样 品 承 认 书

SAMPLE SPECIFICATION FOR APPROVAL

供应商名称 SUPPLIER	Shenzhen Deman Electronics Technology Co.,Ltd.
客户名称 CUSTOMER	FAIOT Co., LTD
物料名称 DESCRIPTION	FH22-NFC-Antenna-F2096
物料规格 SPECIFICATION	
物料编码 CUSTOMER PART NO	
供应商审核(公章) SUPPLIER APPROVAL	
客户审核 CUSTOMER APPROVAL	
承认日期 APPROVAL DATE	

Confirm and sign off			
Base band	RF	ME	ID
Resource	SQE	PQM	

Contents

1、 Sample
need ■ ; no need □

2、 Specification sheet, drawings, material report, physical property table, and SOP for fixture inspection
paper archive ■ ; electronic document ■

3、 Appearance Inspection report
paper archive ■ ; electronic document ■

4、dimension report
paper archive ■ ; electronic document ■

5、functional test report
paper archive □ ; electronic document ■

6、Reliability Test Report
paper archive ■ ; electronic document ■

7、Key dimension CPK
paper archive ■ ; electronic document ■

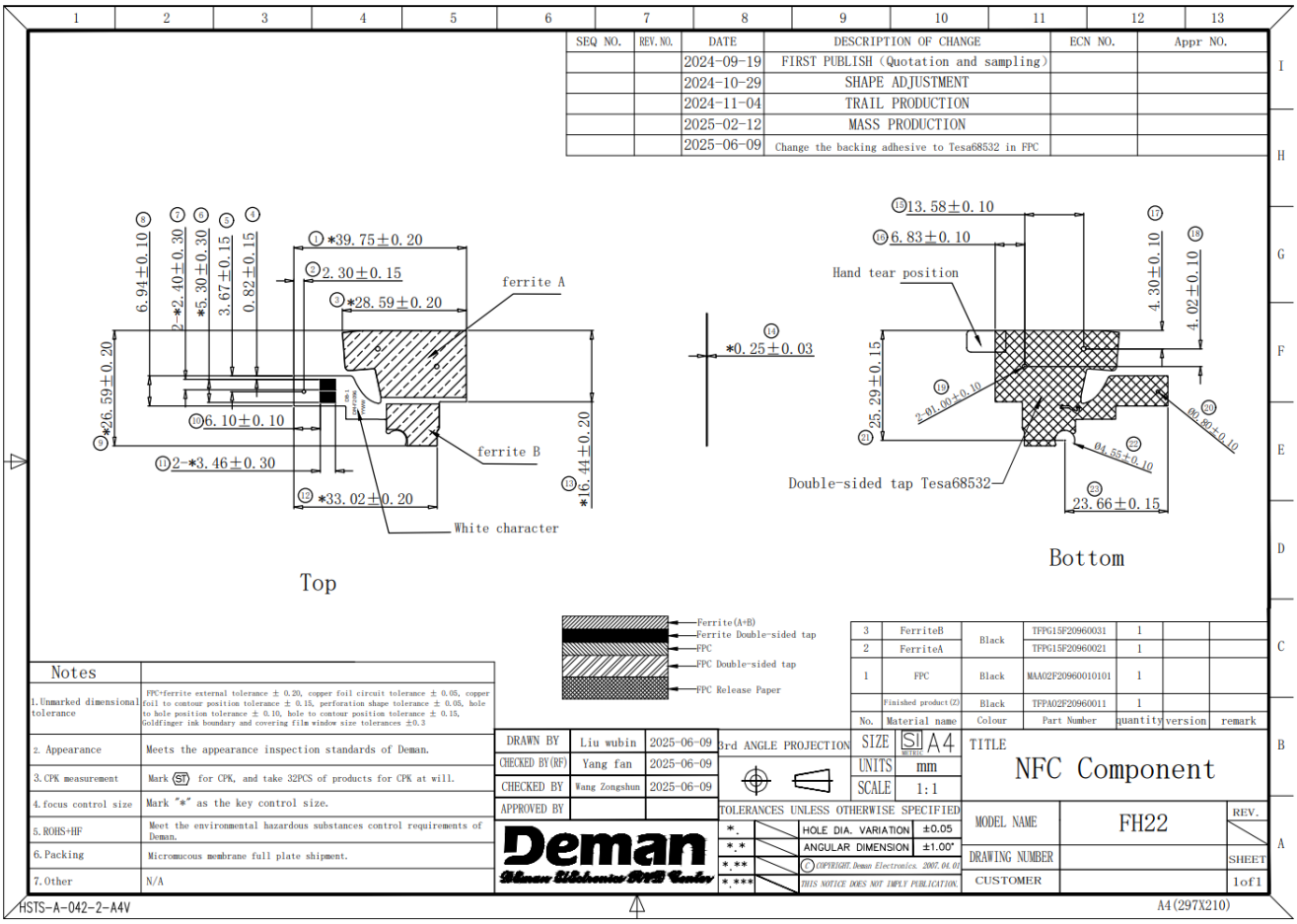
8、Flow chart
paper archive □ ; electronic document■

