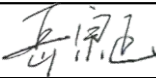
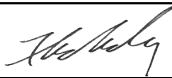
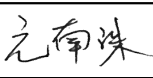


Customer	LUXSHARE ICT	Date	2026. 08.18
		Version	Rev. 00

REQUEST FOR APPROVAL (승인원)

Part Name	WL82 (DUO) Watch Coil module			Picture
Luxshare ICT PN	8205-1WS0002H-00			
Wontech Part Number	EP-OL715(D)			
Specification	Inductance		5.1uH ± 5% @1V,1.78MHz	
	Rs_Resistance		650mΩ ± 20% @1V,1.78MHz	
	Rdc_Resistance		Max 100mΩ	
	Ass'y	Width	27.0 ± 0.2mm	
		Length	25.5 ± 0.2mm	
		Thickness	Max 6.4 mm	
Weight		9.1 g ± 5%		

Customer		Drawing	Reviewer	Approver
LUXSHARE ICT	Department / Name			
	Date			
	Sign			

Supplier		Drawing	Reviewer	Approver
WON TECH	Department / Name	Alex Yue	Kwon J.S	Yuan Nanzhu
	Date	2026.08.18	2026.08.18	2026.08.18
	Sign			

Maker		WON TECHNOLOGY VINA Co., Ltd	TEL	(84)2043900263
WON TECH	H.Q / Research Center	4F Building 6-1 No2 Shangxia Wei Gongye Road Zhutang, Fenggang Town, Dongguan City, Guangdong Province,China, TEL : (86)18565813122 FAX : (86)755-83245936		
	Factory	Lot L5; Noi Hoang Industrial Cluster, Noi Hoang Commune, Yen Dung District, Bac Ninh Province, Vietnam (84)0204 3900 263		



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1. Revision History
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 - 2.4 Coil Ass'y disassembly diagram
 - 2.5 Appearance inspection standard
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 - 2.7 Parts list
 - 2.8 Detail drawing
 - 2.8.1 Coil
 - 2.8.2 FERRITE
 - 2.8.3 Bracket
 - 2.8.4 FPCB
 - 2.8.5 Bracket tape
 - 2.8.6 Tape lower
 - 2.8.7 EMI Gasket
 - 2.8.8 Magnet
 - 2.8.9 Magnet plate
 - 2.8.10 Magnet plate tape
 - 2.8.11 Coil tape
 - 2.8.12 Ferrite PI tape
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 - 5.2 Function test (특성검사)
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Part Name : WL82 (DUO) Watch Coil module
ICT PN : 8205-1WS0002H-00



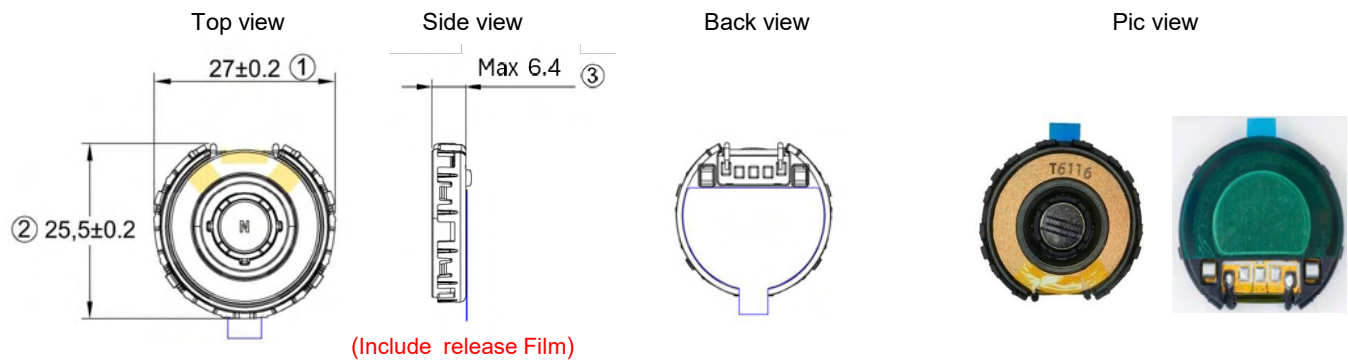
WON TECH

Request For Approval History Of Revision

[illegible]

2. Specification

2.1 Drawing

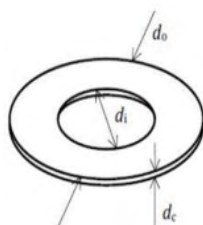


2.2 Electrical specification

Item	Measurement items			Spec.
CTQ	 Mechanical characteristics	(1)	Width	27.0 ± 0.2 mm
		(2)	Length	25.5 ± 0.2 mm
		(3)	Thickness	Max 6.4 mm
CTQ	 Electrical characteristics	L (Inductance)		5.1 uH ± 5% @1V,1.78MHz
		Rs_Resistance		650mΩ ± 20% @1V,1.78MHz
		Rdc_Resistance		Max 100mΩ

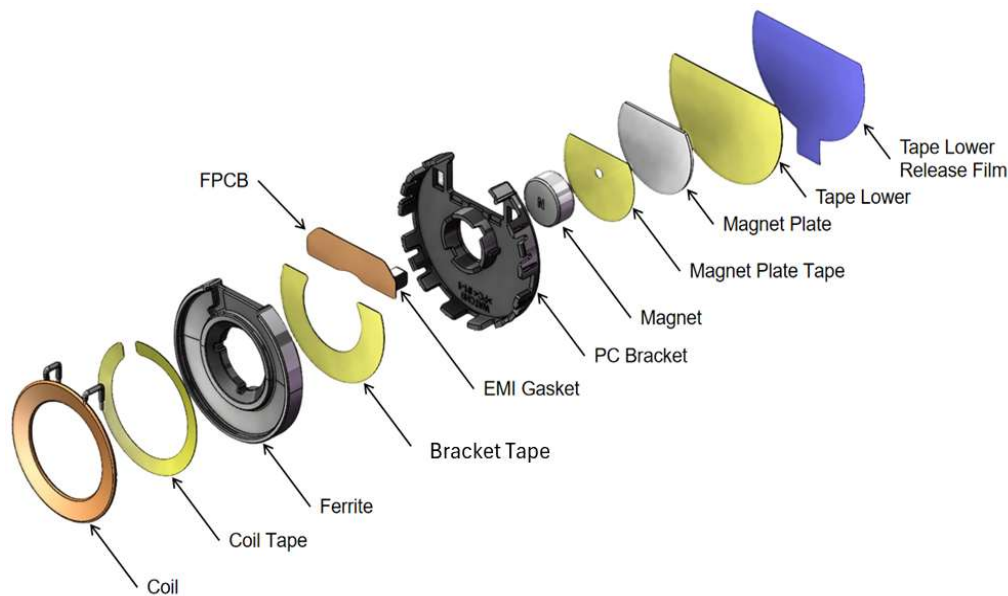
- LCR Meter 1) MICROTTEST 6630 (@ 1V, 1.78MHz)

2.3 Coil Spec(Alpha Coil)



Parameter	Symbol	Value
Outer Diameter	do	22.6±0.5mm
Inner Diameter	di	15.5+0.3/-0.1mm
Thickness	dc	0.7±0.1mm
Number of Turns	N	9
Number of Layers	-	1 Layer

2.4 Coil Ass'y disassembly diagram





2.5 Appearance Inspection standard



WON TECH

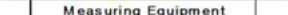
Outgoing Visual Inspection Standard (Watch9 Tx Coil Ass'y)

Document Number	WT-FM-QA-020
Initial Issue Date	2026. 08. 18
Revision Status	
Page	3 page

1. Purpose: Detect visual defects and prevent shipment of nonconforming Watch9 Tx Coil Ass'y products.

2. Scope: Watch9 Tx Coil Ass'y (EP-OL715)

3. Product Dimensions

Item	Inspection Item	Specification	Inspection Method	Measuring Equipment	Drawing
Ass'y	Width	27.0 ± 0.2 mm	Bracket outer width	Vernier Calipers	
	Length	25.5 ± 0.2 mm	Bracket outer length		
	Thickness	Max 6.4 mm	Overall thickness including release film		
	Weight	9.1 g ± 5%	Total assembled product weight	Electronic Scale	

4. Inspection Method

- 1) Remove contamination sources before inspection. Wear finger cots during handling and inspection.
- 2) Perform visual inspection as standard. Escalate abnormal cases to the responsible engineer for joint disposition.
- 3) Return measuring equipment after use. If abnormal, contact Quality for disposition before use.

Standard Front View

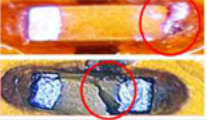
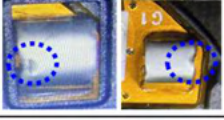
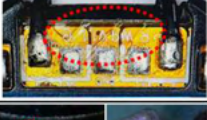
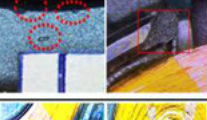
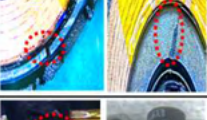
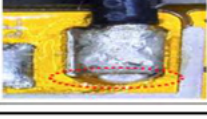


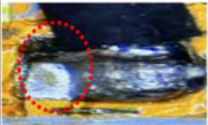
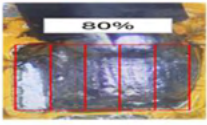
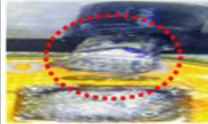
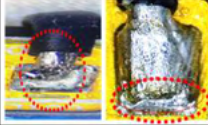
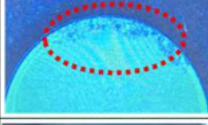
Standard back View



5. Acceptance Criteria

Defect	Defect Image	Cause	Acceptance Criteria	Exception (OK)
Contamination		- Foreign material/contamination on Coil or Block surface - Handling contamination, including adhesive residue	NG - Reject any visible foreign material regardless of size. - Applies to the entire Coil/product.	Discoloration from Coil winding heat treatment is acceptable.
Coil scratch		- Coil wire scratch - Mark caused by handling force	Accepted: - Scratch length ≤ 1 mm, with no electrical abnormality. Defective: - Reject any broken copper wire regardless of length.	Minor scratches ≤ 1 mm are acceptable.
Loose Coil Wire		- Material defect or loose wire during winding	Accepted: - Loose copper wire attached to winding surface: ≤ 0.8 mm, with no electrical abnormality. Defective: - Reject any broken copper wire regardless of length.	
Loose Coil PI Tape		- Reduced tape adhesion due to damage	Accepted: - Lifted area ≤ 1/3 of tape width. - At least 2/3 of tape width shall remain bonded to the Coil.	
Magnet Chipping		- Surface dent caused by external damage	Accepted: - Magnet dent ≤ 2.0 mm. Defective: - Magnet dent > 2.0 mm. - Cu layer exposed.	
Magnet Scratch		- Scratch caused by external damage or handling force	Accepted: - Magnet plating remains intact. Defective: - Plating peeled with Cu layer exposed.	
Magnet Marking Loss		- Marking worn by Magnet friction	Accepted: - Marking length ≥ 2.0 mm and visually identifiable. Defective: - Marking length < 2.0 mm. - No N-pole marking.	If marking length meets criteria, color and shape variation is acceptable.
Magnet Lift		- Lift caused by assembly defect	Defective: - Any Magnet lift is NG.	
Bonding1		- Bond penetration between Coil and Ferrite	Accepted: - Bond properly penetrates the application area. - Bond shall not extend beyond the Bracket.	
Bonding2		- Bond penetration at Bracket/Ferrite/Magnet interface	Accepted: - Bond properly penetrates the application area. Defective: - No bond in the application area.	
Bonding3		- Bond applied over the Ferrite partition	Accepted: - Measured thickness is within specification. Defective: - Measured thickness exceeds specification.	
Bonding4		- Whitening on Coil/Ferrite Surface	Accepted: - Accept if thickness meets specification.	

