

1 Introduction

The OSD3358 has 400 pins in total. Generating a symbol to use in a schematic can be a tedious job and one that is prone to errors. OrCAD Capture is a popular and industry standard schematic capture software. It has a feature that lets the user input all the pin names and attributes into a spreadsheet and generates a schematic symbol based on those inputs. This document describes the process of generating a custom symbol using an OrCAD importable Excel sheet available on the Octavo Systems Website ([Link](#)). This Excel sheet contains all the pin names and their default attributes. So, generating a new custom symbol involves editing this spreadsheet according to the requirements and importing it into the library editing tool in OrCAD Capture.

2 Revision History

Revision Number	Revision Date	Changes	Author
1	5/2/2016	Initial Revision	ND

3 Requirements

The following softwares are required to generate a symbol for OSD3358.

1. Microsoft Excel
2. Cadence OrCAD Capture CIS v10.5 or later

4 Generating Customer Symbol for OSD3358:

- 1) Download the [Excel spreadsheet](#) from Octavo Website (Link). It will look like Figure 4.1.

Column	Row	Pin	PinName	PinNameUnique	Pin Type	Pin Vis	Pin Shape	Pin Grp	Pin Pos	Pin Section	Description
Y	5	Y5	VIN_AC	VIN_AC_Y5	Power	1 Line			Left	A	AC Adapter Input
Y	6	Y6	VIN_AC	VIN_AC_Y6	Power	1 Line			Left	A	AC Adapter Input
Y	8	Y8	VIN_USB	VIN_USB_Y8	Power	1 Line			Left	A	USB Power Input
Y	9	Y9	VIN_USB	VIN_USB_Y9	Power	1 Line			Left	A	USB Power Input
Y	2	Y2	VIN_BAT	VIN_BAT_Y2	Power	1 Line			Left	A	Battery Input
Y	3	Y3	VIN_BAT	VIN_BAT_Y3	Power	1 Line			Left	A	Battery Input
Y	1	Y1	BAT_VOLT	BAT_VOLT	Input	1 Line			Left	A	Battery Voltage Sense Input
W	1	W1	BAT_TEMP	BAT_TEMP	Input	1 Line			Left	A	Temperature Sense Input
C	6	C6	PMIC_POWER_EN	PMIC_POWER_EN	Output	1 Line			Left	A	Should be connected to PMIC_IN_POWER_EN
D	20	D20	PMIC_IN_PB_IN	PMIC_IN_PB_IN	Input	1 Line			Left	A	Power Button input
D	19	D19	PMIC_IN_PWR_EN	PMIC_IN_PWR_EN	Input	1 Line			Left	A	Should be connected to PMIC_POWER_EN
C	5	C5	EXT_WAKEUP	EXT_WAKEUP	Input	1 Line			Left	A	EXT_WAKEUP input
B	18	B18	EXTINTN	EXTINTN	Input	1 Line			Left	A	Should be connected to PMIC_OUT_NINT
A	20	A20	PMIC_OUT_PGOOD	PMIC_OUT_PGOOD	Output	1 Line			Left	A	Should be connected to PWRONRSTn
B	20	B20	PMIC_OUT_LDO_PGOOD	PMIC_OUT_LDO_PGOOD	Output	1 Line			Left	A	Should be connected to RTC_PWRONRSTN
A	19	A19	PMIC_OUT_NWAKEUP	PMIC_OUT_NWAKEUP	Output	1 Line			Left	A	Should be connected to EXT_WAKEUP
B	19	B19	PMIC_OUT_NINT	PMIC_OUT_NINT	Output	1 Line			Left	A	Should be connected to EXTINTN
B	15	B15	PWRONRSTN	PWRONRSTN	Input	1 Line			Left	A	Should be connected to PMIC_OUT_PGOOD
A	10	A10	WARMRSTN	WARMRSTN	Input	1 Line			Left	A	Warm Reset
B	5	B5	RTC_PWRONRSTN	RTC_PWRONRSTN	Input	1 Line			Left	A	Should be connected to PMIC_OUT_LDO_PGOOD
B	4	B4	RTC_KALDO_ENN	RTC_KALDO_ENN	Input	1 Line			Left	A	Should be pulled Low if internal LDO is used to power RTC. Should be pulled high if RTC is powered externally
C	20	C20	PMIC_IN_I2C_SCL	PMIC_IN_I2C_SCL	Input	1 Line			Left	A	Should be connected to I2CO_SCL
C	19	C19	PMIC_IN_I2C_SDA	PMIC_IN_I2C_SDA	Bidirectional	1 Line			Left	A	Should be connected to I2CO_SDA
A	2	A2	VDD_MPU_MON	VDD_MPU_MON	Power	1 Line			Right	B	Connect to PMIC if voltage monitoring is necessary. If not, connect to VDD_MPU. Can also be no connect
W	4	W4	SYS_VOUT	SYS_VOUT_W4	Power	1 Line			Right	A	Can be used to power external circuits
Y	4	Y4	SYS_VOUT	SYS_VOUT_Y4	Power	1 Line			Right	A	Can be used to power external circuits
U	20	U20	SYS_VDD1_3P3V	SYS_VDD1_3P3V_U20	Power	1 Line			Right	A	Dedicated power supply for external circuits
V	20	V20	SYS_VDD1_3P3V	SYS_VDD1_3P3V_V20	Power	1 Line			Right	A	Dedicated power supply for external circuits

