# Product Info 「BOM Master」

BOM management software for PADS Logic

CAD PRODUCTS Co.,Ltd.

www.cadpro.co.jp

BOM Master is the system for circuit diagrams of PADS Logic to correspond completely with BOM on mounting. BOM outputted from PADS Logic often doesn't correspond with parts numbers on circuit diagrams because of the deadline, stock, etc on mounting process. BOM Master gives BOM on mounting process for PADS Logic (circuit diagrams), and enables BOM outputted from circuit diagrams to be used for arranging for mounting parts.
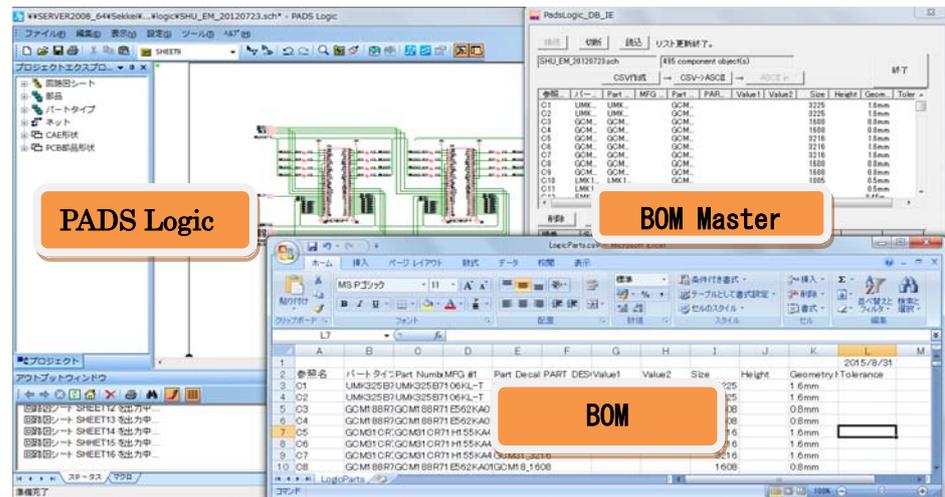
The system can make realize that circuit diagrams correspond with parts arrange list perfectly.
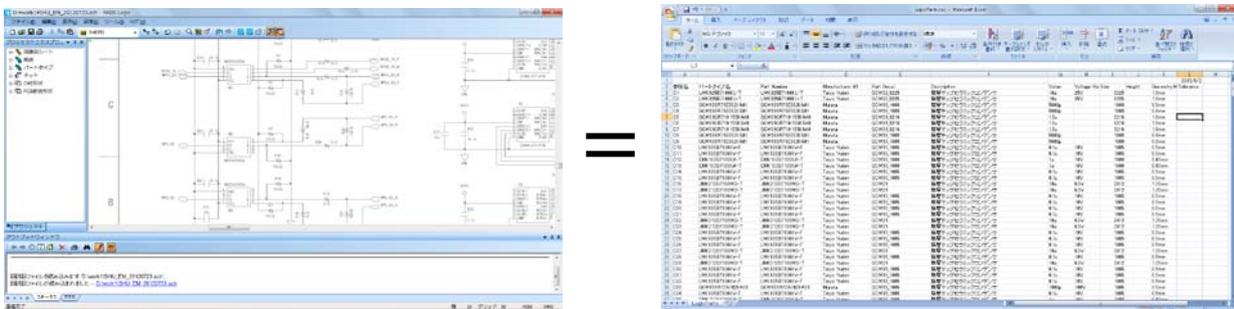
If you do revision management for circuit diagrams, you will get perfect BOM for arranging.

Background of development

We often hear opinions like these.

❏ Parts ordered were different from circuit diagrams because of differences between circuit diagrams and BOM.

    Several BOMs existed for one circuit diagram.

    Ex. Circuit diagrams ABC ⇒   rot No1 Rev1 BOM

                                rot No2 Rev2 BOM

❏ When parts was ordered after circuit diagrams completed, changing BOM was needed to meet deadline.

    Feedback to circuit diagrams is too difficult because several BOMs exist for one circuit diagram.