Defect	Defect Image	Cause	Acceptance Criteria	Exception (OK)
Missing MLCC		- MLCC detached or damaged due to material defect or assembly impact	Defective: - MLCC missing or detached.	
Damaged MLCC		- Damage caused by material defect or handling force	Defective: - Any MLCC damage is NG.	
EMI Gasket Misalignment		- Shift caused by Bracket/FPCB position tolerance	Accepted: - EMI Gasket remains within the Bracket groove.	
EMI Gasket Damage 1		- EMI Gasket contact/impact caused by material or assembly defect	Accepted: - No plating damage. - Minor surface wrinkle, fold, or discoloration only. Defective: - Surface damaged with internal Core or Cu layer exposed.	
EMI Gasket Damage 2		- Physical scratch from material defect or sharp assembly burr	Defective: - Plating torn/peeled with Cu layer or Core exposed. - Visually detectable crack. - Non-removable surface foreign material.	Minor scratch is acceptable if resistance is normal and the torn area is <10% of total contact area.
EMI Gasket Compression		- Incorrect FPCB/Ferrite assembly position - Incorrect Bracket assembly position	Defective: - EMI Gasket crushed, pinched, or deformed.	
Missing EMI Gasket		- Material defect, missing installation, or detachment	Defective: - EMI Gasket missing.	
FPCB Misalignment 1		- Ferrite lot/supplier variation - FPCB alignment variation	Accepted: - L/R offset ≤0.3 mm. Defective: - L/R offset >0.3 mm.	
FPCB Misalignment 2		- FPCB alignment variation	Accepted: - L/R offset ≤0.3 mm. Defective: - L/R offset >0.3 mm.	
FPCB Scratch		- Damage caused by external impact or handling force	Defective: - Any FPCB surface scratch is NG.	
Ferrite Chipping		- Incorrect Block cutting conditions - damage from external impact	Accepted: - Up to 3 defects, each ≤2.0 mm. Defective: - More than 3 defects, each ≤2.0 mm. - Any single defect >2.0 mm.	
Ferrite Damage/Crack		- Breakage or damage caused by external impact/handling	Defective: - Reject any visible crack regardless of size or quantity.	
Heat-Shrink Tube Dent/Deformation		- Tube tear or heat deformation with lead wire exposed - Damage or hot-bar heat deformation	Accepted: - Tube damage after soldering ≤2.0 mm. - Heat deformation at FPCB solder joint ≤2.0 mm. Defective: - Tube damage after soldering >2.0 mm. - Heat deformation at FPCB solder joint >2.0 mm.	
Heat-Shrink Tube Damage		- Tube torn by external damage, exposing lead wire	Defective: - Cu wire exposed.	
Short Heat-Shrink Tube		- Cutting tolerance or setup error	Accepted: - Lead wire exposure ≤2.0 mm. Defective: - Lead wire exposure >2.0 mm. - Lead wire contacts Ferrite.	Apply heat-shrink tube length tolerance.
Excess Solder Area		- Incorrect lead wire alignment or length	Accepted: - Solder remains within the boundary (silk line). Defective: - Solder exceeds the boundary (silk line).	

Defect	Defect Image	Cause	Acceptance Criteria	Exception (OK)
Insufficient Solder Area		- Incorrect lead wire alignment	Accepted: - Solder coverage $\geq 80\%$. Defective: - Solder coverage $< 80\%$.	
Solder Open		- Incorrect lead wire alignment - Insufficient lead wire length - Insufficient hot-bar pressure	Defective: - Any open solder joint is NG.	
Cold Solder Joint		- Insufficient lead wire length - Insufficient hot-bar pressure or heat transfer	Defective: - Cold solder joint. - Solder is balled and does not wet the pad and lead uniformly.	
Solder Ball		- Solder ball from FPCB SMT process - Solder ball generated during soldering	Defective: - Any solder ball is NG.	
Excess Solder Height		- Excess lead wire length increases Solder height	Accepted: - Lead wire/solder height does not exceed Bracket height. Defective: - Lead wire/solder height exceeds Bracket height.	
Magnet Plate Corrosion		- Surface corrosion from air exposure	Accepted: - Minor surface corrosion on Plate is acceptable.	
Magnet Plate Lift		- Lift caused by assembly defect - Lift caused by missing Magnet Bond	Defective: - Any Magnet Plate lift is NG.	
Tape Attachment		- Attachment offset caused by Tape misalignment	Accepted: - Adhesive layer remains within the Bracket. Defective: - Adhesive layer extends beyond the Bracket.	

2.6 LOT Number 표기법

<Vietnam> Lot : **T 6 8 28**

(1) (2)(3) (4)

(1) T : VIETNAM, Won Technology VINA

(2) Production year : mantissa of the year (ex)2024 : 4)

(3) Production month : 1~9, A, B, C (10月 : A, 11月 : B, 12月 : C)

(4) Production date : 01~31

Marking OK	Dim marking (인식불가) ,NG	Rework marking (재작업)
		

※ Marking confirmation

-Confirm the marking products are qualified product.

-Confirm whether the marking is abnormal and whether it can be identified by the eyes.

※ Marking rework

-Rework the products that cannot be identified

(Marking 인식이 불가능한 제품에 대해서 marking 재작업 진행)

-When rework, marking the rest parts except the marked area before.

(재작업시 1차 Marking 영역을 제외한 부분에 Marking 진행)

Part Name : WL82 (DUO) Watch Coil module
ICT PN : 8205-1WS0002H-00



2.7 Parts list

No.	Part Code	Description	Specification	Vendor	Harmful Substances	Q'ty
1		Litz Wire	0.05*70p Litz wire	Transmo	Pass	1EA
2		Ferrite	Mn-Zn Ferrite 25.13(OD)x4.1mmT	LIZZER	Pass	1EA
3		Bracket	PCM 26.96(OD)x4.7mmT	YONG CHAO	Pass	1EA
4		FPCB	1/3 Oz / Electroless Nickel Immersion Gold 19.4(L)x5.65(W)x0.16mmT	ZHONG SHI	Pass	1EA
5		Bracket Tape	3M 9448A 22.6(OD)x12.6(ID)x0.15mmT	JIA XIN	Pass	1EA
6		Tape Lower	3M 93020LE 24.6(L)x16.9(W)x0.2mmT	JIA XIN	Pass	1EA
7		EMI Gasket	SMR-TS-2.5-3-2R	JOINSET	Pass	2EA
8		Magnet	Nd-Fe-B N52M 7.8(OD)x3.6mmT	TIANHE	Pass	1EA
9		Magnet Plate	SPCC 16.0(OD)x12.5(W)x1.0mmT	HAOCHENG	Pass	1EA
10		Magnet Plate Tape	TESA 4982 15.4(L)x11.9(W)x0.1mmT	JIA XIN	Pass	1EA
11		Coil Tape	3M 9448A 21.5(OD)x16.5(ID)x0.15mmT	JIA XIN	Pass	1EA
12		Anti-Unwinding Pi Tape	PI tape Thickness 0.02mm, Width 4.0mm	KAPTAPE	Pass	L:12mm*2EA
13		Ferrite Pi Tape	HM PI tape Thickness 0.05mm, Width 7.0mm	KAPTAPE	Pass	L: 8mm*1EA
14		Tube	HF Heat Shrinkable Tube IDΦ 0.7mm,300V,Black , length1: 7.8mm / length2: 5.6mm	CHANG YUAN	Pass	2EA
15		Dipping solder	Halogen Free Bar Solder PF732-B	SHENMAO	Pass	-
16		Bond	AF06	BOSTIK	Pass	0.04g
17		Label Marking	HI-68K Black Ink	YICHENG	Pass	-
18		MLCC	GRM1555C1H471JA01D (470pF50V,J, COG, 1005(mm))	MURATA	Pass	2EA



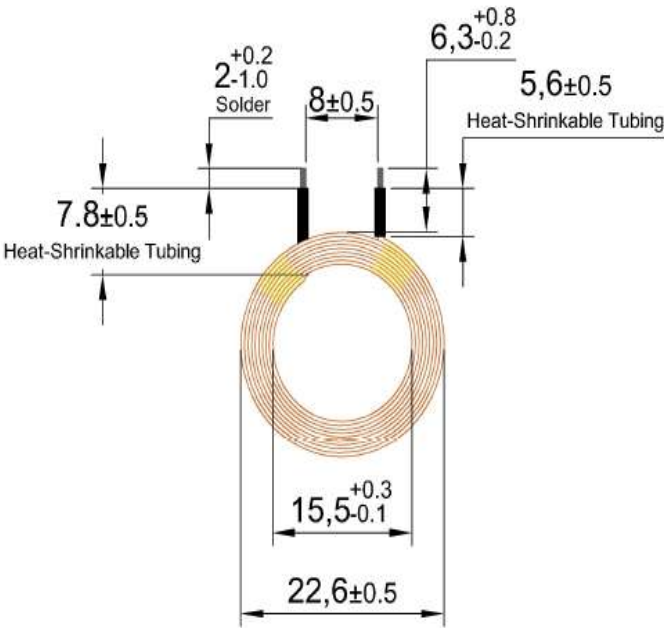
2.8 Detail drawing

2.8.1 Coil

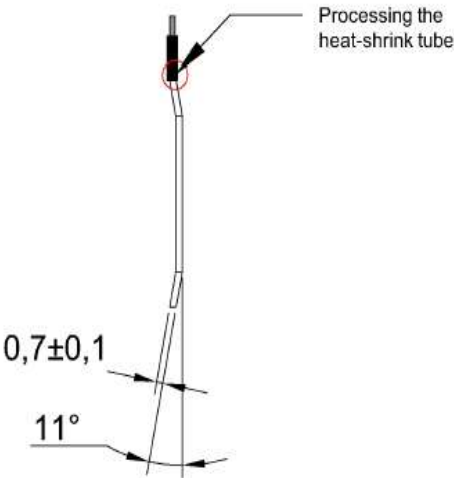
Rev.	Date	Revision History	DWN	APPD
00	2025.12.18	INITIAL RELEASE	Alex Yue	YUAN

- MATERIAL INFORMATION

- a. Wire Spec : 0.05 x 70 Strand Litz Wire
- b. Thickness : 0.7mm ± 0.1mm
- c. Turns : 9Turns
- d. Measurement Location : Coil Size - Measure the width / length of the inner / outer diameter.
Coil Thickness - Measure the 1-Layer thickness of the winding coil.
- e. Heat-Shrinkable Tubing : Φ0.7mm/0.45 - (Spec1: 5.6±0.5/Spec2: 7.8±0.5)
- f. PI TAPE Thickness : 0.02mm (4*12mm*2EA)



Top view



Side view

CTQ / Thickness	
Coil OD Size	Φ22.6 +0.50/-0.50 mm
ID Size	Φ15.50 +0.3/-0.1 mm
Coil Thickness	0.7±0.1mm