Figure 4.1 Example Spreadsheet that can be imported to OrCAD Capture

- 2) The file has 2 sheets. Sheet 1 (OSD3358_RevB_pkg) contains pin information classified according to the location of the pin on the physical layout. All the pins in one column are grouped as a single section. Thus, a symbol generated by this spreadsheet will contain 20 parts.
- 3) Sheet 2 (OSD3358_RevB_Pkg_cstm) contains an example of a custom configuration with 12 sections. This can be used directly or changed accordingly.
- 4) Column C of each of the sheets contains the pin number associated with the pin in the OSD3358 datasheet.
- 5) Column D contains the associated pin name same as in the OSD3358 datasheet. Using this column for pin names will generate a warning in OrCAD for duplicate pin names.
- 6) Column E contains unique pin names. Using this column for pin names will not generate a warning in OrCAD.
- 7) Pin Type (F), Pin Visibility (G), Pin Shape (H), Pin Group (I), Pin Position (J) and Pin Section (K) contain the corresponding information required for OrCAD Capture library editor to generate a symbol.
- 8) Columns L and M are for information purposes only. L provides a short description of the pin and M contains multiplexing information.

- 9) Columns I, J and K can be edited to specify the pin grouping, the side on which it appears on the part and the section in which it will appear.
- 10) After completing the edits, the spreadsheet is now ready to be imported into OrCAD Capture symbol generation tool.
- 11) If you want to create the symbol in a new library, Open OrCAD Capture and create a new library.