❏ I thought I used stock standard parts, but I actually used standard parts out of stock. So I needed to use substitute parts and several BOMs were made for one circuit diagram.

This software is effective for the person designs circuit in this flow.

1) Designing parts like resistance, condenser, etc without numbering parts first and reflecting in the circuit diagram.

The Part type name of the resistance of the right diagram

 is [R_10K].

2) Designing with using former circuit diagrams and cut&paste
, and reflecting.
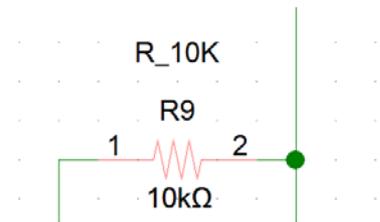
3) Choosing parts with the information of inventory-mounting department of purchasing department or mounting corporation, and reflecting.

[Parts list decided on in mounting department]

2	Ref	PartType	Part Number	Manufacturer #1	Part Decal	Description	Value	Voltage Ra	Size	Geometry.F	Tolerance
192	R6	MCR01 J103	MCR01MZPJ103	Rohm	MCR01_1005	Rect chip resistor	10kΩ		1005	0.35mm	
193	R7	MCR01 J103	MCR01MZPJ103	Rohm	MCR01_1005	Rect chip resistor	10kΩ		1005	0.35mm	
194	R8	MCR01 J103	MCR01MZPJ103	Rohm	MCR01_1005	Rect chip resistor	10kΩ		1005	0.35mm	
195	R9	MCR01 J103	MCR01MZPJ103	Rohm	MCR01_1005	Rect chip resistor	10kΩ	0.063W	1005	0.35mm	
196	R10	MCR01 J103	MCR01MZPJ103	Rohm	MCR01_1005	Rect chip resistor	10kΩ	0.063W	1005	0.35mm	

4) Several BOMs existed for one circuit diagram.

    If re-designing products is needed a few years later, much time to reflect BOMs in circuit diagrams.

5) Other cases

    When designing circuit diagrams, data were inputted while data in the materials department were referred to.

    But parts were out of stock when circuits were completed and parts were about to be ordered. So other parts were needed.
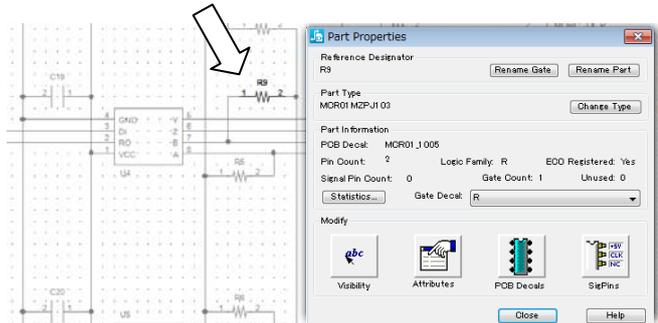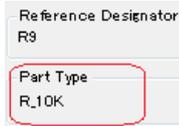
    After then, this change was reflected in circuit diagrams.

> BOM Master changes designing circuit diagrams like this.

Point 1. The rule of first designing circuit diagrams

① You can set resistance or condenser
to R, C, etc.

　In this diagram, part type of
resistance is set to R_10K

　　Caution) PADS Logic is changed with reference names, so reference names can't be changed on BOM.

② A part type name is decided on in types and forms of parts.

　　Part type names and PCB forms can be changed by BOM Master.

④ Constants can be changed. It is better to change in inputting circuits to make it easy to select in making a list of mounting parts.

Point 2. The rule of making a list of mounting parts

① On the list of mounting parts, parts number is order number. BOM is created with this item.