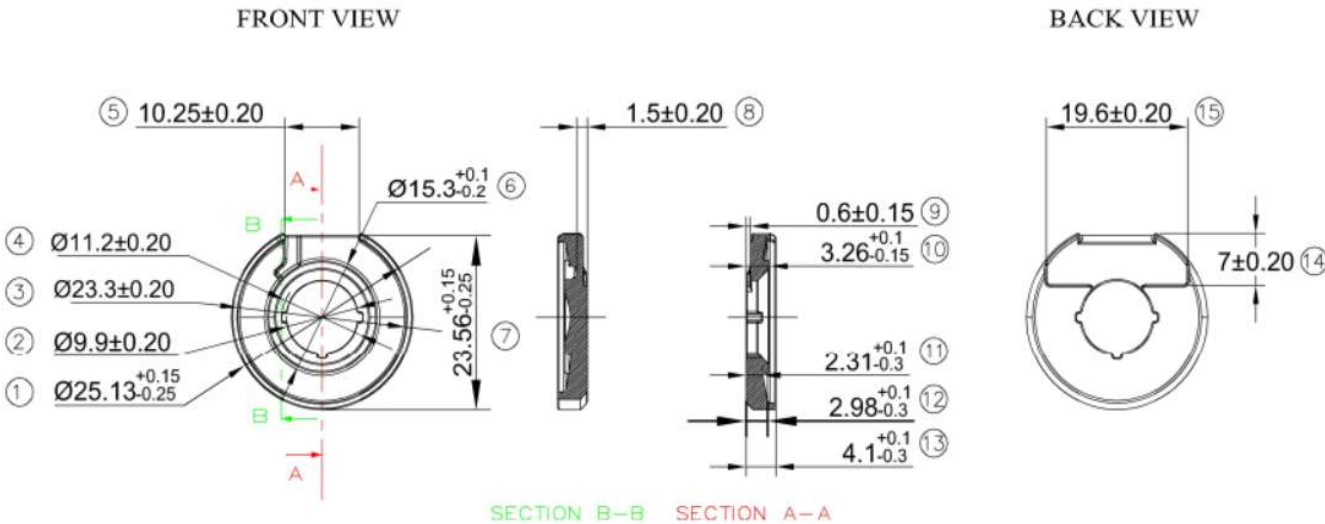
WON TECH		Scale	1/1	Data	2025.12.18
		Dim	mm	Projection	A4
TITLE	Coil	APPD		YUAN	
		CHKD		J.S Kwon	
MATL		DWN		Alex Yue	
		DWG No.			

2.8 Detail drawing
2.8.2 Ferrite

Rev.	Date	Revision History	DWN	APPD
00	2025.12.18	INITIAL RELEASE	Alex Yue	YUAN

- MATERIAL INFORMATION

- a. Material : Mn-Zn
- b. Thickness : 4.1 mm +0.1/-0.3mm
- c. Color : Dark Gray

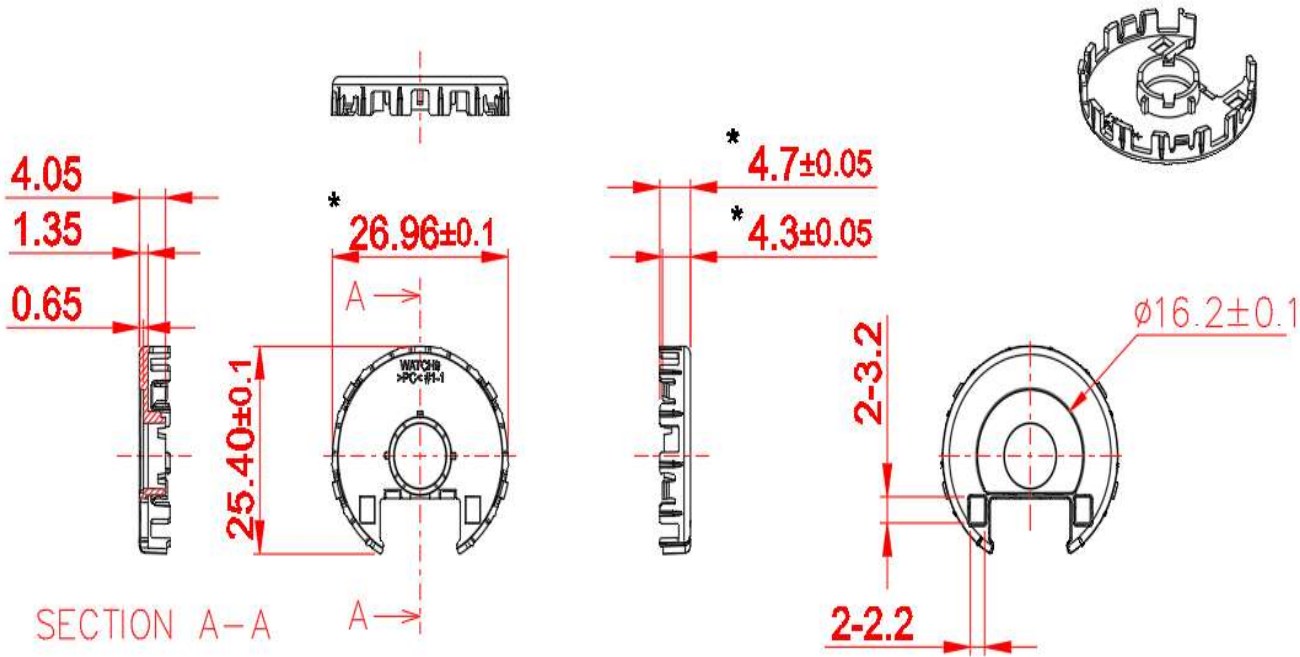


WON TECH		Scale	1/1	Data	2026.03.20
		Dim	mm	Projection	 A4
TITLE	Ferrite	APPD		YUAN	
		CHKD		J.S Kwon	
MATL	Mn-Zn	DWN		Alex Yue	
		DWG No.			

2.8 Detail drawing
2.8.3 Bracket

Rev.	Date	Revision History	DWN	APPD
00	2025.12.18	INITIAL RELEASE	Alex Yue	YUAN

- MATERIAL INFORMATION
- a. Material : PCM
 - b. Thickness : 4.7 mm ± 0.05mm
 - c. Tolerance of dimensions not indicated is 0.1mm.



WON TECH		Scale	1/1	Data	2026.01.14
		Dim	mm	Projection	 A4
TITLE	COIL BRACKET	APPD		YUAN	
		CHKD		J.S Kwon	
MATL	PCM	DWN		Alex Yue	
		DWG No.			

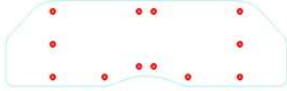
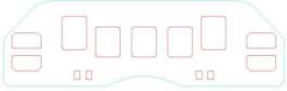
2.8 Detail drawing
2.8.4 FPCB

Rev.	Date	Revision History	DWN	APPD
00	2025.12.18	INITIAL RELEASE	Alex Yue	YUAN

- MATERIAL INFORMATION

- a. MATERIAL : FPCB
- b. Revision : REV 1.1
- c. THICKNESS : MAX 0.16mmT (PCB Tape 0.05mm included.)
- d. Copper : 1/3 Oz
- e. Surface finish : Electroless Nickel Immersion Gold
- f. Apply pad solder: Solder paste shall be applied to the FPCB pads for the hot-bar soldering process.
- g. Silk Color : White



Drilling and outline	TOP-COV	TOP-PAT
		
TOP-SILK	Bottom-PAT	Bottom-Cov
		

WON TECH		Scale	1/1	Data	2025.12.18
		Dim	mm	Projection	 A4
TITLE	FPCB	APPD		YUAN	
		CHKD		J.S Kwon	
MATL		DWN		Alex Yue	
		DWG No.			



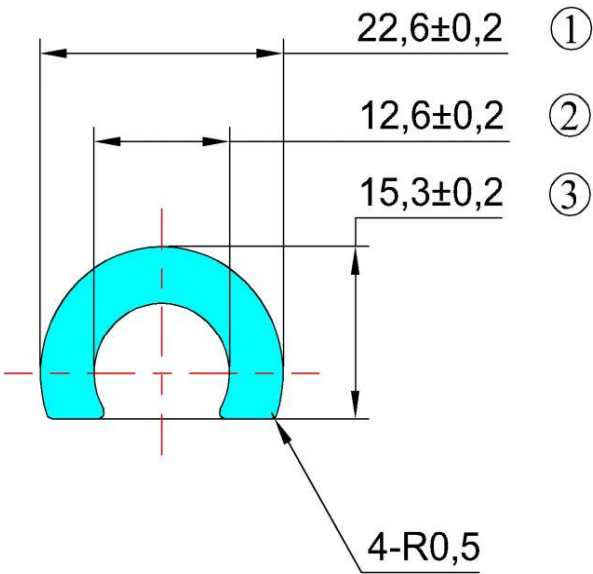
2.8 Detail drawing
2.8.5 Bracket tape

Rev.	Date	Revision History	DWN	APPD
00	2025.12.18	INITIAL RELEASE	Alex Yue	YUAN

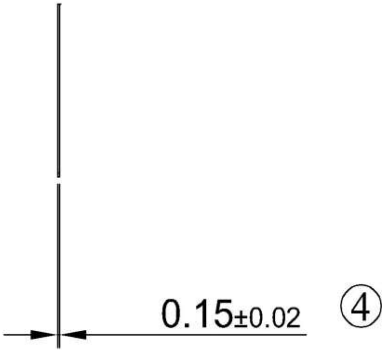
- MATERIAL INFORMATION

- a. Material : 3M 9448A
- b. Thickness : 0.15±0.02mm
- c. Measurement Location : Size - Measure the width / length of the outer diameter.

TOP VIEW



SIDE VIEW



WON TECH		Scale	1/1	Data	2025.12.18
		Dim	mm	Projection	A4
TITLE	BRACKET TAPE	APPD		YUAN	
		CHKD		J.S Kwon	
MATL	3M 9448A	DWN		Alex Yue	
		DWG No.			

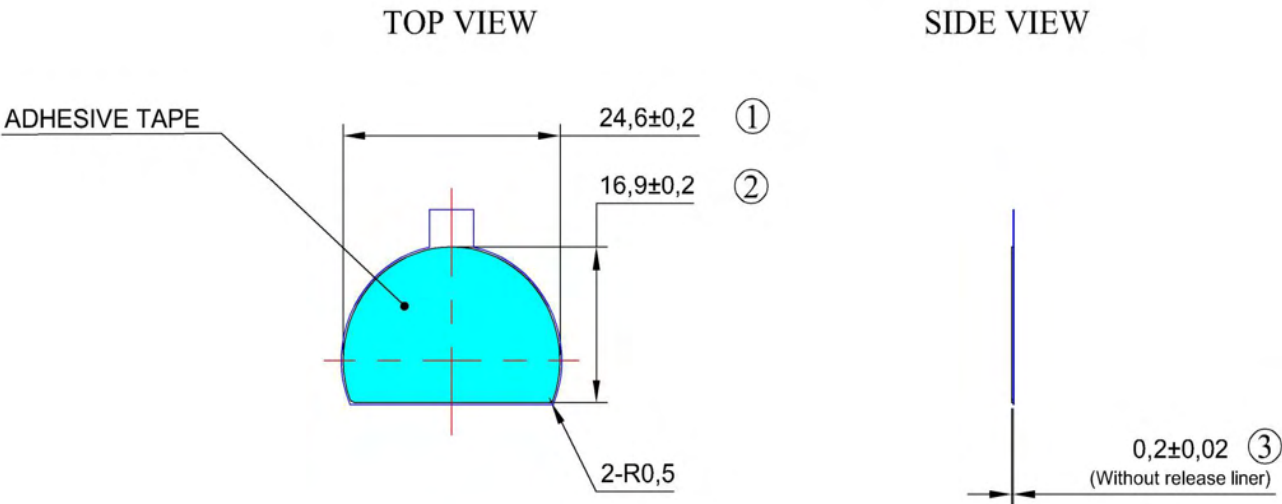


2.8 Detail drawing
2.8.6 Tape lower

Rev.	Date	Revision History	DWN	APPD
00	2025.12.18	INITIAL RELEASE	Alex Yue	YUAN

- MATERIAL INFORMATION

- a. Material : 3M 93020LE
- b. Thickness : 0.20±0.02mm
- c. Measurement Location : Size - Measure the width / length of the outer diameter.
Thickness - After removing release liner measure the thickness of the tape.



