

1. Overview

These M10D modules were designed for small size device application. Magconn is suited for a wide range of mobile devices as an innovative CHARGING and DATA SYNC solution with simple and user friendly interface.

2. Feature

- Magnetic connector technology
- Conductive wireless connection
- Cost-effective technology
- High speed data sync (meet USB 2.0 standard)
- User friendly design – Don't need to plug in and out. Just attach and detach.
- High charging efficiency (more than 97%)_exclude cable loss
- Wide application – mobile device, LED lamp, wearable device, high current device, waterproof device, IoT interface etc.
- Small size
- Suitable on waterproof solution

3. Product Information

	Part number	Description
RX connector	M10DC-RXC2-07B	Magconn RX 4ring 13.6pi x 0.7T, circle sub, black
RX connector	M10DC-RXC2-07W	Magconn RX 4ring 13.6pi x 0.7T, circle sub, white
TX connector	M21-TX23C2B	Magconn TX 6pin 13.3pi x 2.3T, black
TX connector	M21-TX23C2W	Magconn TX 6pin 13.3pi x 2.3T, white
TX connector	M21-TX33C2B	Magconn TX 6pin 13.3pi x 3.3T, black (available from July)
TX connector	M21-TX33C2W	Magconn TX 6pin 13.3pi x 3.3T, white (available from July)

4. Revision History

No	Date	Issued	Checked	Approved	Summary
0.1	2016.11.15			SMKIM	Initial version
0.2	2017.05.19			SMKIM	Remove product from spec

