

Product Manual

EMS requirement how to interpret Kollmorgen PCBA BOMs

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Template name Template Rev.Ver 1.0

Contents

1	PURPOSE	2
2	SCOPE	2
3	EMS INTERPRETATION GUIDE OF PCBA BOM	2
3.1	General about Kollmorgen PCBA BOM columns	2
3.2	BOM Type	2
3.3	Name	2
3.4	Rev	2
3.5	Qty	3
3.6	Find number	3
3.7	Type	3
3.8	UOM	3
3.9	Description	3
3.9.1	General	3
3.9.2	Footprint	3
3.9.3	Symbol name	4
3.10	RoHS	4
3.11	Drawing	4
3.12	Manufacturer	4
3.13	Manufacturer's part number	5
3.13.1	"Open-source" is stated (or part number is missing):	5
3.13.2	All other parts	5
4	REFERENCES	5
5	DOCUMENT REVISION & DEFINITIONS	5
5.1	Revision history	5
5.2	Definitions	5
5.3	Abbreviation	6

1 Purpose

This document shall ensure that EMS understands our BOMs correctly. It shall be communicated with EMS when sending a BOM.

2 Scope

This document describes how to understand part columns in a Kollmorgen BOM and what is allowed to be sourced by EMS.

3 EMS interpretation guide of PCBA BOM

3.1 General about Kollmorgen PCBA BOM columns

A part is characterized by a set of attributes. The attributes for a specific part depends on the type (resistor, capacitor, screws etc.) and is defined by the PLM system. The appearance of attributes in BOM depends on part type and if we considered the part as unique, custom or standard part. Details how to act on each column is described in chapter 3.2 to 3.13.

3.2 BOM Type

Original

If no alternate or Substitute part are stated, this is the only part that is allowed.

Alternate

An Alternate Part is a component that is a suitable replacement for another part in every assembly in which the original part occurs.

For example, Widget B is an alternate part for Widget A only if a manufacturer can use Widget B instead of the specified part (Widget A) across all products in which Widget A appears. (Note that you cannot assume that Widget A is also an alternate part for Widget B.) Widget B serves the same form, fit, and function in all products as Widget A does. Companies use alternate parts when multiple vendors can supply parts that serve the identical function and fit.

Substitute

A substitute part is a component that is a suitable replacement for another part in only one assembly in which the original part occurs

For example, Widget B is a substitute part for Widget A if it can replace Widget A in one assembly but not another. (Note that you cannot assume that Widget B is also a substitute part for Widget A.) Substitute parts do not serve the same form, fit, and function across all its assemblies.

3.3 Name

Kollmorgen part name is stated here. The uniqueness of a part can only be stated with name and Revision (see chapter below).

3.4 Rev

For Kollmorgen to handle revisions of parts, this number is used. Any change on the part definition in PLM system, results in a new revision. All these changes are controlled by our ECR/ECO process. Revision number must always be considered together with Kollmorgen part name.

3.5 Qty

Quantity of the parts used in this BOM. Unit of measure for this field is described in column (UOM).

3.6 Find number

Used for Mechanical part. This number states position of part in mechanical drawing.

3.7 Type

This field states the component type. This type may also appear in description field.

3.8 UOM

UOM stands for Unit of Measure, and is connected with the quantity field. UOM can be stated in: Volym, weight, length, each.

3.9 Description

3.9.1 General

For electrical part types, some attributes are automatically filled into the description field, as seen on below example. Depending on the type of part, different attributes are filled in to the description field, in order to make the component description unique and understandable. Most attributes written in the description field are self explaining for electrical parts, but the following subchapters will describe our way of handling footprint (package type) and symbol name.

Type Specific Attribute

Foot Print(R)	09MD68P11-100	Max Temp	155	Min Temp	-55
Mounting	THD	Power Rating	3W	Res Technology	MF
Resistance	12R	ROHS Compliant	Yes	Symbol Name	PRO3
Tolerance	5%				

The marked attributes above are then shown in the description of the part.