WON TECH		Scale	1/1	Data	2025.12.18
		Dim	mm	Projection	A4
TITLE	TAPE LOWER	APPD		YUAN	
		CHKD		J.S Kwon	
MATL	3M 93020LE	DWN		Alex Yue	
		DWG No,			

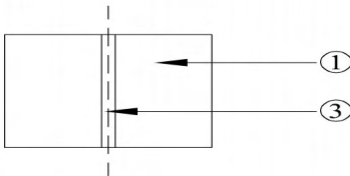
2.8 Detail drawing
2.8.7 EMI Gasket

Rev.	Date	Revision History	DWN	APPD
00	2025.12.18	INITIAL RELEASE	Alex Yue	YUAN

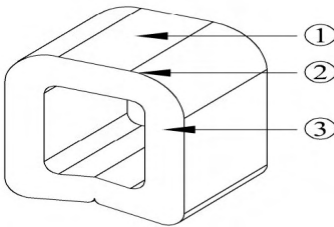
- MATERIAL INFORMATION

■ Characteristics of each material

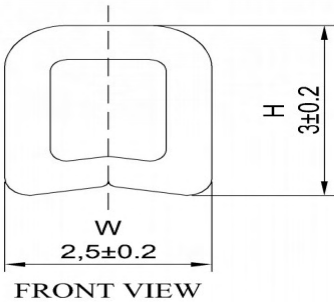
No	Material Name	Specification	Material
①	Conductive Film	Surface resistance: Max. 0.05 Ω / $\square$ Cu plating thickness: 1.5~2.5 μm Sn plating thickness: 0.5~1.5 μm	Polyimide + Cu plating + Sn plating
②	Elastomer Adhesive	Heat resistance & Halogen Free	Silicone Rubber
③	Elastomer Core	Heat resistance & Halogen Free Tensile strength: Typical. 70kgf/cm ² Elongation: Typical. 400% Equivalent to UL 94 V-1	Silicone Rubber



BOTTOM VIEW



ISOMETRIC VIEW



FRONT VIEW



LEFT VIEW

WON TECH		Scale	1/1	Data	2025.12.18
		Dim	mm	Projection	 A4
TITLE	EMI GASKET	APPD		YUAN	
		CHKD		J.S Kwon	
MATL		DWN		Alex Yue	
		DWG No.			

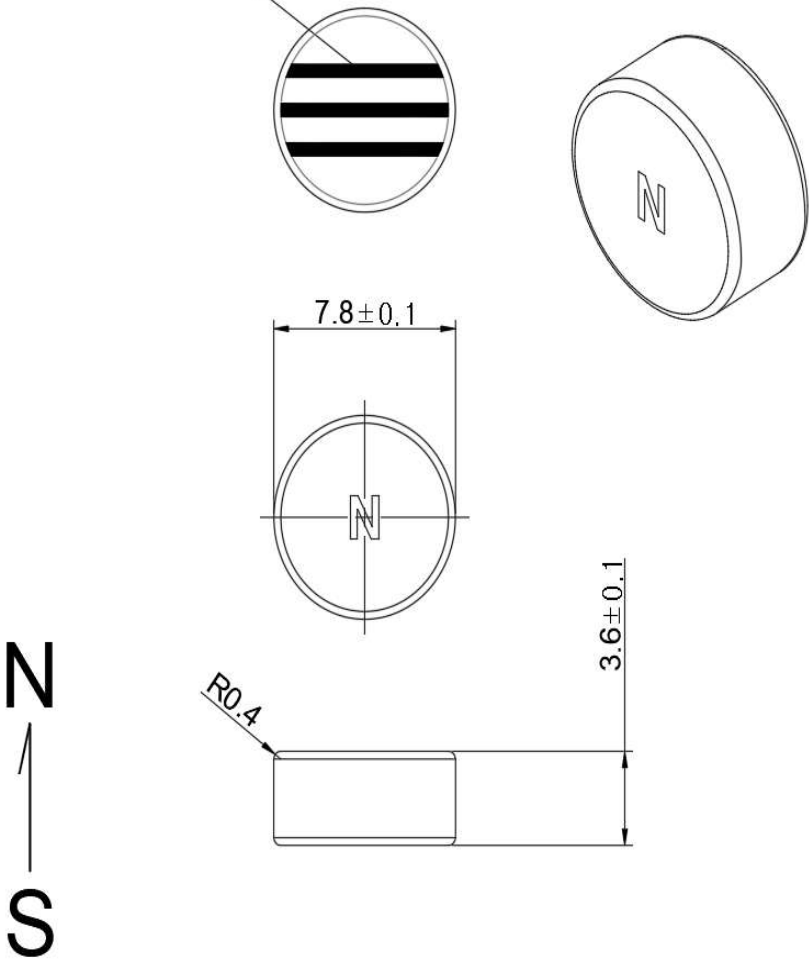
2.8 Detail drawing
2.8.8 Magnet

Rev.	Date	Revision History	DWN	APPD
00	2025.12.18	INITIAL RELEASE	Alex Yue	YUAN

- MATERIAL INFORMATION

- a. Material : Nd-Fe-B(N52M)
- b. Thickness : 3.6 ± 0.1 mm
- c. Measurement Location : Size - Measure the width / length of the outer diameter.
- d. GAUSS : 4,100Gs $\pm$ 300

Black 3 Line mark on N pole surface

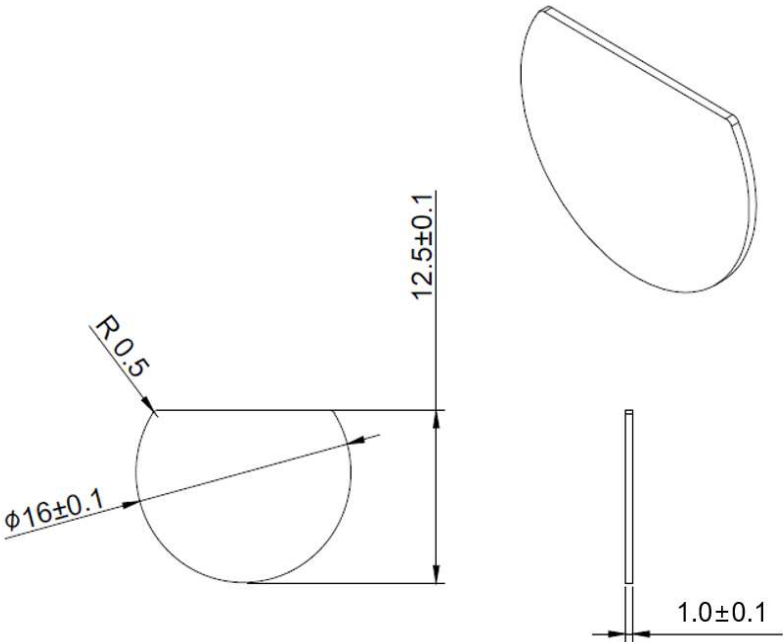


WON TECH		Scale	1/1	Data	2025.12.18
		Dim	mm	Projection	 A4
TITLE	MAGNET	APPD		YUAN	
		CHKD		J.S Kwon	
MATL	Nd-Fe-B (N52M)	DWN		Alex Yue	
		DWG No,			

2.8 Detail drawing
2.8.9 Magnet plate

Rev.	Date	Revision History	DWN	APPD
00	2026.06.18	INITIAL RELEASE	Alex Yue	YUAN

- MATERIAL INFORMATION
a. Material : SPCC (Steel Plate Cold Commercial)
b. Thickness : 1.0±0.1mm
c. Measurement Location :
Size - Measure the width / length of the outer diameter.
Thickness - Measure the magnet plate thickness



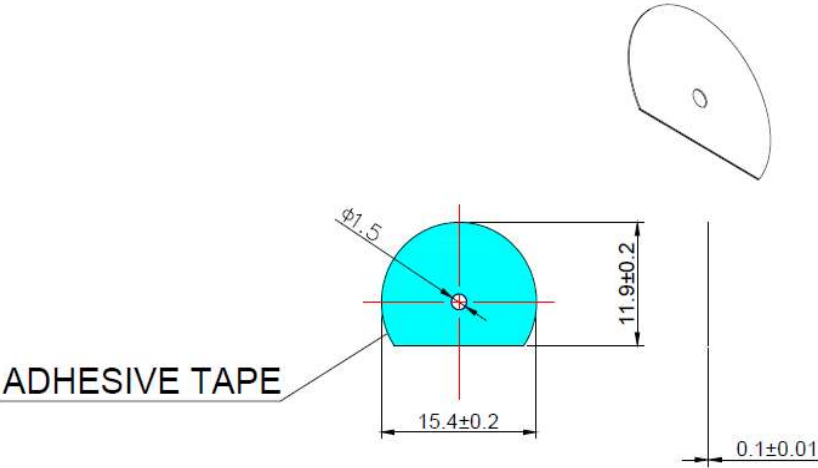
WON TECH		Scale	1/1	Data	2025.12.18
		Dim	mm	Projection	 A4
TITLE	MAGNET PLATE	APPD		YUAN	
		CHKD		J.S Kwon	
MATL	SPCC	DWN		Alex Yue	
		DWG No.			

2.8 Detail drawing
2.8.10 Magnet plate tape

Rev.	Date	Revision History	DWN	APPD
00	2025.12.18	INITIAL RELEASE	Alex Yue	YUAN

- MATERIAL INFORMATION

- a. Material : TESA 4982
- b. Thickness : 0.1mm±0.01mm
- c. Measurement Location : Size - Measure the width / length of the outer diameter.
Thickness - After removing release liner measure the thickness of the tape.