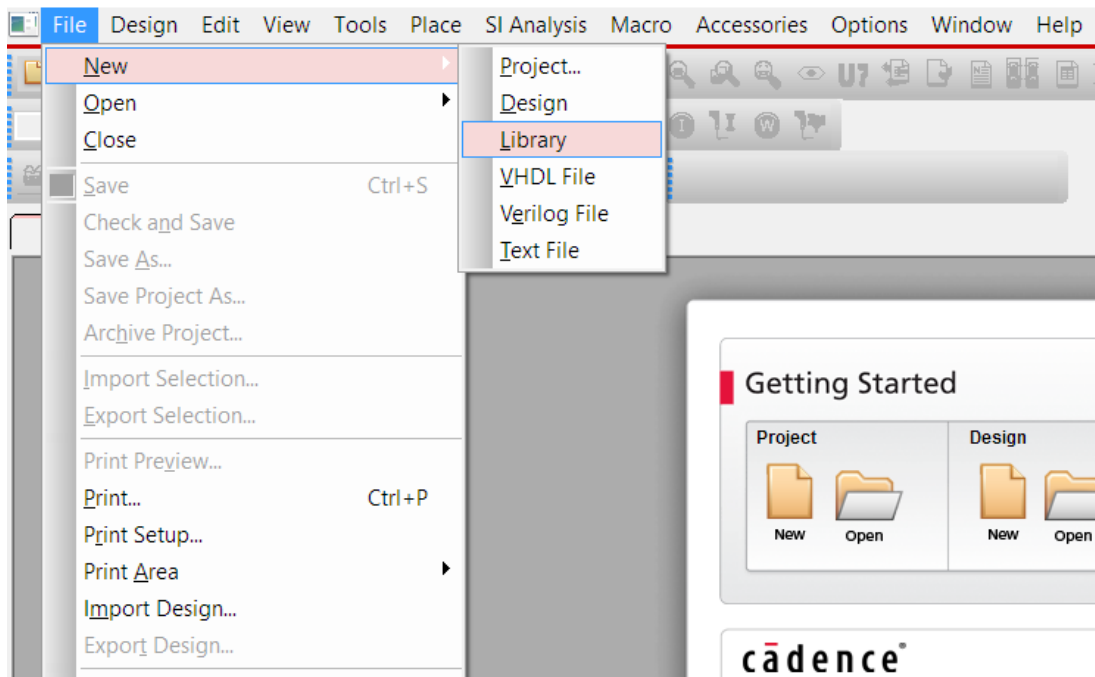


Figure 4.2 Creating a new library

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12) Right click on the library name and click on New Part From Spreadsheet.