Name	2P110003
Type	Resistors
Revision	1
Description	RES 12R 3W 5% THD 09MD68P11-100 PRO3

3.9.2 Footprint

Semiconductors:

All semiconductors that have a JEDEC no and trade name of footprint is entered in the description field. If the JEDEC no does not exist, the trade name or manufacturer's name for the part is entered. Below our prioritized naming convention. Highest number is first preferred choice.

1. JEDEC no + trade name of footprint. Example: "TO-263 (D2 PAK)".
2. Trade name of the footprint. Example "SOL16".
3. The manufacturer's name of the footprint. Example: "PrimePack".
4. If data is missing leave the field empty.

Passive Components:

If the components have a common trade name of the footprint, this is entered. Example "0805".

If the component doesn't have a common trade name the physical quantity is entered. Example "cc10 L25 W12 h10".

Exceptions:

The foot print field is blank for:

- Transformers and inductors (the foot print is not used in the description field)
- For components that are not SMD or THD.

3.9.3 Symbol name

In general, the trade name of the component is entered. The trade name is kept relatively short (about 10 characters) as symbol name is printed on the schematic drawing. The trade name is not unique for a manufacturer.

Example: 74HC00

3.10 RoHS

The RoHS attribute states whether the part is RoHS compliant or not (Yes/No). RoHS compliant means that the part does not contain significant amount of hazardous substances such as Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent chromium (chromium xxx or Cr6+), Polybrominated biphenyls (PBB), Polybrominated diphenyl ether (PBDE), etc, see [Ref 1].

The table below describes how to set and interpret the RoHS attribute.

Attribute	Value	Meaning
RoHS Compliant	Yes	The part exists in a RoHS compliant version. EMS must use a RoHS compliant part (there may be both types on the market).
RoHS Compliant	No	No RoHS compliant part exists on the market or the RoHS compliant variant of the part can not be used in the products (e.g. BGA with soldering problems). EMS may use a RoHS compliant part if the soldering process is such that the quality can be guaranteed, but Kollmorgen must be informed.

3.11 Drawing

This column states the name of a Kollmorgen designed drawing belonging to the part.

3.12 Manufacturer

Used for components those are not open source (see 3.13). The stated manufacturer is mandatory when sourcing this part. When a manufacturer is stated, no other manufacturers are allowed. But there may be several manufacturers stated.

3.13 Manufacturer's part number

3.13.1 "Open-source" is stated (or part number is missing):

If the manufacturer's part number says "open source" or field is empty, the part is defined as an open source component

Example is a standard resistor or capacitor with no unique characteristics. In this case EMS may source any component that fulfils the requirement stated by attributes in description filed.

3.13.2 All other parts

At least one (1) complete "Manufacturing part no" for each approved manufacturer is specified. Package size shall be included in the "Manufacturing part no". EMS may source on other "Manufacturing part no" if and only if this other number differs only on package size. Sourcing of all other "Manufacturing part no" is prohibited

4 References

#.	Name	Number/Ref.	Rev
[Ref 1]	RoHS directive	2002/95/EC(EG)	
[Ref 2]			
[Ref 3]			
[Ref 4]			
[Ref 5]			
[Ref 6]			

5 Document Revision & Definitions

5.1 Revision history

Revision No	Revision Change	Date
Rev 1	Based on TG_078 rev5 definitions.	2011-02-02
Rev 2		
Rev 3		
Rev 4		

5.2 Definitions

Term	Definition

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5.3 Abbreviation

Abbreviation	Description
PLM	Product Lifecycle Management.
PDM	Product Data Management.
BOM	Bill Of Material in PLM system.
EMS	Electronic Manufacturing Services
RoHS	Restriction of the use of certain Hazardous Substances in electrical and electronic equipment (EU directive 2002/95/EC).
ECR	Engineering Change Request
ECO	Engineering Change Order
PCBA	Printed Circuit Board Assembly