　　Part type 　　　= a parts name without considering delivery states　　Ex) MCR01J103

　　Parts number　　= using taping parts　　　　　　　Ex) MCR01MZPJ103
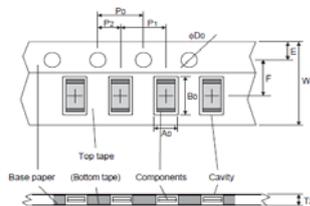
Registering as parts of PADS　　　Parts code used in arranging for parts (delivered with a reel)

2	Ref	PartType	Part Number	Manufacturer #1
192	R6	MCR01J103	MCR01MZPJ103	Rohm
193	R7	MCR01J103	MCR01MZPJ103	Rohm
194	R8	MCR01J103	MCR01MZPJ103	Rohm

Quoted from ロ一ム社 data sheets

●Tape Dimensions

■ Paper Tape

(Unit : mm)

Part No.	Type Code	W	F	E	A0	B0
MCR004	YZP	8.0±0.2	3.5±0.05	1.75±0.1	0.24±0.03	0.45±0.03
MCR006	YZP	8.0±0.2	3.5±0.05	1.75±0.1	0.38±0.03	0.68±0.03
MCR01	MZP	8.0±0.3	3.5±0.05	1.75±0.1	0.7±0.1	1.2±0.1
MCR03	EZP	8.0±0.3	3.5±0.05	1.75±0.1	1.1±0.1	1.9±0.1
MCR10	EZP	8.0±0.3	3.5±0.05	1.75±0.1	$1.65^{+0.2}_{-0.1}$	$2.4^{+0.2}_{-0.1}$
MCR18	EZP	8.0±0.3	3.5±0.05	1.75±0.1	$1.95^{+0.1}_{-0.05}$	$3.5^{+0.15}_{-0.05}$

　BOM Master can be reflected in from BOM including complete part types and PCB forms.

Maker names, prices, etc were kept as attributes of symbols. Only prices change each time, so it is possible to change the function (for example, getting from databases). But customization cost is needed separately.
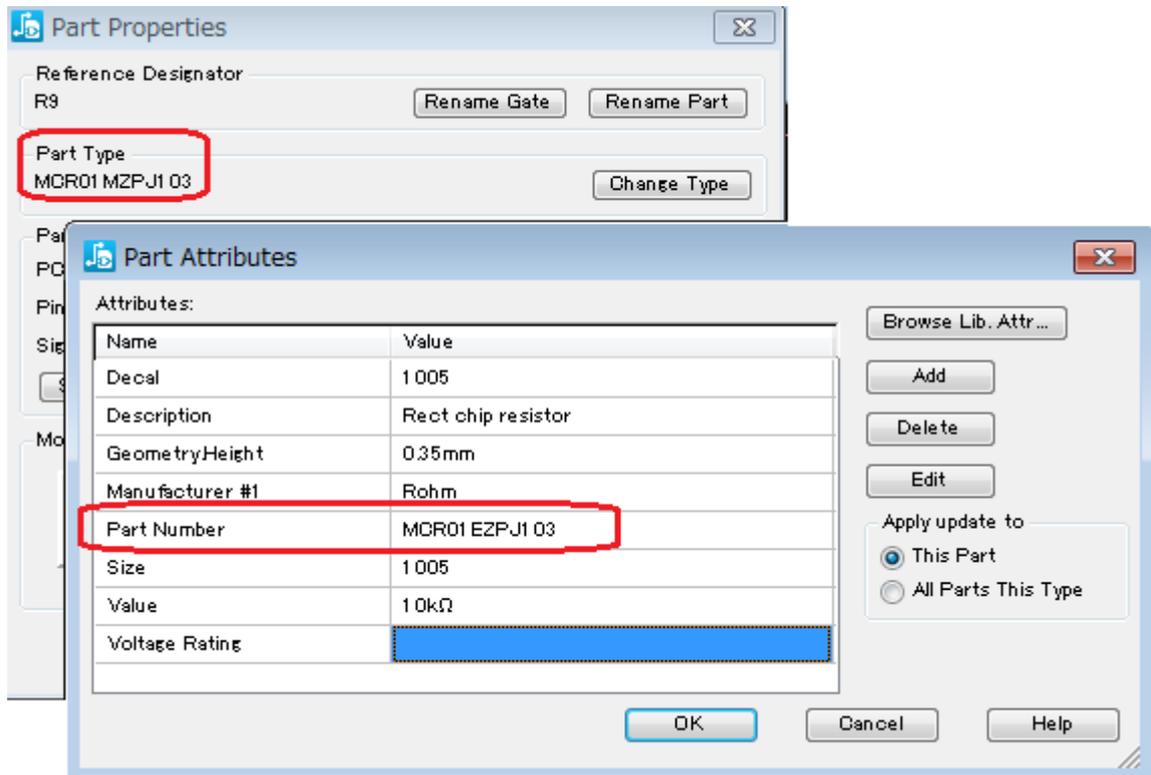
Point 3. It is possible for users to set attributes of symbols.