5. Specification of RX module

5.1. Part number

M10DC-RXC2-07

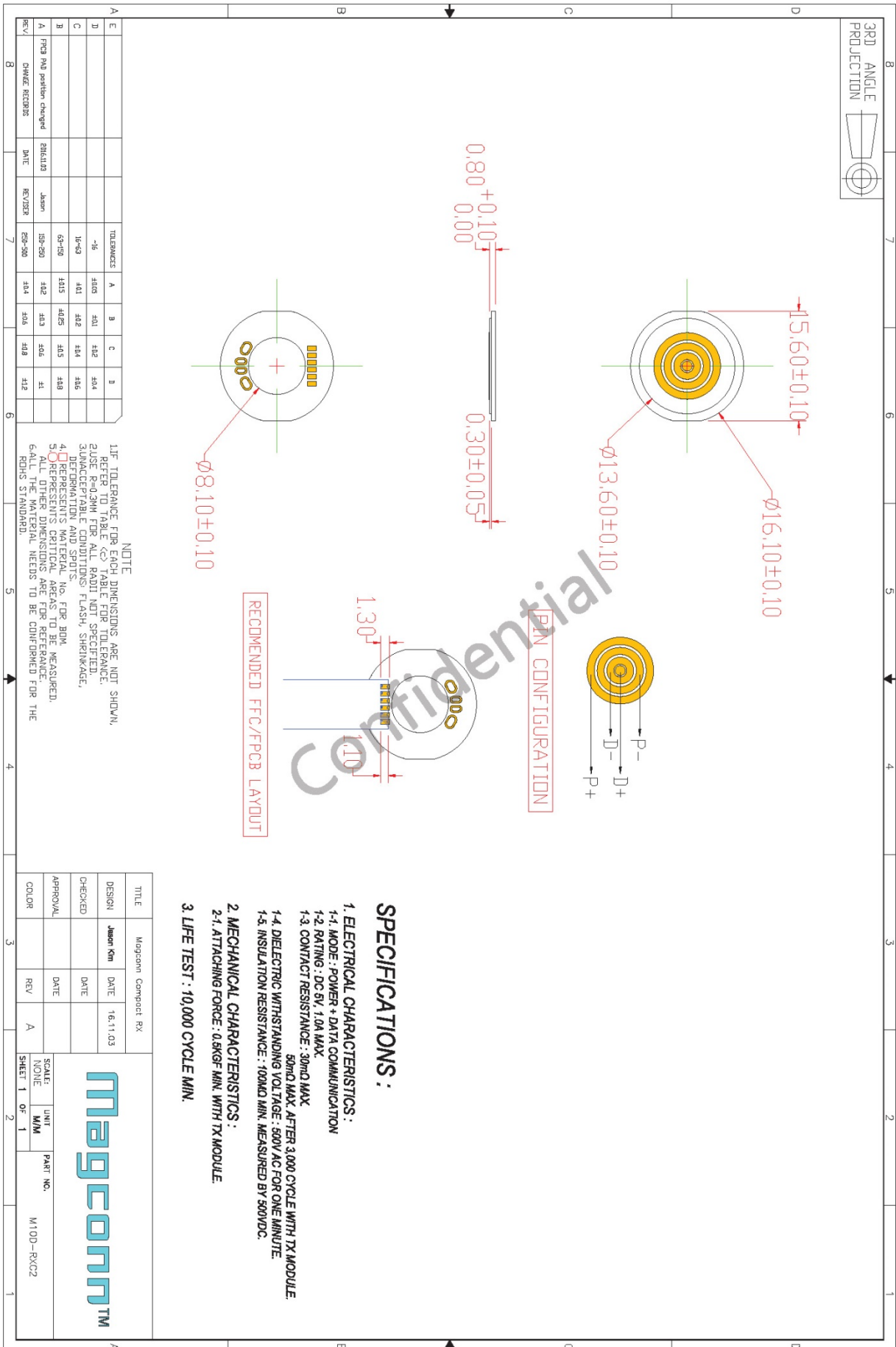
5.2. Specification

Item	Rated Value
Operating Temperature range	0°C ~ 50°C
Operating Humidity range	20 ~ 80% RH non-condensing
Storage Temperature range	-20°C ~ 70°C
Storage Humidity range	10 ~ 95% RH non-condensing
Recommended Storage Temperature and	15°C ~ 30°C / 40 ~ 60%
Rated voltage	5VDC
Rated current	1.5A max / ring
Insulation resistance	100MΩ min. / 500VDC
Electrostatic discharge	+/-8KVDC air discharge, +/-4KVDC contact discharge
RX thickness	0.8mm +0.1mm, - 0mm
Contact ring count	4ring
Attachment/removal life	5,000 times (with TX connector)
Product weight	0.3g +/- 0.1g
Module Color	Black / White