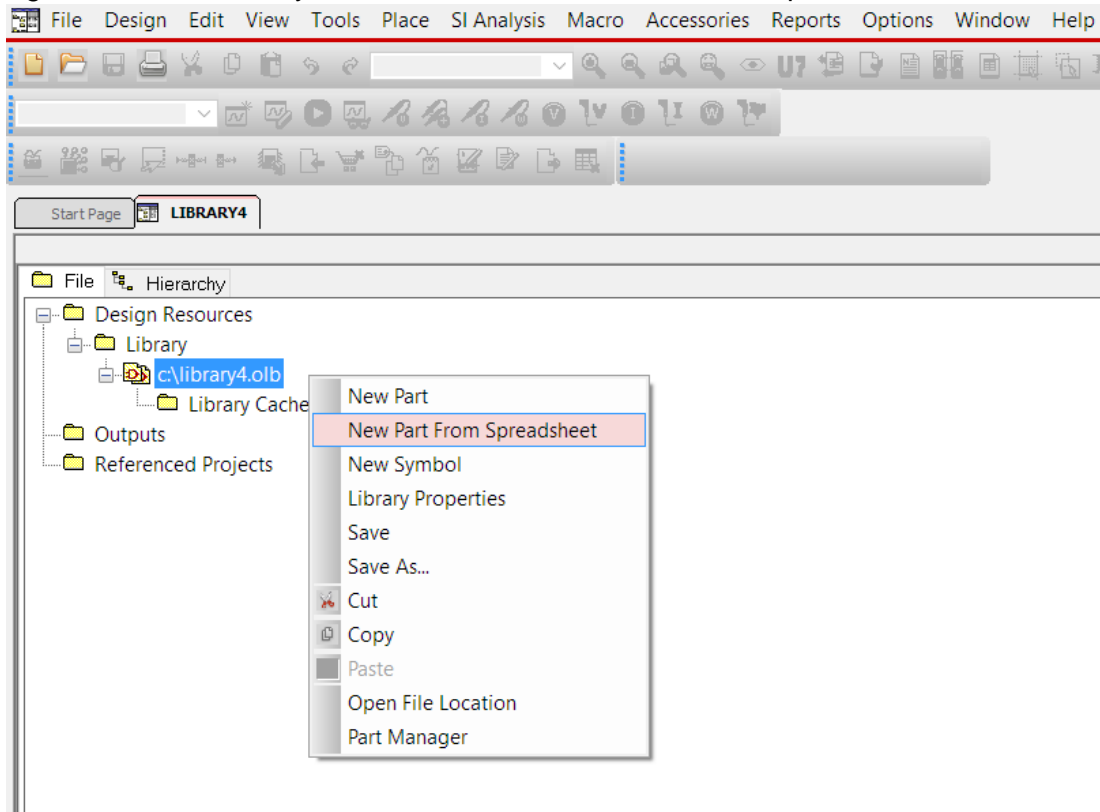
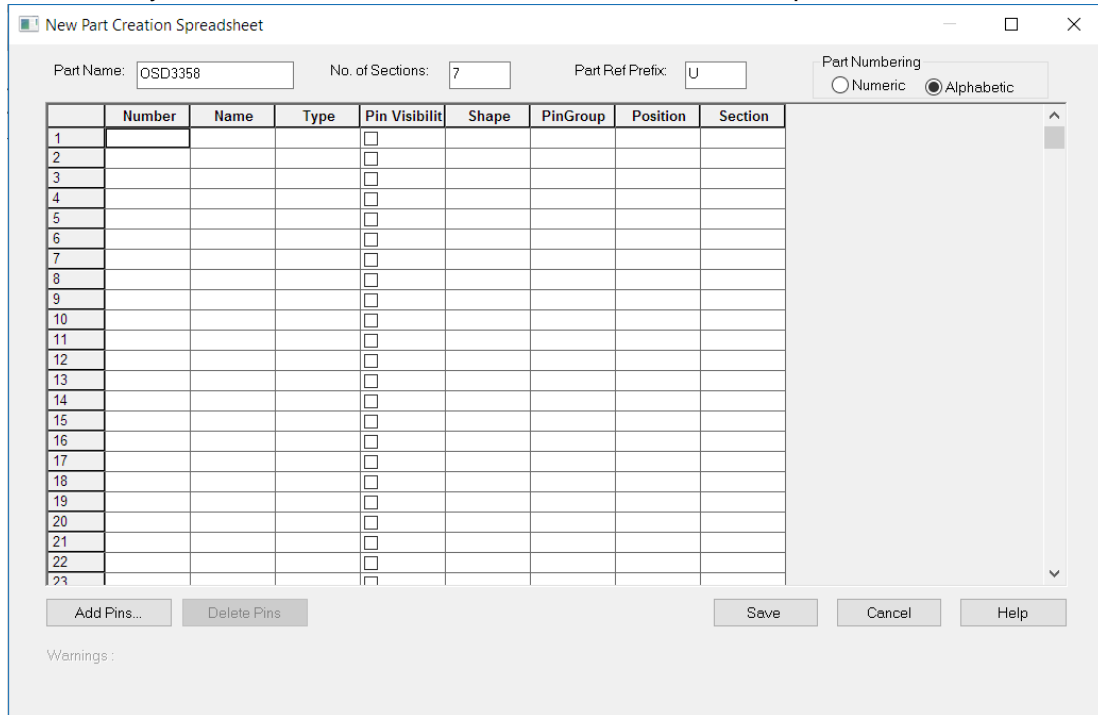


Figure 4.3 Creating a symbol from Spreadsheet

13) Enter the symbol name and the number of sections on the top.



New Part Creation Spreadsheet

Part Name: No. of Sections: Part Ref Prefix:

Part Numbering
 Numeric Alphabetic

	Number	Name	Type	Pin Visibility	Shape	PinGroup	Position	Section
1				<input type="checkbox"/>				
2				<input type="checkbox"/>				
3				<input type="checkbox"/>				
4				<input type="checkbox"/>				
5				<input type="checkbox"/>				
6				<input type="checkbox"/>				
7				<input type="checkbox"/>				
8				<input type="checkbox"/>				
9				<input type="checkbox"/>				
10				<input type="checkbox"/>				
11				<input type="checkbox"/>				
12				<input type="checkbox"/>				
13				<input type="checkbox"/>				
14				<input type="checkbox"/>				
15				<input type="checkbox"/>				
16				<input type="checkbox"/>				
17				<input type="checkbox"/>				
18				<input type="checkbox"/>				
19				<input type="checkbox"/>				
20				<input type="checkbox"/>				
21				<input type="checkbox"/>				
22				<input type="checkbox"/>				
23				<input type="checkbox"/>				

Add Pins... Delete Pins Save Cancel Help

Warnings :

Figure 4.4 Configuring the new symbol

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14) Copy and paste the corresponding columns from the Spreadsheet and click save.

