4_col = 0;
free4_len = 0;
free4_hdr = "free4";
free4_line = 4;
free4_key = "free4=";
```

Electronics Design System Page:

Bill of Materials
<<<from Job: F:\job\606427\CAE\606427.prj>>>

Los Alamos National Laboratory
LANSCE-8 ECAD

		REF DES	DESCRIPTION	VALUE	CELL	PART NUMBER	VENDOR
1	2	D1,D2	DIODE, SCHOTTKY DETECTOR		ACSM2	ACSM-2035M/P	ADVANCED CONTROL
2	12	R100,R101	RESISTOR,1/8W,1%,CHIP	TBD	1206	CRCW12060000F	DALE
		R102,R103					
		R104,R105					
		R106,R107					
		R108,R109					
		R110,R111					
3	13	R112,R113	RESISTOR,1/8W,1%,CHIP	1K	1206	CRCW12061001F	DALE
		R114,R115					
		R116,R117					
		R118,R119					
		R120,R121					
		R122,R123					
		R124					
4	4	R125,R126	RESISTOR,1/8W,1%,CHIP	10K	1206	CRCW12061002F	DALE
		R127,R128					
5	2	R129,R130	RESISTOR,1/8W,1%,CHIP	100K	1206	CRCW12061003F	DALE
6	3	R137,R138	RESISTOR,1/8W,1%,CHIP	143	1206	CRCW12061430F	DALE
		R139					
7	1	R142	RESISTOR,1/8W,1%,CHIP	287	1206	CRCW12062870F	DALE
8	2	R140,R141	RESISTOR,1/8W,1%,CHIP	619	1206	CRCW12066190F	DALE

TOPICS

- Introduction / Background Information
- Developing Custom PDB Component Properties and Creative Picklists
- Using PDB Component Properties in Schematics
- Editing Property Files
- Extracting PDB Component Properties in BOM's

→ Summary

SUMMARY

- "Creative" PDB's can help simplify the design entry process
- Master Library entries need to be created first
- Property files need to be edited for your specific process
- Make the PDB work for You!