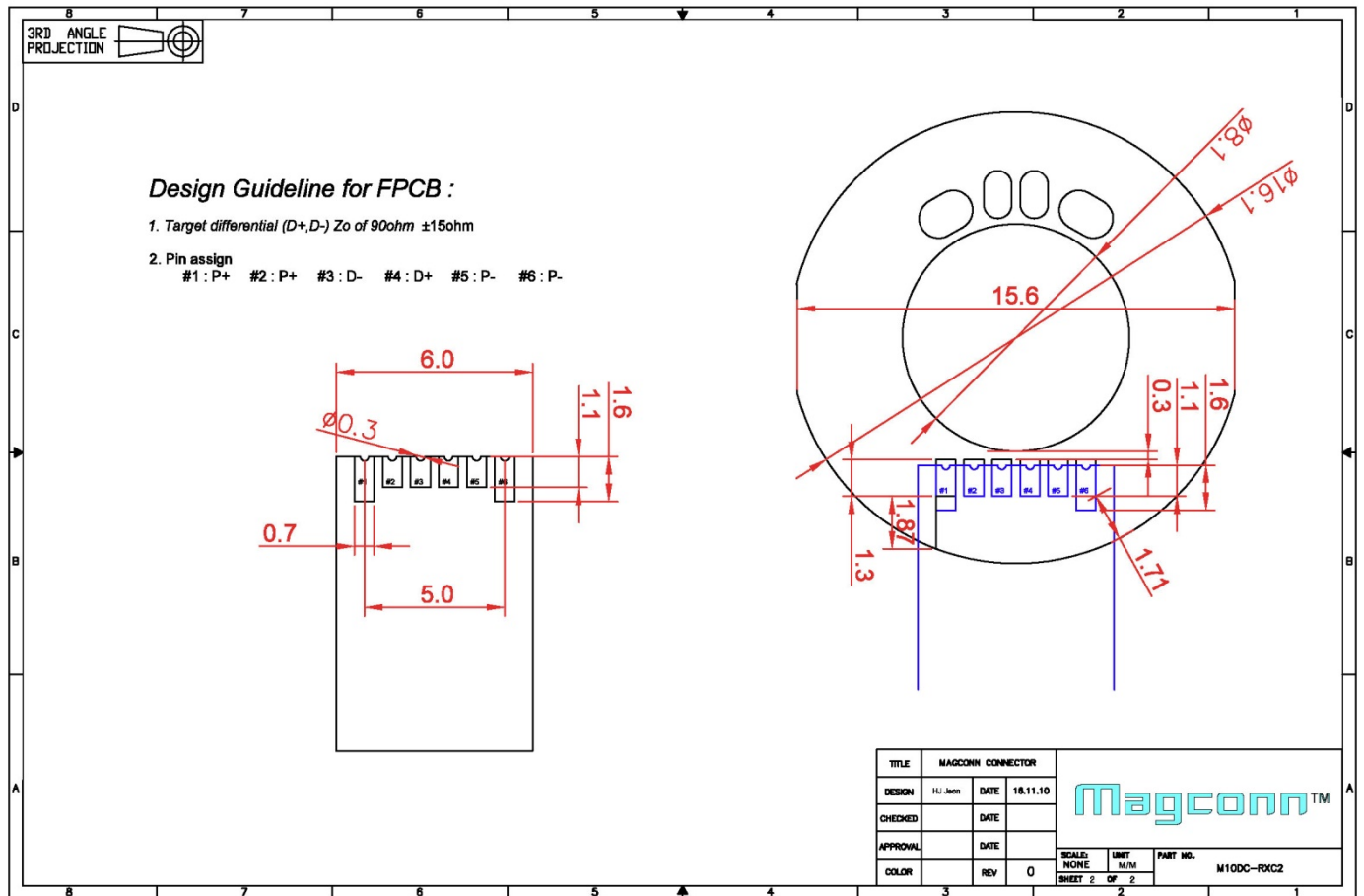
5.3. Reliability and Durability

Item	Title	Test condition	Criteria	Standard
Electric performance	Contact resistance	1A(DC) of each pin from RX to TX	< 30mohm	MIL-STD-202 method 307 MVL-STD-101
	Insulation resistance	At DC 250V	➤ 250Mohm	MIL-STD-202 method 302
Mechanical performance	Durability	Mating/un-mating Abrasion 360-degree rotation	Contact resistance : < 50mohm	MVL-STD-101
Environment performance	Salt corrosion	5% density, during 48hours	Don't make corrosion. Contact resistance : < 50mohm	MIL-STD-202 method 101
	Thermal shock	Temperature (°C) -55 - > 25 -> 85 -> 25, 25minute 5 cycle	Contact resistance : < 50mohm Insulation resistance : > 250Mohm No crack, No damage, No deformation	MIL-STD-202 method 107
	Life(at elevated ambient temperature)	At 85°C, during 96hours	Contact resistance : < 50mohm Insulation resistance : > 250Mohm No crack, No damage, No deformation	MIL-STD-202 method 108
	Humidity (steady state)	40°C, 0~90% humidity, during 96hours	Contact resistance : < 50mohm Insulation resistance : > 10Mohm	MIL-STD-202 method 103
	Reflow	Peak 260°C, 10seconds, 2 cycle	Surface flatness after reflow is no more than 0.1mm No bending, no blister, no deformation	