New Part Creation Spreadsheet

Part Name: No. of Sections: Part Ref Prefix: Part Numbering: Numeric Alphabetic

	Number	Name	Type	Pin Visibility	Shape	PinGroup	Position	Section
1	Y6	VIN_AC	Power	<input checked="" type="checkbox"/>	Line		Left	A
2	Y5	VIN_AC	Power	<input checked="" type="checkbox"/>	Line		Left	A
3	Y9	VIN_USB	Power	<input checked="" type="checkbox"/>	Line		Left	A
4	Y8	VIN_USB	Power	<input checked="" type="checkbox"/>	Line		Left	A
5	Y3	VIN_BAT	Power	<input checked="" type="checkbox"/>	Line		Left	A
6	Y2	VIN_BAT	Power	<input checked="" type="checkbox"/>	Line		Left	A
7	W1	BAT_TEMP	Input	<input checked="" type="checkbox"/>	Line		Left	A
8	C6	PMIC_POV	Output	<input checked="" type="checkbox"/>	Line		Left	A
9	D20	PMIC_IN_P	Input	<input checked="" type="checkbox"/>	Line		Left	A
10	D19	PMIC_IN_P	Input	<input checked="" type="checkbox"/>	Line		Left	A
11	C5	EXT_WAKE	Input	<input checked="" type="checkbox"/>	Line		Left	B
12	B18	EXTINTN	Bidirectio	<input checked="" type="checkbox"/>	Line		Left	B
13	A20	PMIC_OUT_	Output	<input checked="" type="checkbox"/>	Line		Right	A
14	B20	PMIC_OUT_	Output	<input checked="" type="checkbox"/>	Line		Right	A
15	B19	PMIC_OUT_	Output	<input checked="" type="checkbox"/>	Line		Right	A
16	A19	PMIC_OUT_	Output	<input checked="" type="checkbox"/>	Line		Right	A
17	B5	RTC_PWRO	Input	<input checked="" type="checkbox"/>	Line		Right	A
18	B4	RTC_KALD	Input	<input checked="" type="checkbox"/>	Line		Right	A
19	C20	PMIC_IN_I2	Input	<input checked="" type="checkbox"/>	Line		Left	A
20	C19	PMIC_IN_I2	Bidirectio	<input checked="" type="checkbox"/>	Line		Left	A
21	W4	SYS_VOUT	Output	<input checked="" type="checkbox"/>	Line		Right	A
22	Y11	SYS_VDD2	Output	<input checked="" type="checkbox"/>	Line		Right	A
23	Y4	SYS_VOUT	Output	<input checked="" type="checkbox"/>	Line		Right	A

Add Pins... Delete Pins Save Cancel Help

Warnings :

Figure 4.5 Filling out the pin information

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15) The package symbol has been created and is ready to use. Double click on the symbol in the library to view the part.