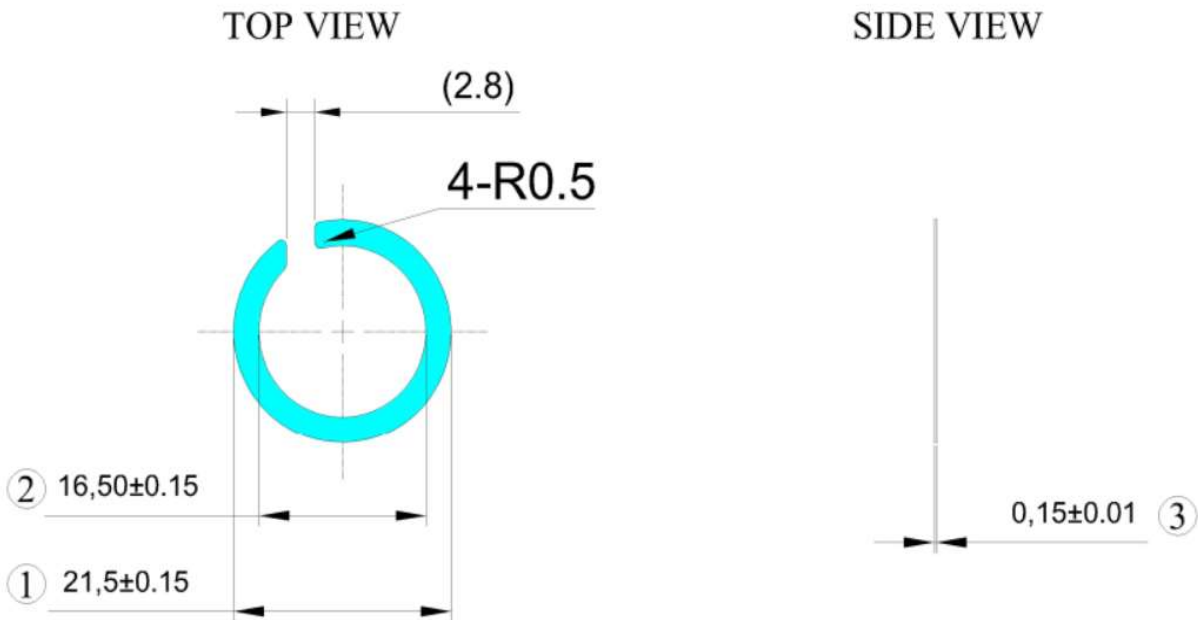
WON TECH	Scale	2/1	Data	2025.12.18
	Dim	mm	Projection	 A4
TITLE	MAGNET PLATE TAPE		APPD	YUAN
			CHKD	J.S Kwon
MATL	TESA 4982		DWN	Alex Yue
			DWG No.	

2.8 Detail drawing
2.8.11 Coil tape

Rev.	Date	Revision History	DWN	APPD
00	2025.12.18	INITIAL RELEASE	Alex Yue	YUAN

- MATERIAL INFORMATION

- a. Material : 3M 9448A
- b. Thickness : 0.15±0.01mm
- c. Measurement Location : Size - Measure the width / length of the outer diameter.
Thickness - After removing release liner measure the thickness of the tape.



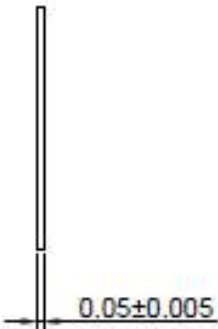
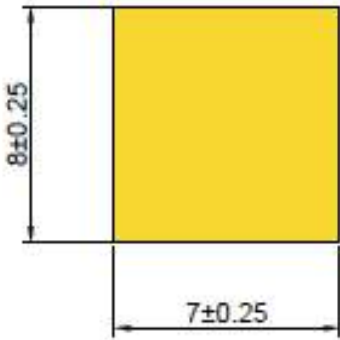
WON TECH		Scale	2/1	Data	2026.03.20
		Dim	mm	Projection	 A4
TITLE	COIL ADHESIVE TAPE	APPD		YUAN	
		CHKD		J.S Kwon	
MATL	3M 9448A	DWN		Alex Yue	
		DWG No,			



2.8 Detail drawing
2.8.12 Ferrite PI tape

Rev.	Date	Revision History	DWN	APPD
00	2025.12.18	INITIAL RELEASE	Alex Yue	YUAN

- MATERIAL INFORMATION
a. Material : HM PI-TYPE
b. Thickness : 0.05±0.005mmT
c. Measurement Location :
Size - Measure the width / length of the outer diameter.
Thickness - After removing release liner measure the thickness of the tape.



WON TECH		Scale	1/1	Data	2025.12.18
		Dim	mm	Projection	A4
TITLE	HM PI TAPE	APPD		YUAN	
		CHKD		J.S Kwon	
MATL	PI	DWN		Alex Yue	
		DWG No.			

Part Name : WL82 (DUO) Watch Coil module
ICT PN : 8205-1WS0002H-00



3. CPK DATA

1. Watch Coil A'ssy CPK

Mold Type	LOTNO T6711	#	Width	Length	Thickness	Gauss(Gs)	LS	RS	RDC	Weight(g)
		Spec	27.0±0.2	25.5±0.2	Max 6.4mm	Min 3,800 Gs	5.1uH ± 5%	650mΩ±20%	Max 100 mΩ	9.1g±5% (8.645~9.555)
		Typical	27.00	25.50	0.00		5.10	650.00	0.00	9.10
		Max Tol	0.20	0.20	6.40		0.255	130.00	100.00	0.455
		Min Tol	0.20	0.20	0.00		0.255	130.00	0.00	0.455
		USL	27.20	25.70	6.40		5.36	780.00	100.00	9.555
		LSL	26.80	25.30	0.00	3800.00	4.85	520.00	0.00	8.645
		Max	27.04	25.56	6.33	4980.00	5.12	698.70	81.23	9.16
		Min	26.95	25.40	6.15	4740.00	4.94	654.35	70.61	9.02
		Average	26.99	25.46	6.24	4890.60	5.05	674.26	72.12	9.09
		Stdev	0.02	0.04	0.04	56.87	0.04	8.57	2.03	0.03
		Cpk	2.67	1.40	1.41	6.39	1.65	4.11	4.58	4.34
		Judgment	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass

Watch Coil	1		26.98	25.40	6.21	4800	5.06	675.76	71.50	9.030
	2		26.98	25.51	6.21	4740	5.05	676.86	70.66	9.110
	3		27.02	25.46	6.33	4800	5.10	680.51	70.74	9.160
	4		26.99	25.48	6.30	4880	5.05	671.95	71.49	9.060
	5		26.96	25.42	6.20	4820	5.10	687.52	71.91	9.140
	6		27.00	25.48	6.20	4840	5.01	660.68	71.43	9.050
	7		26.97	25.46	6.21	4870	5.06	698.70	70.84	9.080
	8		27.02	25.50	6.25	4780	5.04	676.67	71.36	9.050
	9		26.97	25.45	6.26	4890	5.06	671.75	74.45	9.080
	10		27.03	25.47	6.25	4800	4.98	669.57	74.81	9.060
	11		26.96	25.42	6.19	4860	5.02	671.77	72.31	9.110
	12		27.01	25.51	6.27	4900	4.97	656.64	71.83	9.080
	13		26.95	25.46	6.27	4890	5.12	673.09	71.14	9.120
	14		26.98	25.42	6.25	4910	4.94	654.35	71.41	9.110
	15		26.97	25.49	6.24	4880	5.08	673.85	71.44	9.050
	16		27.01	25.48	6.25	4850	5.07	682.96	70.88	9.090
	17		26.99	25.45	6.20	4910	5.11	682.83	73.64	9.120
	18		26.97	25.40	6.19	4860	5.02	666.91	70.89	9.030
	19		26.96	25.48	6.20	4800	5.06	664.33	71.44	9.090
	20		26.99	25.42	6.22	4850	5.06	675.98	71.95	9.130
	21		26.98	25.46	6.31	4880	5.08	675.52	71.38	9.120
	22		27.03	25.50	6.25	4910	5.08	678.70	72.86	9.110
	23		27.00	25.43	6.19	4860	5.09	671.61	70.75	9.110
	24		26.96	25.51	6.21	4950	5.11	679.83	71.20	9.140
	25		26.98	25.45	6.28	4940	5.05	677.94	70.61	9.060
	26		27.02	25.50	6.27	4950	5.05	680.88	74.81	9.040
	27		27.00	25.56	6.25	4960	5.06	681.02	70.82	9.090
	28		26.96	25.42	6.25	4820	5.01	682.55	72.14	9.040
	29		27.01	25.46	6.28	4950	5.09	668.03	71.41	9.090
	30		26.95	25.50	6.18	4920	5.07	670.86	72.52	9.120
	31		27.04	25.45	6.20	4900	5.05	666.91	72.52	9.110
	32		27.01	25.44	6.30	4890	5.03	670.31	71.06	9.040
	33		26.99	25.46	6.20	4900	4.97	669.95	71.30	9.120
	34		26.97	25.50	6.24	4880	4.94	663.42	71.78	9.060
	35		27.00	25.43	6.30	4940	5.09	681.74	71.47	9.020
	36		26.95	25.48	6.15	4930	5.04	690.59	81.23	9.100
	37		26.98	25.40	6.21	4920	5.11	675.76	72.26	9.100
	38		27.01	25.48	6.20	4960	5.00	662.92	71.08	9.080
	39		26.96	25.53	6.24	4950	5.06	676.99	71.34	9.070
	40		26.99	25.42	6.21	4940	5.08	675.19	79.70	9.040
	41		26.97	25.44	6.26	4880	5.09	679.44	71.71	9.030
	42		26.98	25.54	6.19	4960	5.07	669.25	71.19	9.130
	43		26.96	25.41	6.22	4960	5.09	678.43	70.83	9.110
	44		26.99	25.48	6.24	4890	5.07	676.26	71.48	9.100
	45		27.02	25.44	6.23	4980	5.08	663.59	71.11	9.070
	46		26.99	25.42	6.20	4930	5.03	686.11	74.43	9.090
	47		26.97	25.51	6.22	4970	5.02	666.72	73.08	9.110
	48		26.98	25.44	6.26	4960	5.05	664.44	71.68	9.100
	49		27.01	25.46	6.29	4900	5.06	683.97	70.80	9.080
	50		26.97	25.42	6.22	4820	5.05	671.53	71.27	9.070

[illegible]