5.4. Module Drawing



5.5. Module PCB Layout Guide



6. Specification of TX module

6.1. Part number

M10-TX23C2

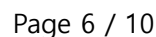
6.2. Specification

Item	Rated Value
Operating Temperature range	-10°C ~ 50°C
Operating Humidity range	20 ~ 80%
Recommended Storage Temperature and Humidity range	-45°C ~ 85°C / 10~70%
Rated current	Max 1.5A/pin
Contact resistance	Max 30mohm/pin
Contact pin count	6pin
Attachment/removal life	5,000 times (with RX connector)
Product weight	0.5g +/- 0.1g
Module Color	Black / White

6.3. Reliability and Durability

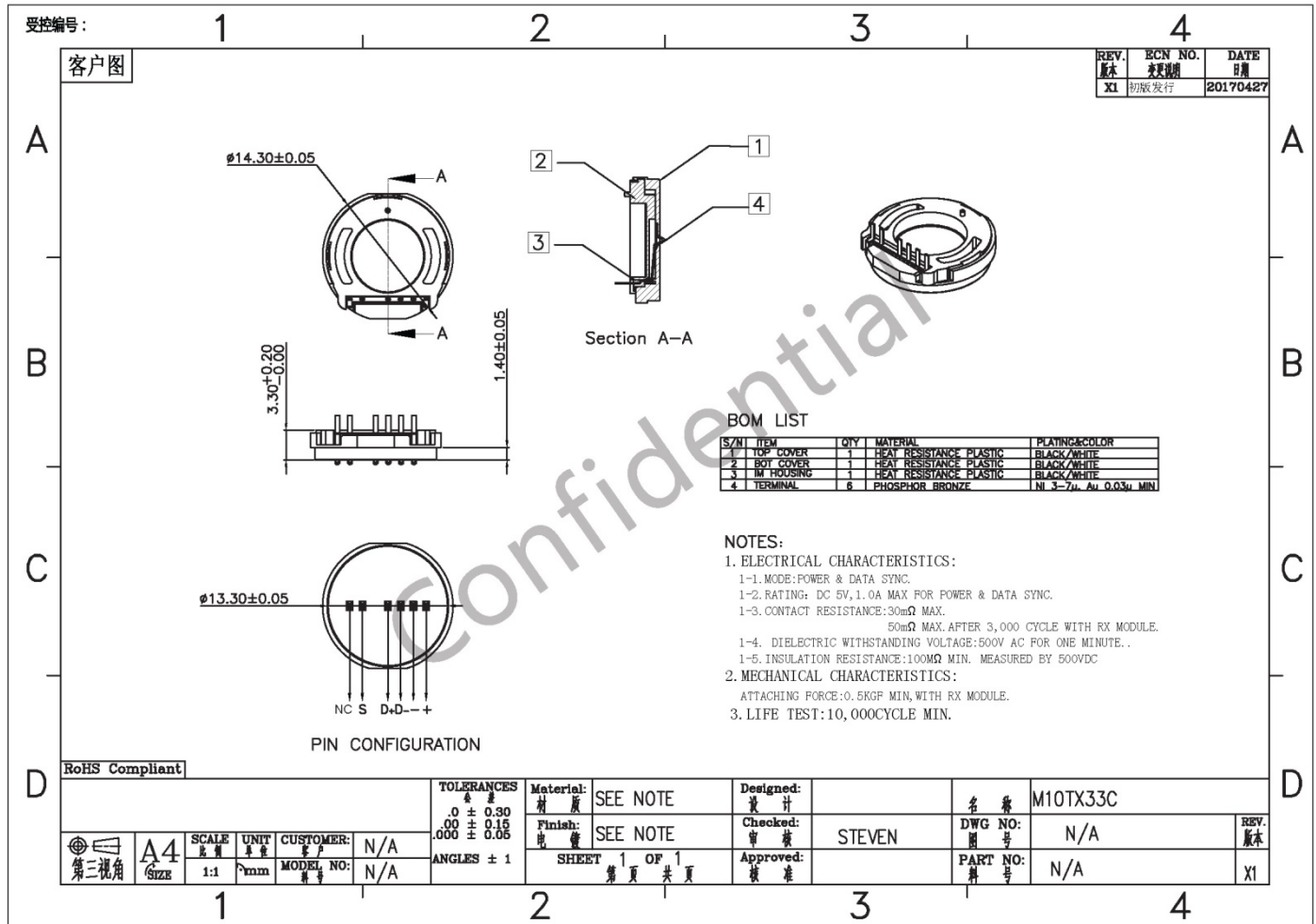
Item	Title	Test condition	Criteria	Standard
Electric performance	Contact resistance	1A(DC) of each pin from RX to TX	< 30mohm	MIL-STD-202 method 307 MVL-STD-101
	Insulation resistance	At DC 250V	➤ 250Mohm	MIL-STD-202 method 302
Mechanical performance	Durability	Mating/un-mating Abrasion 360-degree rotation	Contact resistance : < 50mohm	MVL-STD-101
Environment performance	Salt corrosion	5% density, during 48hours	Don't make corrosion. Contact resistance : < 50mohm	MIL-STD-202 method 101
	Thermal shock	Temperature (°C) -55 -> 25 -> 85 -> 25, 25minute 5 cycle	Contact resistance : < 50mohm Insulation resistance : > 250Mohm No crack, No damage, No deformation	MIL-STD-202 method 107
	Life(at elevated ambient temperature)	At 85°C, during 96hours	Contact resistance : < 50mohm Insulation resistance : > 250Mohm No crack, No damage, No deformation	MIL-STD-202 method 108
	Humidity (steady state)	40°C, 0~90% humidity, during 96hours	Contact resistance : < 50mohm Insulation resistance : > 10Mohm	MIL-STD-202 method 103