9、manner of packing
paper archive ■ ; electronic document ■

10、Environmental protection materials (only electronic files are required)
Material composition questionnaire ■ ; RoHS ■ ; Reach ■ ; HF ■

Remark: ■ Provide as needed ; □ It is not necessary to provide

Drawing


SEQ NO. | REV. NO. | DATE | DESCRIPTION OF CHANGE | ECN NO. | Appr NO.
2024-09-19 FIRST PUBLISH (Quotation and sampling)
2024-10-29 SHAPE ADJUSTMENT
2024-11-04 TRAIL PRODUCTION
2025-02-12 MASS PRODUCTION
2025-06-09 Change the backing adhesive to Tesa68532 in FPC
6.94±0.10
2-*2.40±0.30
*5.30±0.30
3.67±0.15
0.82±0.15
*39.75±0.20
2.30±0.15
*28.59±0.20
ferrite A
*26.59±0.20
6.10±0.10
2-*3.46±0.30
ferrite B
*33.02±0.20
*16.44±0.20
White character
Top
*0.25±0.03
13.58±0.10
6.83±0.10
Hand tear position
4.30±0.10
4.02±0.10
25.29±0.15
2-Ø1.00±0.10
Ø0.80±0.10
Ø4.55±0.10
Double-sided tap Tesa68532
23.66±0.15
Bottom
Ferrite(A+B)
Ferrite Double-sided tap
FPC
FPC Double-sided tap
FPC Release Paper
3 FerriteB Black TFPG15F20960031 1
2 FerriteA TFPG15F20960021 1
1 FPC Black MAA02F20960010101 1
Finished product(Z) Black TFPA02F20960011 1
No. Material name Colour Part Number quantity version remark
Notes
1. Unmarked dimensional tolerance: FPC+ferrite external tolerance ± 0.20, copper foil circuit tolerance ± 0.05, copper foil to contour position tolerance ± 0.15, perforation shape tolerance ± 0.05, hole to hole position tolerance ± 0.10, hole to contour position tolerance ± 0.15, Goldfinger ink boundary and covering film window size tolerances ±0.3
2. Appearance: Meets the appearance inspection standards of Deman.
3. CPK measurement: Mark (ST) for CPK, and take 32PCS of products for CPK at will.
4. focus control size: Mark "*" as the key control size.
5. ROHS+HF: Meet the environmental hazardous substances control requirements of Deman.
6. Packing: Micromucous membrane full plate shipment.
7. Other: N/A
DRAWN BY Liu wubin 2025-06-09
CHECKED BY(RF) Yang fan 2025-06-09
CHECKED BY Wang Zongshun 2025-06-09
APPROVED BY
Deman
3rd ANGLE PROJECTION
SIZE A4
UNITS mm
SCALE 1:1
TOLERANCES UNLESS OTHERWISE SPECIFIED
*. HOLE DIA. VARIATION ±0.05
. ANGULAR DIMENSION ±1.00°
*.** COPYRIGHT. Deman Electronics. 2007.04.01
*.*** THIS NOTICE DOES NOT IMPLY PUBLICATION.
TITLE
NFC Component
MODEL NAME FH22
REV.
DRAWING NUMBER
SHEET
CUSTOMER
1of1
HSTS-A-042-2-A4V
A4(297X210)

Document Number	Appendix 1
WI-042-012	**NFC Finished Product Inspection Sampling and Judgment Standards (General)**