5.1 본드 도포

24/31

5. Work Instruction

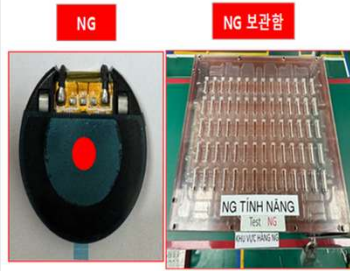
5.2 특성 검사

	Part Name	WL82 Watch Coil module(W9D)	Work Instruction	Document No.		Prepare by		Check by		Approve by	
	Part Number	8205-1WS0002H-00		Revision Number	REV. 2						
	Process Name	Functional Test		Equipment and Tool	JG16+LCR Meter						
	Process Number	27		Special Characteristic	CTQ ★						
IMAGE			Work Procedure	Input Materials	W9 Coil Assy						
			1. Check the connection status of the JIG, measuring instrument, equipment, Pogo Pins, and PC. 2. Check the calibration validity and parameter settings of the measuring instrument. 3. Measure the Master OK/NG Samples and record the results. - The OK Sample shall be judged as "PASS." - The NG Sample shall be judged as "FAIL." - If the Master Sample result is abnormal, do not start production and report it to the supervisor. 4. Reset the equipment counter and perform the origin return. 5. Place the product JIG correctly into the equipment locating groove. 6. Switch the equipment from Manual mode to Auto mode. 7. Press the Start button to begin the inspection. 8. Move PASS products to the next process while they remain in the JIG. 9. Actions for Lead Miss and Inspection Failure 9.1. Call the supervisor. 9.2. Attach a red defect sticker to the failed product. 9.3. Clear the alarm and press the Start button to restart the inspection. 9.4. Place all five products loaded in the JIG into the NG holding area. 9.5. QC shall re-inspect the products. Move PASS products to the re-inspected product area. 9.6. Segregate failed products in the designated NG storage area. ※ Mass Production Start Condition Start mass production only after five consecutive products have passed the inspection.	Work Standard							
				No	Item	Standard	Method	Frequency	Compliance Plan		
				1	LCR Meter	1.78MHz, 1V	Settings Display	Before Operation	1. Check Sheet 2. Process Patrol Check Sheet		
				2	Pogo Pin	<10,000 Cycle	Equipment Counter	Replace Every 10,000 Cycles			
				3							
4											
Inspection Standard											
No	Item	Standard	Method	Frequency	Compliance Plan						
1	Ls	5.1uH ±5% (4.845~5.355)	LCR Meter	All time	1. Check Sheet 2. Process Patrol Check Sheet 3. SPC Check Sheet						
2	Rs	650mΩ ± 20% (520~780mΩ)									
3	Rdc	Max 100mΩ									
4	OK Master SPL	Ls: 5.1uH ±5% Rs: 650mΩ ±20% Rdc: Max 100mΩ									
5	NG Master SPL	NG Mater Sample	Once Every 2 Hours								
Precautions											
1. Do not touch the product by hand during measurement.											
2. Immediately attach a red sticker to any defective product.											
3. Segregate products with functional defects in the designated defect holding bin.											
4. Ensure that all measuring instruments and equipment are properly grounded (earthed).											
5. If a Lead Miss occurs three consecutive times, stop the equipment and report it to the supervisor.											
Action for Abnormalities											
Type		Cause			Response Method						
Measurement Error		Pogo pin contact failure, damage, or deformation			Adjust the measurement position; replace the pogo pin						
Start-up Error or Malfunction		Program Error			Press the E-Stop, then reset or power-cycle the equipment (OFF → ON)						
Product Dislodges from Jig During Measurement		Jig wear, damage, or misalignment			Inspect and reposition the jig; replace the jig						
Product Damage		Incorrect pogo pin height			Adjust the pogo pin height and air cylinder						
		Improper product positioning			Inspect the jig and verify the product seating position						
If an abnormality occurs, immediately notify the supervisor and engineer, take corrective action, and record the action details on the Equipment Check Sheet and Daily Work Report.											
History of Revision											
NO	Date	Change history									
1	17/07/2026	Initial									
2											

주요 부분 명칭



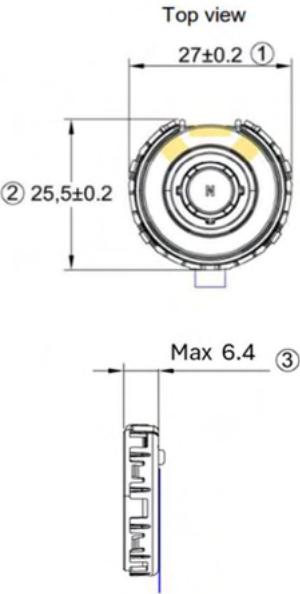






6. Inspection Report

Won tech	Prepare by	Check by	Approve by	Inspection report						Luxshare	Prepare by	Check by	Approve by				
Vendor	WONTECH			Model			8205-1WS0002H-00			Component Linh kiện		WL82 Watch Coil Module					
Shipment quantity Số lượng xuất	200 EA			Shipment Date Ngày xuất hàng			2026-08-07			PART NO.		WT-EPA-RF01 (D)					
LOT NO.	T6711			Inspector Người kiểm tra			Đỗ Thị Nết			Judgment Phán định		OK					
Inspection items	Inspection procedure Phương thức kiểm tra			Inspection procedure Phương thức kiểm tra			Sample quantity Số lượng mẫu			Number of defect Số lượng lỗi		Final judgment Phán quyết cuối cùng					
	Won tech	Luxshare	Won tech	Luxshare	Won tech	Luxshare	Won tech	Luxshare	Won tech	Luxshare	WonTech	Luxshare					
Appearance ngoại quan	AQL G1-0.65			Visual inspection mắt thường			n = 200EA			Pn = 0		OK					
Features Tính năng	AQL G1-0.65			@1V,1.78MHz, LCR Meter			n = 20EA			Pn = 0		OK					
Dimensions Kích thước	CHECK			2D,D.V/C,M/G			n = 20EA			Pn = 0		OK					
XRF Test	CHECK			XRF			n = 1 EA			Pn = 0		OK					
Gauss Đo lường Gauss	CHECK			Tesla Gauss Meter			n = 20 EA			Pn = 0		OK					
Visual inspection Kiểm tra ngoại quan				Standard Tiêu chuẩn						Inspection tools Dụng cụ kiểm tra		Level	Disposition phán quyết	Defect and defect count lỗi và số lượng lỗi			
1	Coil			All components shall be securely assembled and properly positioned. Marking shall be inspected to ensure all characters are complete and legible. Toàn bộ sản phẩm phải được gắn kết với nhau chắc chắn và đúng vị trí Kiểm tra phần marking phải in đầy đủ ký tự						CCD		AQL G1-0.65	OK				
2	Ferrite			The ferrite must be free from contamination (dust, breakage into two pieces), and the tape must not be wrinkled. The edges of the tape must not bulge due to the ingress of foreign materials. Ferrite không được ô nhiễm (bụi bẩn, vỡ làm 2) và tape không được nhăn Các cạnh bên của tape không được phình ra do bụi bẩn thấm nhập vào						CCD		AQL G1-0.65	OK				
3	A'ssy			All components shall be securely assembled and properly positioned. Marking shall be inspected to ensure all characters are complete and legible. Toàn bộ sản phẩm phải được gắn kết với nhau chắc chắn và đúng vị trí Kiểm tra phần marking phải in đầy đủ ký tự						CCD		AQL G1-0.65	OK				
Inspection result Kết quả kiểm tra															DWG		
NO	Product Features Tính năng						Product dimensions Kích thước						Weight Cân nặng		Gauss Đo lường Gauss		
	Ls(uH)		Rs(mΩ)		Rdc(mΩ)		Width		Length		Thickness		weight		Gauss(Gs)		
	5.1uH ± 5% (4.85~5.36)		650mΩ±20% (520-780)		Max 100 mΩ		27.±0.2mm (26.8-27.2)		25.50±0.2mm (25.30-25.70)		Max 6.4 mm		9.1 g ± 5% (8.65~9.56)		Min 3,800 Gs		
	WonT	Luxshare	WonT	Luxshare	WonT	Luxshare	WonT	Luxshare	WonT	Luxshare	WonT	Luxshare	WonT	Luxshare	WonT	Luxshare	
1	5.06	675.76			71.50		26.98		25.40		6.21		9.03		4,800		
2	5.05	676.86			70.66		26.98		25.51		6.21		9.11		4,740		
3	5.10		680.51		70.74		27.02		25.46		6.33		9.16		4,800		
4	5.05		671.95		71.49		26.99		25.48		6.30		9.06		4,880		
5	5.10		687.52		71.91		26.96		25.42		6.20		9.14		4,820		
6	5.01		660.68		71.43		27.00		25.48		6.20		9.05		4,840		
7	5.06		698.70		70.84		26.97		25.46		6.21		9.08		4,870		
8	5.04		676.67		71.36		27.02		25.50		6.25		9.05		4,780		
9	5.06		671.75		74.45		26.97		25.45		6.16		9.08		4,890		
10	5.02		669.57		74.81		27.01		25.47		6.25		9.06		4,800		
11	5.02		671.77		72.31		26.96		25.42		6.19		9.11		4,860		
12	5.04		656.64		71.83		27.01		25.51		6.27		9.08		4,780		
13	5.12		673.09		71.14		26.95		25.46		6.18		9.12		4,890		
14	5.06		654.35		71.41		26.98		25.42		6.25		9.11		4,710		
15	5.08		673.85		71.44		26.97		25.49		6.24		9.05		4,880		
16	5.07		682.96		70.88		27.01		25.48		6.25		9.09		4,850		
17	5.11		682.83		73.64		26.99		25.45		6.20		9.12		4,710		
18	5.02		666.91		70.89		26.97		25.40		6.19		9.03		4,860		
19	5.06		664.33		71.44		26.96		25.48		6.20		9.09		4,800		
20	5.06		675.98		71.95		26.99		25.42		6.22		9.13		4,850		
Min	5.01		654.35		70.66		26.95		25.40		6.16		9.03		4,710		
Max	5.12		698.70		74.81		27.02		25.51		6.33		9.16		4,890		
AVE	5.06		673.63		71.81		26.98		25.46		6.23		9.09		4,821		
Result	OK		OK		OK		OK		OK				OK				
ROHS															Result	Final Disposition ■ YES □ NO	
XRF																	
The Hazardous substances refer below list																	
WonT	Cd(70ppm↓)	Cr(700ppm↓)	Hg(700ppm↓)	Pb(700ppm↓)	Br(900ppm↓)	Cl(900ppm↓)	Sb(700ppm↓)	Sr(900ppm↓)	S(10,000ppm↓)	OK	This inspection lot complies with our shipment inspection standards and its quality is guaranteed (company seal)						
Luxshare																	



7. XRF testing



WON TECH

XRF TEST REPORT

C H E C K	Prepared By	General Manager	President
	2-28	2-28	2-28

No	Ngày kiểm tra	Mode	Lot	Chi tiết điểm đo RoHS	Phân loại chất	Pb	Cd	Hg	Cr	Cl	Sb	Sn	S	Br	Judge
					Organic	700	70	700	700	900	1000	900	10,000	900	
					Inorganic	700	70	700	700	-	1000	-	-	-	
1	2-28	W9	T6228	Coil	Inorganic	N.D	N.D	N.D	N.D	-	N.D	-	-	-	PASS
2	2-28	W9	T6228	Coil Solder	Inorganic	N.D	N.D	N.D	N.D	-	N.D	-	-	-	PASS
3	2-28	W9	T6228	Magnet	Inorganic	N.D	N.D	N.D	N.D	-	N.D	-	-	-	PASS
4	2-28	W9	T6228	Magnet Plate	Inorganic	N.D	N.D	N.D	226.16	N.D	N.D	N.D	N.D	N.D	PASS
5	2-28	W9	T6228	PI Tape	Organic	N.D	N.D	N.D	N.D	N.D	N.D	N.D	118.41	6.09	PASS
6	2-28	W9	T6228	Tube	Organic	15.42	N.D	N.D	7.41	N.D	N.D	N.D	N.D	N.D	PASS
7	2-28	W9	T6228	FPCB 1	Organic	N.D	N.D	N.D	N.D	N.D	N.D	N.D	146.40	N.D	PASS
8	2-28	W9	T6228	FPCB 2	Inorganic	N.D	N.D	N.D	N.D	-	N.D	-	-	-	PASS
9	2-28	W9	T6228	EMI GASKET	Inorganic	15.51	N.D	N.D	N.D	N.D	N.D	132.35	124.70	6.38	PASS
10	2-28	W9	T6228	Feritte	Inorganic	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	PASS
11	2-28	W9	T6228	Coil Tape	Organic	15.65	N.D	N.D	13.97	N.D	N.D	N.D	N.D	N.D	PASS
12	2-28	W9	T6228	Bracket Tape	Organic	N.D	N.D	N.D	N.D	N.D	N.D	N.D	99.52	5.85	PASS
13	2-28	W9	T6228	Magnet Plate Tape	Organic	N.D	N.D	N.D	N.D	N.D	N.D	N.D	79.95	N.D	PASS
14	2-28	W9	T6228	Tape Lower	Organic	N.D	N.D	N.D	N.D	N.D	N.D	N.D	147.98	N.D	PASS
15	2-28	W9	T6228	Label Marking	Organic	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	PASS
16	2-28	W9	T6228	Bracket	Organic	15.28	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	PASS
17	2-28	W9	T6228	Bond	Organic	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	PASS