6.4. Module Drawing

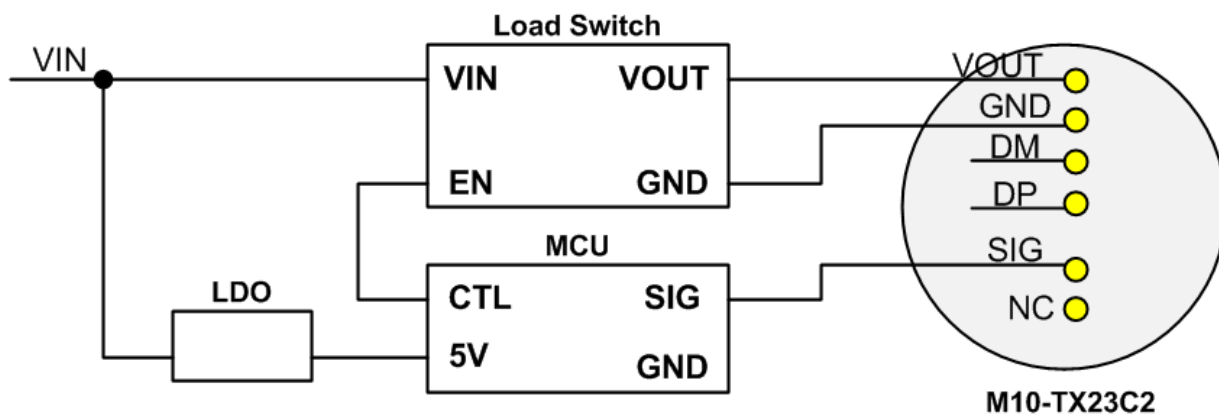


6.5. New Module Drawing

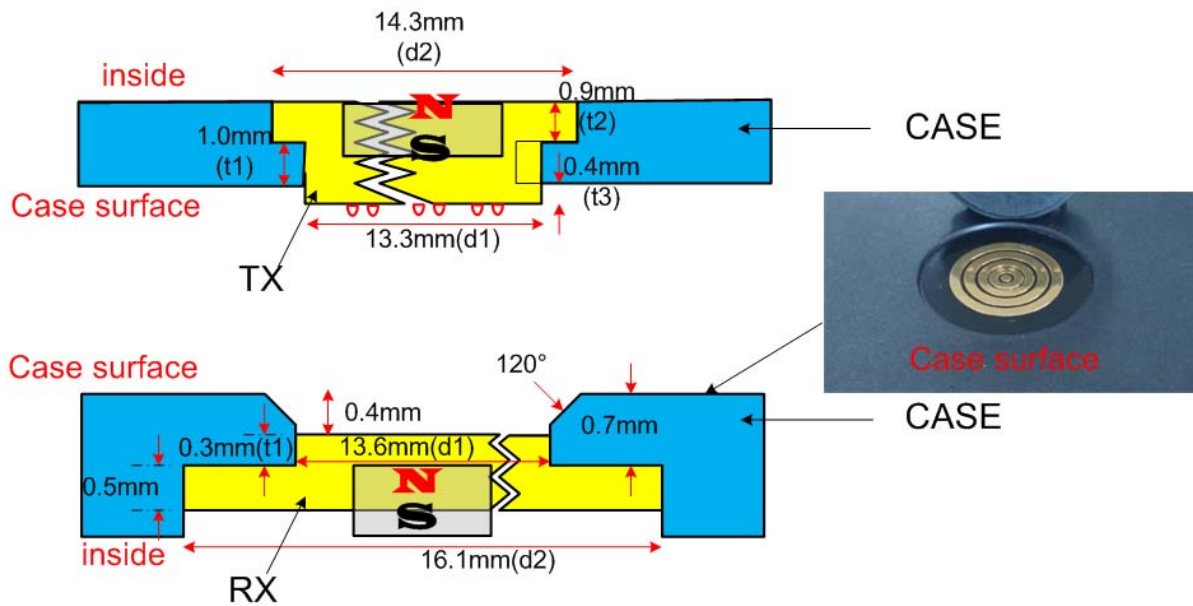
Coming soon (from July)



6.6. Recommended Circuit Diagram for TX connector



7. Install Guide of RX and TX into Housing



8. Magnet Polarity of RX and TX surface



9. Recommend of Magnet Type

9.1. For RX connector

Cylindrical type

Diameter : 8mm (7.95mm ~ 8.0mm)

Thickness : > 1.0mm (can use higher, depends on device weight and structure)

Recommended Property : Neodymium(NdFeB), N48M, 100°C

(if you want to use it much higher environment condition, we recommend to use 'H' or 'SH' grade instead of 'M')

9.2. For TX connector

Cylindrical type

Diameter : 8mm (7.95mm ~ 8.0mm)

Thickness : > 3.0mm (can use higher, depends on device weight and structure)

Recommended Property : Neodymium(NdFeB), N48M, 100°C

(if you want to use it much higher environment condition, we recommend to use 'H' or 'SH' grade instead of 'M')

10. Device and Documentation Support

10.1. Receiving Notification of Documentation Updates

To receive notification of documentation updates, call Magconn sales team. They will give you the latest information. For change details, review the revision history included any revised document.

10.2. Community Resources

The following links connect to Magconn community resource.

Sales and Customer Services : sales@magconn.net

Design Support and Technical Support : TS@magconn.net

10.3. Packaging and Orderable Information

Packaging and orderable information are subject to change without notice and without revision of this document.

11. Regulatory Environmental Requirements

The unit will be composed of 100% RoHS compliant and materials per the 2002/95/EC RoHS Directive.

12. ORDER INFORMATION

12.1. Module Order Information

Module	Part number	Color	Weight(g)
RX connector	052-M10DC-RXC2-07B	black	0.3
RX connector	052-M10DC-RXC2-07W	white	0.3
TX connector	056-M10-TX23C2B	black	0.5
TX connector	056-M10-TX23C2W	White	0.5

12.2. LOT Numbering

Year(Y) + Month(M) + Date(DD)