Users can set attributes of symbols using definition files of attribute names.

Hint)

It is possible to change attribute names at once using this definition tables properly.

Ex)

Parts names for delivery on former circuit diagrams 「Parts Name」

Parts names for delivery decided on newly 「Delivery parts number」

Designing circuit diagrams

Design a part type with only a type of symbols. A type of symbol is a name, that is [R] for resistance and [C] for condenser.

A function part such as IC is made as a name of the part. It is best to make from symbols to PCB forms.

This method saves a lot of time of inputting circuit diagrams because it is not necessary to pay attention to parts number.
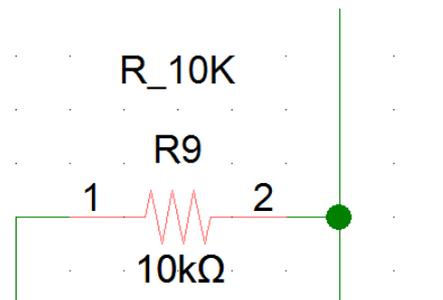
designing BOM for mounting from temporary BOM outputted from BOM Master

Edit with Microsoft Excel.

All except reference names can be changed. It is possible to add items and to change item names.

	Ref	PartType	Part Number	Manufactu	Part Decal	Description	Value	Voltage Ra	Size	Height	Geometry.Height
1											
2											
177	R5	R_10K			1608		10kΩ				0.55mm
178	R6	R_10K			1608		10kΩ				0.55mm
179	R7	R_10K			1608		10kΩ				0.55mm
180	R8	R_10K			1608		10kΩ				0.55mm
181	R9	R_10K			1608		10kΩ				0.55mm
182	R10	R_10K			1608		10kΩ				0.55mm
183	R11	R_10K			1608		10kΩ				0.55mm

Circuits are designed as part type names of each type.
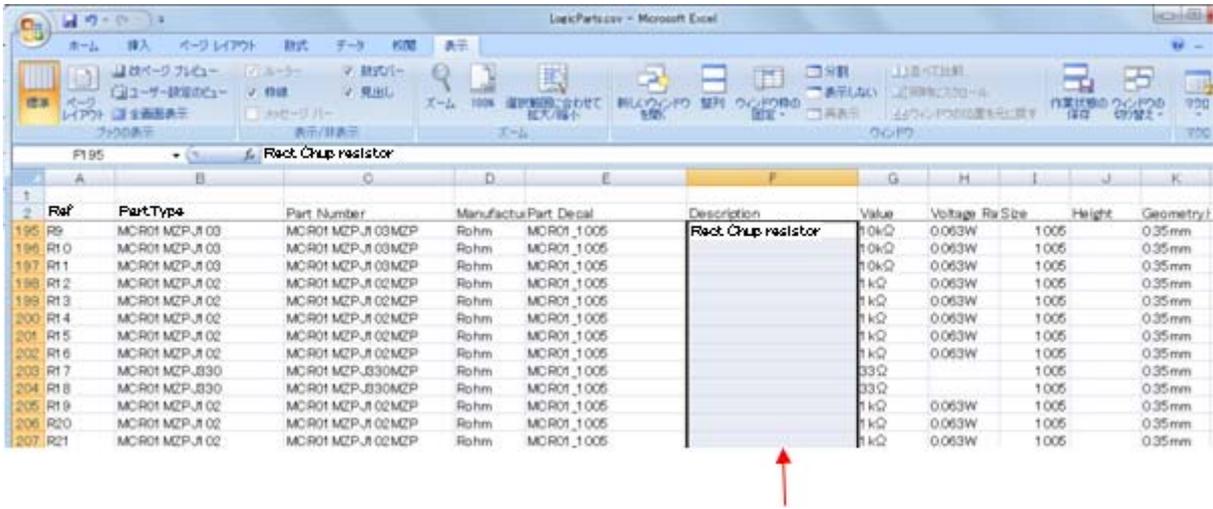
Items of manufacturer names, parts names, etc are empty.