※ Exception clause

Thiết bị đo XRF gặp khó khăn trong việc phân biệt Cr3+ và Cr6+. Đối với các trường hợp vượt quá, nó được xác nhận là Cr3+. Không có vấn đề nào với Cr6+ trong Báo cáo ROHS được xác nhận

※ 예외 조항

>XRF 측정장비는 Cr3+과 Cr6+의 구분 측정이 어려움. 초과치에 대해서는 Cr3+로 확인. ROHS Report의 cr6+는 이상 없음 확인

Measurement Point



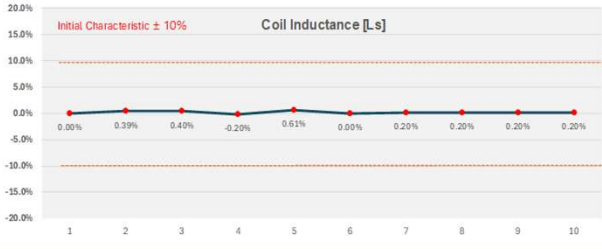
8. Reliability testing
8.1 Salt Spray Testing

Reliability Test Report				TEST ITEMS		Salt Spray Testing (염수분무 테스트)				 WON TECH								
Part Numer	WT-EPA-RF01 (EP-OL 715)	Application Model	Watch Coil Module (WL82)				Inspector	Nông Thị Minh Liễu		Date	2026-07-06							
TEST Condition & Method			판정 기준							Judgement								
Density 5 ± 0.5% / Temp. 35 ± 2 °C / PH 6.2 ~7.2 8 Hr Spray / 16 Hr Waiting → 3 Cycle (72 Hr)			1. Initial Characteristic (Ls/Rs/Rdc/Width/Length/Thickness) → Change rate within : ± 10% (변화율 ± 10% 이내) 2. Check oxidation of appearance (외관 산화 유무 확인)															
Conclusion 1.				Conclusion 2.														
Characteristic		Maximum rate of change (%)	Judgement	Note		Change in appearance		Before		After								
Inductance [Ls]		0.61%	0.61%	특성 판정 기준 (±10%) 내로 확인됨		No appearance specificity <외관(산화없음) 특이 사항 없음>												
Resistance [Rs]		0.12%	0.12%															
Coil Resistance [Rdc]		0.70%	0.70%															
Width		0.07%	0.07%															
Length		0.24%	0.24%															
Thickness		0.65%	0.65%															
NO.	Coil Inductance [Ls]			Coil Resistance [Rs]			Coil Resistance [Rdc]			Width			Length			Thickness		
	초기 Spec.		5.1uH ± 5%	초기 Spec.		650mΩ ± 20%	초기 Spec.		Max. 100 mΩ	초기 Spec.		27.00±0.2mm (26.80~27.20)	초기 Spec.		25.50±0.2mm (25.30~25.70)	초기 Spec.		Max. 5.9 mm
	Before	After	Rate (%)	Before	After	Rate (%)	Before	After	Rate (%)	Before	After	Rate (%)	Before	After	Rate (%)	Before	After	Rate (%)
Avg.	5.03	5.04	0.20%	661.52	661.92	0.06%	61.52	61.78	0.42%	26.98	26.99	0.03%	25.48	25.49	0.04%	6.23	6.25	0.21%
Max.	5.11	5.10	0.61%	690.81	691.00	0.12%	80.23	80.69	0.70%	27.02	27.02	0.07%	25.54	25.56	0.24%	6.30	6.32	0.65%
Min.	4.95	4.97	-0.20%	645.25	645.95	-0.03%	56.96	57.00	0.07%	26.96	26.97	-0.04%	25.45	25.46	-0.08%	6.19	6.19	-0.32%
1	5.04	5.04	0.00%	665.55	665.89	0.05%	57.02	57.25	0.40%	26.98	26.99	0.04%	25.48	25.50	0.08%	6.21	6.23	0.32%
2	5.08	5.10	0.39%	652.34	652.63	0.04%	57.94	58.00	0.10%	26.96	26.98	0.07%	25.45	25.49	0.16%	6.21	6.19	-0.32%
3	5.04	5.06	0.40%	652.54	652.69	0.02%	57.73	57.89	0.28%	26.99	27.00	0.04%	25.47	25.47	0.00%	6.30	6.28	-0.32%
4	5.11	5.10	-0.20%	690.81	691.00	0.03%	64.33	64.75	0.65%	27.02	27.01	-0.04%	25.54	25.52	-0.08%	6.30	6.32	0.32%
5	4.95	4.98	0.61%	667.60	667.39	-0.03%	58.46	58.64	0.31%	27.00	27.02	0.07%	25.50	25.56	0.24%	6.20	6.24	0.65%
6	5.05	5.05	0.00%	646.08	646.80	0.11%	58.27	58.66	0.67%	26.98	26.99	0.04%	25.51	25.52	0.04%	6.20	6.23	0.48%
7	4.98	4.99	0.20%	658.14	658.94	0.12%	56.96	57.00	0.07%	26.97	26.97	0.00%	25.48	25.46	-0.08%	6.21	6.23	0.32%
8	4.96	4.97	0.20%	645.25	645.95	0.11%	66.83	67.09	0.39%	26.97	26.98	0.04%	25.46	25.48	0.08%	6.25	6.24	-0.16%
9	5.00	5.01	0.20%	684.54	684.89	0.05%	80.23	80.69	0.57%	26.98	26.98	0.00%	25.46	25.47	0.04%	6.19	6.21	0.32%
10	5.09	5.10	0.20%	652.30	652.98	0.10%	57.40	57.80	0.70%	26.96	26.98	0.07%	25.48	25.47	-0.04%	6.25	6.28	0.48%

77.5689

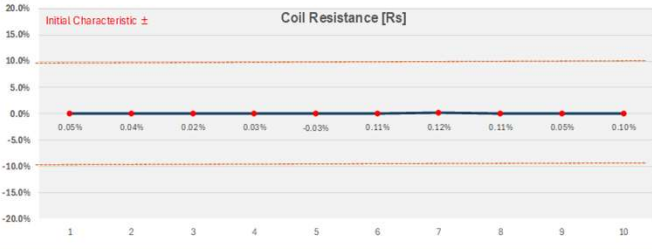
Initial Characteristic ± 10%

Coil Inductance [Ls]



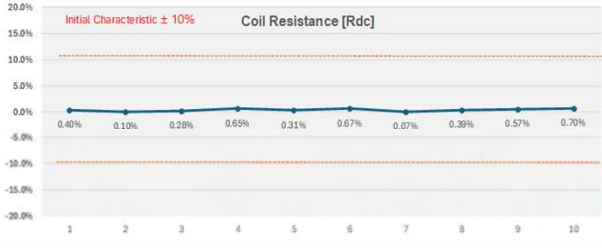
Initial Characteristic ±

Coil Resistance [Rs]



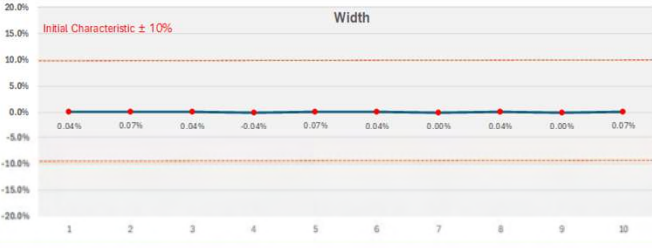
Initial Characteristic ± 10%

Coil Resistance [Rdc]



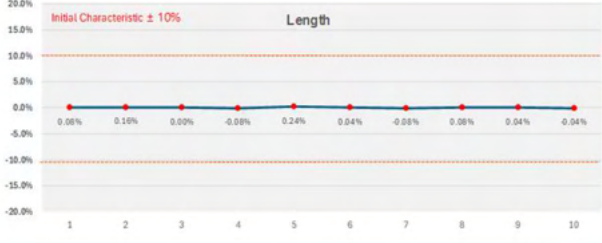
Initial Characteristic ± 10%

Width



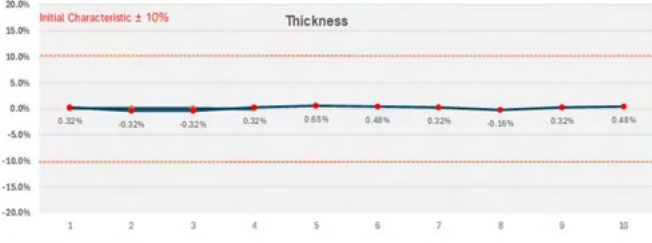
Initial Characteristic ± 10%

Length



Initial Characteristic ± 10%

Thickness





8. Reliability testing

8.2 Constant temperature and humid testing

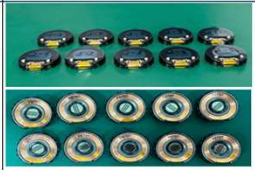
Reliability Test Report

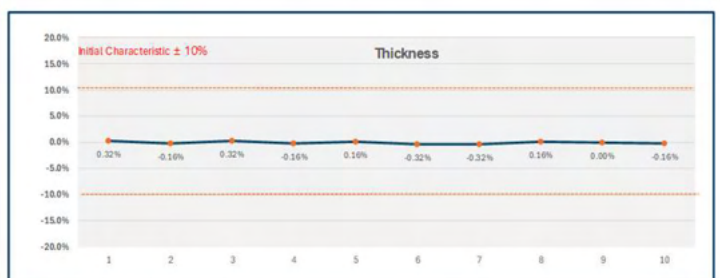
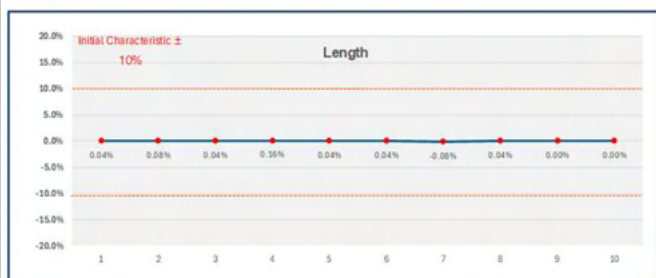
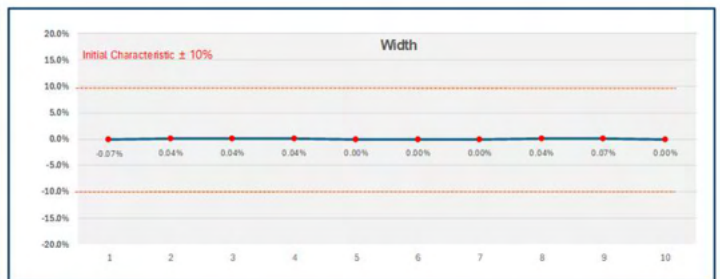
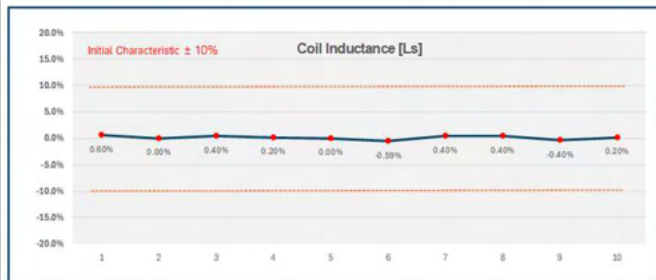
TEST
ITEMS