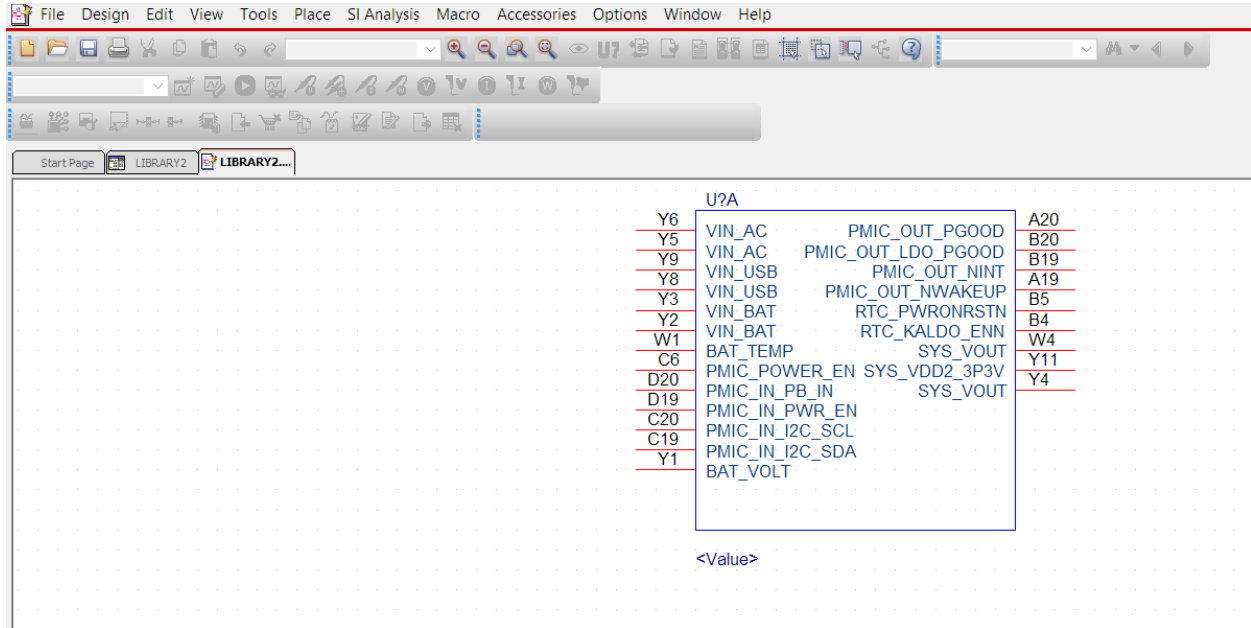


Figure 4.6: Part A of the package symbol

16) The whole package can be viewed by clicking on view and selecting Package. Each part can be used separately in a schematic capture.

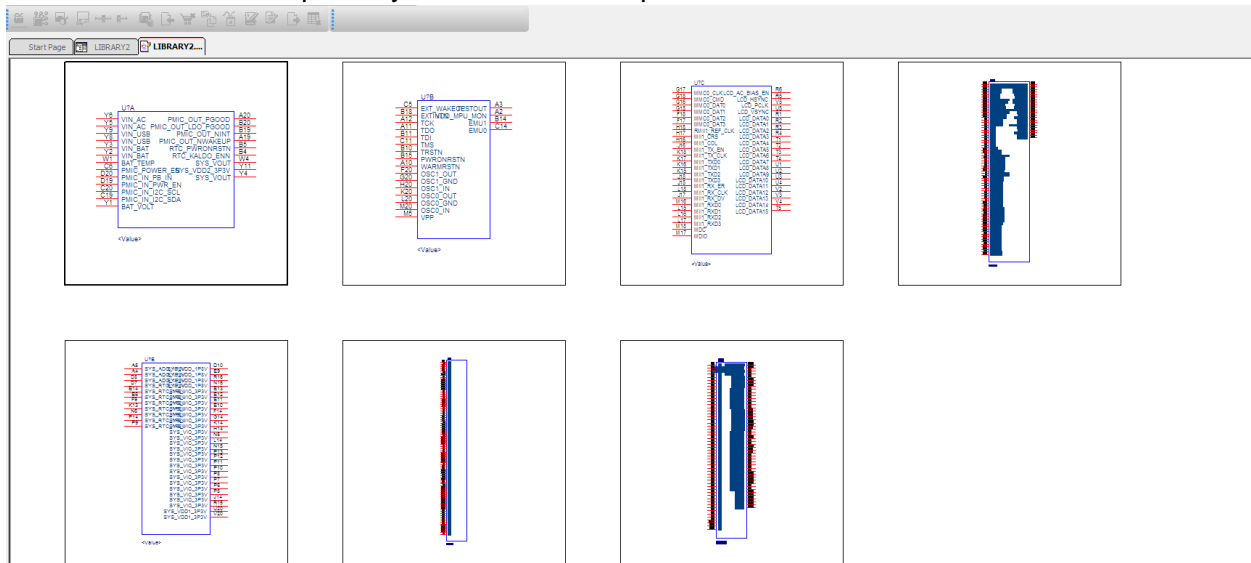


Figure 4.7 Package Symbols

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