Completing a parts list inputting stock, price, deadline

Input stock, price, deadline and complete a parts list for mounting.

Copy&paste is enabled.

We can accept an order to design programs as optional software which can design make a list of parts comparing with the house inventory.
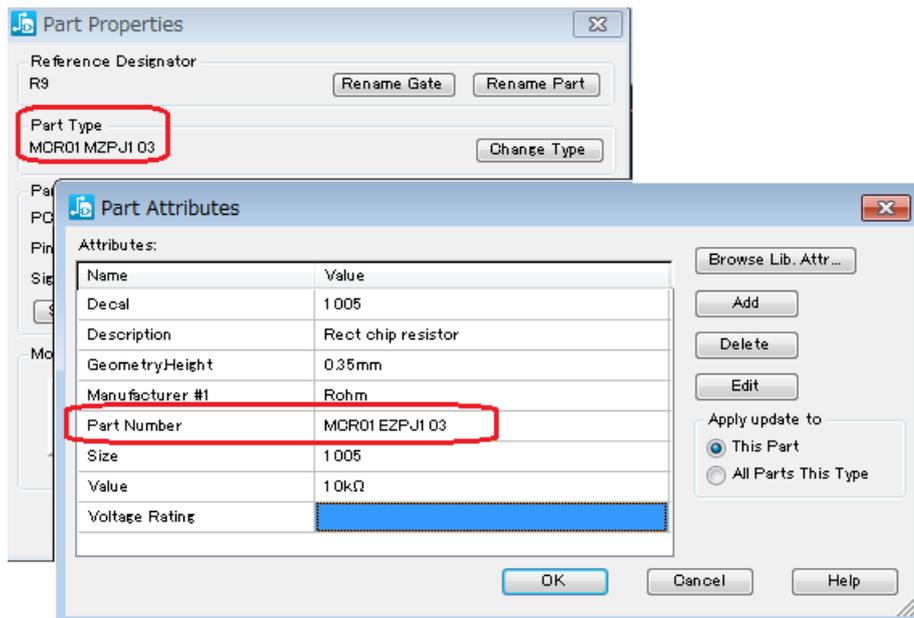
## Giving feedback to circuit diagrams with BOM Master

BOM Master changes data of PADS Logic in parts list for mounting.