Constant temperature and humid testing (고온고습 테스트)



WON TECH

Part Numer	WT-EPA-RF01 (EP-OL 715)	Application Model		Watch Coil Module (WL82)						Inspector			Nông Thị Minh Liễu			Date		2026-07-06		
TEST Condition & Method				판정 기준												Judgement				
Temp. 80℃/Humi. 80% / 120Hr				1. Initial Characteristic (Ls/Rs/Rdc/Width/Length/Thickness) → Change rate within : ± 10% (변화율 ± 10% 이내) 2. Check oxidation of appearance (외관 산화 유무 확인)																
Conclusion 1.				Conclusion 2.																
Characteristic		Maximum rate of change (%)		Judgement	Note			Change in appearance			Before			After						
Inductance [LS]		0.60%		0.60%	특성 판정 기준 (±10%) 내로 확인됨			No appearance specificity <외관(산화없음) 특이 사항 없음>												
Resistance [Rs]		0.10%		0.10%																
Coil Resistance [Rdc]		1.08%		1.08%																
Width		0.07%		0.07%																
Length		0.16%		0.16%																
Thickness		0.32%		0.32%																
NO.	Coil Inductance [Ls]			Coil Resistance [Rs]			Coil Resistance [Rdc]			Width			Length			Thickness				
	초기 Spec.	5.1uH ± 5%		초기 Spec.	650mΩ ± 20%		초기 Spec.	Max. 100 mΩ		초기 Spec.	27.00±0.2mm (26.80~27.20)		초기 Spec.	25.50±0.2mm (25.30~25.70)		초기 Spec.	Max. 5.9 mm			
	Before	After	Rate (%)	Before	After	Rate (%)	Before	After	Rate (%)	Before	After	Rate (%)	Before	After	Rate (%)	Before	After	Rate (%)		
Avg.	5.03	5.04	0.12%	663.41	663.66	0.04%	60.38	60.56	0.31%	26.99	26.99	0.01%	25.48	25.48	0.04%	6.22	6.22	-0.02%		
Max.	5.09	5.09	0.60%	683.27	683.72	0.10%	77.85	77.58	1.08%	27.02	27.02	0.07%	25.54	25.52	0.16%	6.27	6.26	0.32%		
Min.	4.98	5.00	-0.59%	648.66	648.96	-0.08%	57.10	57.06	-0.35%	26.96	26.97	-0.07%	25.43	25.44	-0.08%	6.18	6.18	-0.32%		
1	5.03	5.06	0.60%	665.48	665.96	0.07%	57.78	57.97	0.33%	27.02	27.00	-0.07%	25.47	25.48	0.04%	6.19	6.21	0.32%		
2	5.09	5.09	0.00%	670.24	670.42	0.03%	58.44	58.54	0.17%	26.98	26.99	0.04%	25.47	25.49	0.08%	6.27	6.26	-0.16%		
3	5.05	5.07	0.40%	663.78	664.00	0.03%	58.37	58.36	-0.02%	26.97	26.98	0.04%	25.45	25.46	0.04%	6.18	6.20	0.32%		
4	5.03	5.04	0.20%	683.27	683.72	0.07%	60.79	60.97	0.30%	26.99	27.00	0.04%	25.43	25.47	0.16%	6.25	6.24	-0.16%		
5	5.04	5.04	0.00%	648.66	648.96	0.05%	58.07	58.70	1.08%	26.98	26.98	0.00%	25.49	25.50	0.04%	6.24	6.25	0.16%		
6	5.05	5.02	-0.59%	654.14	654.41	0.04%	77.85	77.58	-0.35%	27.00	27.00	0.00%	25.50	25.51	0.04%	6.25	6.23	-0.32%		
7	5.01	5.03	0.40%	652.29	652.92	0.10%	59.18	59.81	1.06%	27.02	27.02	0.00%	25.54	25.52	-0.08%	6.20	6.18	-0.32%		
8	4.98	5.00	0.40%	657.82	657.28	-0.08%	58.19	58.65	0.79%	26.98	26.99	0.04%	25.47	25.48	0.04%	6.19	6.20	0.16%		
9	5.06	5.04	-0.40%	659.27	659.72	0.07%	57.99	57.99	0.00%	26.96	26.98	0.07%	25.49	25.49	0.00%	6.20	6.20	0.00%		
10	5.00	5.01	0.20%	679.12	679.22	0.01%	57.10	57.06	-0.07%	26.97	26.97	0.00%	25.44	25.44	0.00%	6.22	6.21	-0.16%		

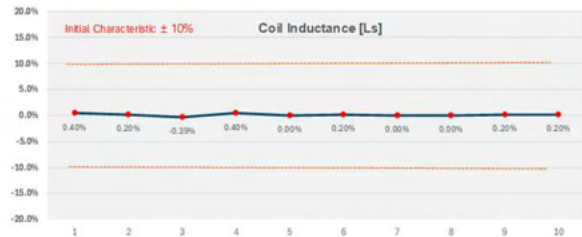


8. Reliability testing
8.3 Thermal Shock Testing

Reliability Test Report				TEST ITEMS		Thermal Shock Testing (열충격 TEST)						WON TECH						
Part Number	WT-EPA-RF01 (EP-OL 715)		Application Model	Watch Coil Module (WL82)						Inspector	Nông Thị Minh Liễu		Date	2026-07-06				
TEST Condition & Method				판정 기준										Judgement				
Temp. -40°C ~ 85°C / 30 min / 72 Cycle				1. Initial Characteristic (Ls/Rs/Rdc/Width/Length/Thickness) → Change rate within : ± 10% (변화율 ± 10% 이내) 2. Check oxidation of appearance (외관 산화 유무 확인)														
Conclusion 1.				Conclusion 2.														
Characteristic		Maximum rate of change (%)	Judgement	Note		Change in appearance		Before			After							
Inductance [Ls]		0.40%	0.40%	특성 판정 기준 (±10%) 내로 확인됨		No appearance specificity <외관(산화없음) 특이 사항 없음>												
Resistance [Rs]		0.12%	0.12%															
Coil Resistance [Rdc]		3.44%	3.44%															
Width		0.07%	0.07%															
Length		0.12%	0.12%															
Thickness		0.48%	0.48%															
NO.	Coil Inductance [Ls]			Coil Resistance [Rs]			Coil Resistance [Rdc]			Width			Length			Thickness		
	조기 Spec.	5.1uH ± 5%		조기 Spec.	650mΩ ± 20%		조기 Spec.	Max. 100 mΩ		조기 Spec.	27.00±0.2mm (26.80~27.20)		조기 Spec.	25.50±0.2mm (25.30~25.70)		조기 Spec.	Max. 5.9 mm	
	Before	After	Rate (%)	Before	After	Rate (%)	Before	After	Rate (%)	Before	After	Rate (%)	Before	After	Rate (%)	Before	After	Rate (%)
Avg.	5.03	5.04	0.12%	657.60	657.77	0.03%	58.89	59.58	1.16%	27.00	27.00	0.02%	25.48	25.48	0.00%	6.23	6.25	0.26%
Max.	5.11	5.12	0.40%	690.76	690.26	0.12%	61.99	62.06	3.44%	27.02	27.02	0.07%	25.54	25.52	0.12%	6.29	6.32	0.48%
Min.	4.97	4.97	-0.39%	642.53	642.03	-0.08%	57.57	57.97	-0.57%	26.97	26.98	-0.07%	25.43	25.45	-0.20%	6.19	6.21	-0.32%
1	5.04	5.06	0.40%	647.57	647.68	0.02%	58.53	60.12	2.72%	26.99	27.00	0.04%	25.50	25.52	0.08%	6.21	6.24	0.48%
2	5.02	5.03	0.20%	647.35	647.54	0.03%	58.10	60.10	3.44%	26.99	27.00	0.04%	25.50	25.49	-0.04%	6.26	6.24	-0.32%
3	5.07	5.05	-0.39%	653.23	653.32	0.01%	57.57	59.26	2.94%	26.99	27.00	0.04%	25.51	25.49	-0.08%	6.19	6.21	0.32%
4	5.01	5.03	0.40%	647.51	647.78	0.04%	57.62	58.26	1.11%	27.02	27.01	-0.04%	25.54	25.49	-0.20%	6.22	6.23	0.16%
5	5.05	5.05	0.00%	684.49	684.99	0.07%	58.45	59.54	1.86%	27.01	26.99	-0.07%	25.48	25.48	0.00%	6.24	6.24	0.00%
6	4.97	4.98	0.20%	643.77	644.06	0.05%	57.79	57.97	0.31%	27.00	27.02	0.07%	25.47	25.49	0.08%	6.23	6.26	0.48%
7	5.06	5.06	0.00%	642.53	642.03	-0.08%	59.34	59.00	-0.57%	27.00	27.01	0.04%	25.47	25.46	-0.04%	6.20	6.23	0.48%
8	4.97	4.97	0.00%	662.53	663.01	0.07%	61.99	62.06	0.11%	27.00	27.01	0.04%	25.45	25.47	0.08%	6.22	6.24	0.32%
9	5.11	5.12	0.20%	656.29	657.05	0.12%	61.36	61.24	-0.20%	26.98	26.99	0.04%	25.43	25.46	0.12%	6.26	6.27	0.16%
10	5.02	5.03	0.20%	690.76	690.26	-0.07%	58.18	58.22	0.07%	26.97	26.98	0.04%	25.44	25.45	0.04%	6.29	6.32	0.48%

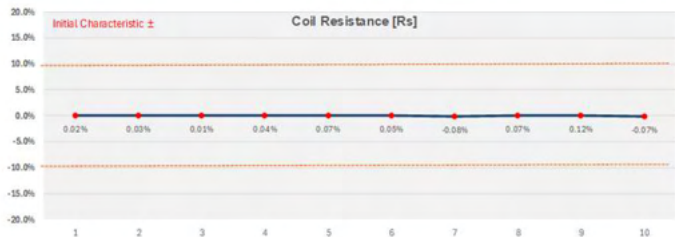
Initial Characteristic ± 10%

Coil Inductance [Ls]



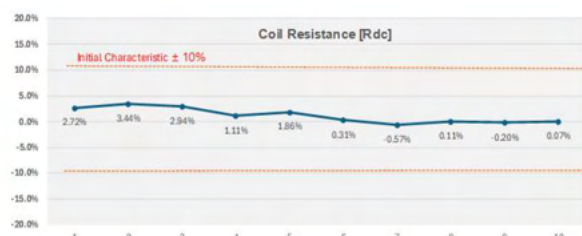
Initial Characteristic ±

Coil Resistance [Rs]



Initial Characteristic ± 10%

Coil Resistance [Rdc]



Initial Characteristic ± 10%

Width



Initial Characteristic ± 10%

Length



Initial Characteristic ± 10%

Thickness





WON TECH

A photograph of a brown cardboard shipping box. On the top left, there is a white label with the text 'WLN TECHNOLOGY VINA CO., LTD.' and a table with fields for MODEL, DATE RECEIVED, P/O NO., REF CODE, ITEM, LOT NO., PRODUCT CODE, and QUANTITY. A circular 'DHL PASS' sticker is placed over the bottom part of this label. Below the label, a 'WONTECH' logo is visible. On the right side of the box, there is a large red 'FRAGILE' sticker. The sticker features a white wine glass icon with a crack, the text 'HÀNG DỄ VỠ - XIN NHẪN TAY', four icons representing handling instructions (fragile, no stacking, no fire, no rain), and the text 'THANK YOU!' at the bottom.