Inspection items	inspection content	tool	mpling standar	Judgment criteria	Accept Standard
appearance	Paste off center	Film ruler	eneral Level I	W≤0.2mm。	The appearance sampling standard follows the general standard of GB2828.1-2003, Level II (MA=0.4, MI=0.65); Size data, electrical properties, and reliability: 0 accepted and 1 rejected.
	Surface scratches			L ≤ 5mm or W ≤ 0.2mm.	
	Dirty and shiny marks			L ≤ 3mm or W ≤ 2mm and not visible to the naked eye at 30cm; Wipe off dirt and bright marks are not allowed.	
	Defects and excess materials			L ≤ 0.3mm or W ≤ 0.1mm.	
	surface scratch			L ≤ 3mm or W ≤ 0.2mm, exposed substrate is not allowed.	
	Surface point defects (particles, bubbles, pits)			D≤0.3mm, Excessive thickness of the product is not allowed.	
	Surface foreign matter			L ≤ 1mm or W ≤ 0.15mm, excessive product thickness is not allowed.	
	Positioning hole offset			Deviation ≤ 0.2mm, hole blockage is not allowed.	
	sawtooth			W≤0.15mm。	
	Adhesive tape attachment deviation			W≤0.2mm。	
	Golden Finger Embossing			轻微压点D≤0.25mm，H≤0.02mm，N≤2 。	
	Scratches on golden fingers			The coating is undamaged, L≤3mm, W≤0.03mm, Not counted; 0.05mm<W≤0.05mm, L≤3mm, N≤2, DS≥15mm; W>0.05mm or L>3mm are not allowed.	
	Crease	see		The deformation, warping, and delamination of the product caused by wrinkles are not allowed. For slight wrinkles, refer to the	
	Incomplete circuit and residual copper			Do not allow/reference limit samples.	
	Silkscreen			Visually identifiable.	
	crack			Not visible to the naked eye.	
	Product color difference			Do not allow/reference limit samples.	
	adhesive residue			Do not allow/reference limit samples.	
	Copper leakage (surface, side, via)			Do not allow/reference limit samples.	
	Post backwards			Do not allow/reference limit samples.	
	Multiple stickers (ferrite, FPC)			Do not allow/reference limit samples.	
	Cutting off the gap			edly punching and cutting products with W ≤ (	
	layering			Do not allow/reference limit samples.	
	Gold Finger Ink Overflow			Exceeding the size limit is not allowed/reference limit sample	
	Golden finger defect			D≤0.15mm。	
	Golden finger oxidation			Do not allow/reference limit samples.	
size	According to the drawings of each model, inspect the key dimensions	Calipers/ image measuring	5pcs/batch	If the size exceeds the tolerance on the drawing, it will be rejected; Otherwise, proceed to the next step of verification.	
	According to the drawings of each model, mark the "ST" dimension	Calipers/ image measuring	35pcs/PO	CPK needs to be greater than 1.33. If it is not met, feedback should be given for improvement	
ctrical prop	According to the product dependency book, measure the electrical properties	LCR tester	35pcs/day	Electrical properties exceeding the range, rejected; Otherwise, proceed to the next step of verification	
reliability	Temperature shock	Thermal Shock Chamber	2pcs/time/montl	Refer to reliability testing standards	
	Steady damp-heat	Humidity Chamber	2pcs/time/montl	Refer to reliability testing standards	
	high temperature storage	High temperatu	2pcs/time/montl	Refer to reliability testing standards	
	low temperature storage	Low temperatu	2pcs/time/montl	Refer to reliability testing standards	

Note: 1. L represents length, W represents width, H represents height, D represents diameter, S represents area, DS represents spacing, and N represents quantity.
2. When customers have special requirements/specific models, the signed limit sample shall be used as the standard.

Size report

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file type：table

Table Number	table name		
F-042-005-20	Full size inspection report		
PRODUCT MODEL	F2096	Product batch number	
Date of observation	2025/2/26	Test sample size	5
Test equipment	projector	Tested by	Xuehua Kang