after feedback, BOM outputted from PADS Logic can be used for arranging for mounting parts.
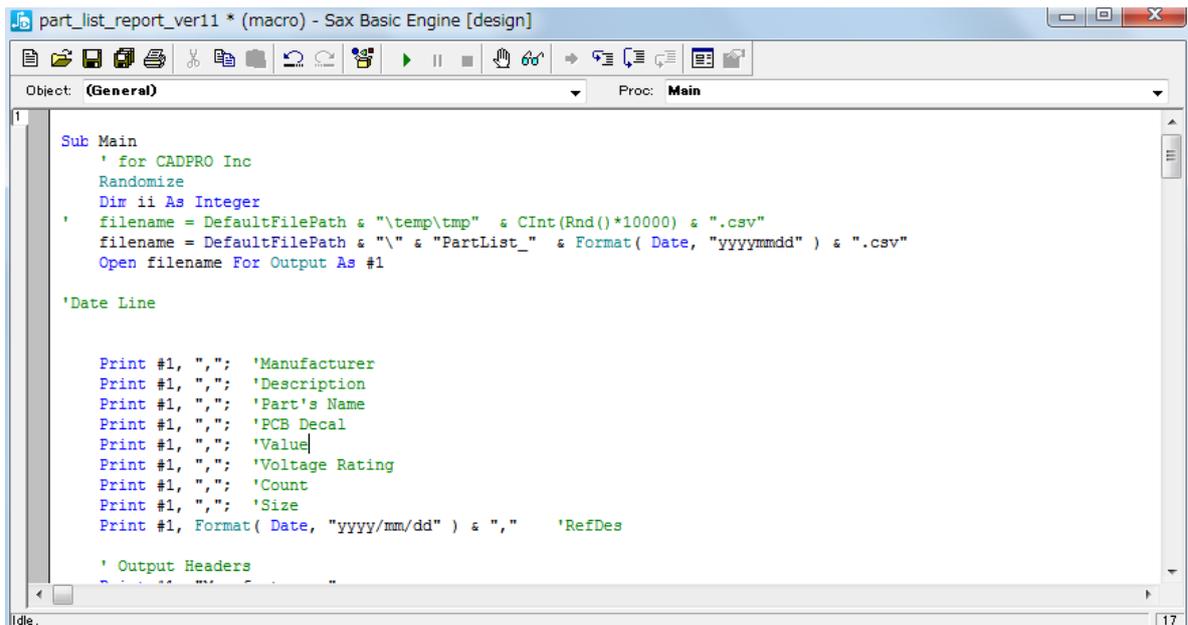
Outputting BOM which it is possible to arrange for parts with scripts of PADS Logic

Ii is possible to output in the format for each company with scripts of PADS Logic.
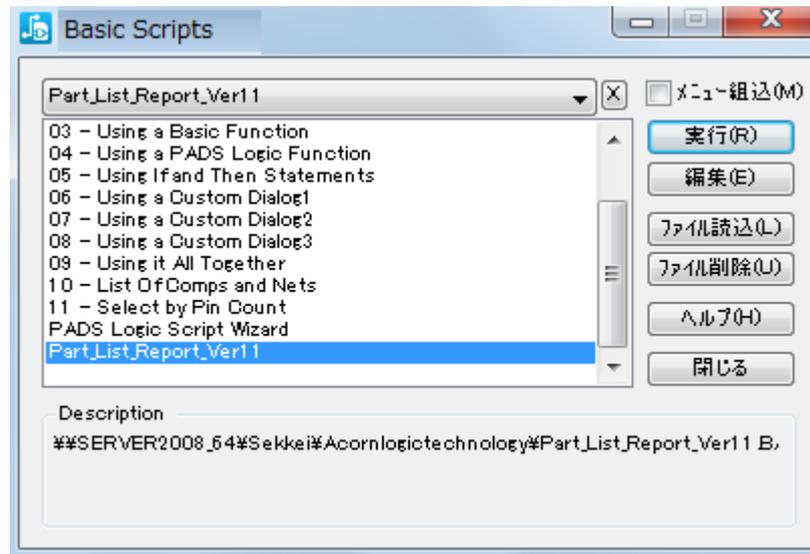
Ex) PADS Logic script

We can accept an order to design a script.

Ex) A list of mounting parts outputted by scripts

	A	B	C
1			
2	Manufacturer	Description	Part Number
24	Rohm	Rect chip resistor	MCR01MZPJ103
25	Rohm	Rect chip resistor	MCR01MZPJ102
26	Rohm	Rect chip resistor	MCR01MZPJ330

～

D	E	F	G	H	I	J	K
					2015/9/2		
PCB Decal	Value	Voltage	Size	Qty	Ref		
MCR01_1005	10kΩ	0.063W	1005	8	R4 R5 R6 R7 R8 R9 R10 R11		
MCR01_1005	1kΩ	0.063W	1005	46	R12 R13 R14 R15 R16 R19 R20 F		
MCR01_1005	33Ω	0.063W	1005	43	R17 R18 R23 R24 R68 R69 R72 F		

It is possible to search substitute parts based on information such as type, number, constant, resisting pressure, error, size, etc.

BOM Master can reflect changing parts on final mounting stage in PADS Logic easily.

We can accept an order to design programs such as comparing circuit diagrams with BOM.