Serial Number	Standard size	Tolerence	negative toleranc	Actual measurement value					Judge
1	39.75	0.15	0.15	39.74	39.76	39.76	39.75	39.74	OK
2	2.3	0.15	0.15	2.26	2.29	2.27	2.27	2.28	OK
3	28.59	0.15	0.15	28.59	28.60	28.59	28.60	28.60	OK
4	0.82	0.15	0.15	0.81	0.79	0.80	0.80	0.81	OK
5	3.67	0.15	0.15	3.65	3.62	3.62	3.63	3.53	OK
6	5.3	0.3	0.3	5.30	5.30	5.33	5.32	5.34	OK
7	2.4	0.3	0.3	2.40	3.39	2.40	2.41	3.39	OK
8	6.94	0.1	0.1	6.89	6.92	6.94	6.92	6.94	OK
9	26.59	0.15	0.15	26.63	26.57	26.58	26.59	26.61	OK
10	6.1	0.1	0.1	6.07	6.02	6.05	6.05	6.06	OK
11	3.46	0.3	0.3	3.47	3.48	3.50	3.52	3.48	OK
12	33.02	0.15	0.15	33.00	33.02	33.03	33.02	33.01	OK
13	16.44	0.15	0.15	16.40	16.39	16.41	16.40	26.39	OK
14	0.23	0.03	0.03	0.22	0.23	0.22	0.23	0.22	OK
15	13.58	0.10	0.10	13.59	13.63	13.62	13.63	13.62	OK
16	6.83	0.10	0.10	6.83	6.79	6.80	6.79	6.80	OK
17	4.3	0.10	0.10	4.28	4.28	4.28	4.29	4.28	OK
18	4.02	0.10	0.10	4.03	4.00	4.03	4.00	4.02	OK
19	1	0.10	0.10	1.00	0.99	0.93	0.98	0.95	OK
20	0.8	0.10	0.10	0.80	0.81	0.80	0.81	0.80	OK
21	25.29	0.15	0.15	25.33	25.30	25.32	25.31	25.30	OK
22	4.55	0.10	0.10	4.62	4.63	4.61	4.62	4.61	OK
23	23.66	0.15	0.15	23.60	23.63	23.60	23.60	23.62	OK

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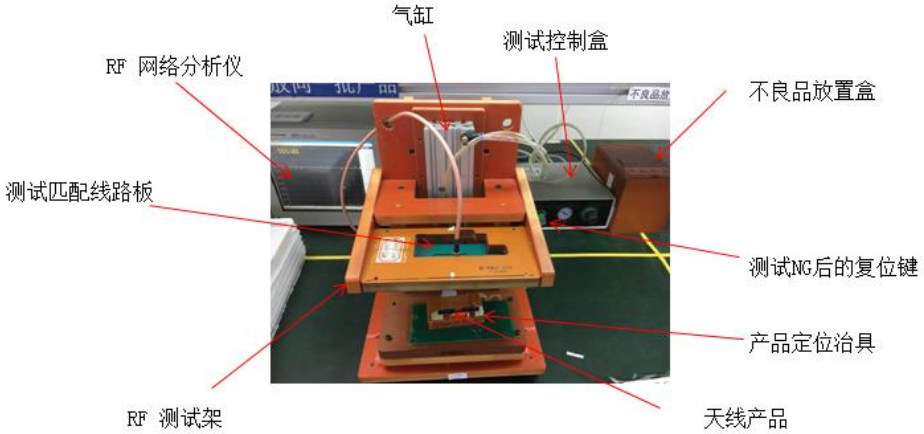
1.Electrical Specifications.

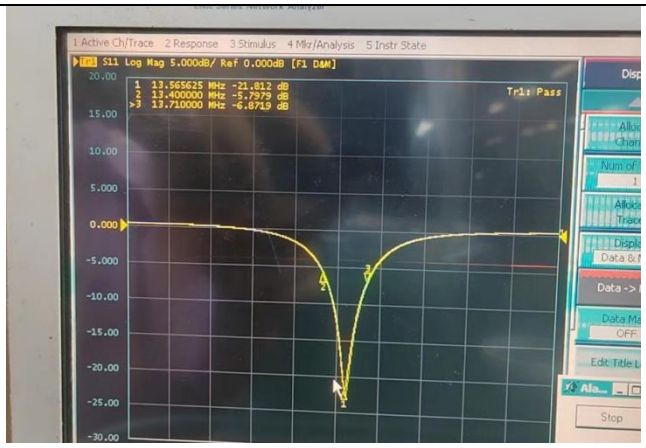
Test item	Test environment	FH22 specification				
		Min	Typ	Max	Units	Notes
IC	–	–		–	–	THN31FGB1N
Antenna frequency	–	–	13.56	–	MHz	-
Antenna inductance	1 MHz	1.433	1.473	1.513	μH	±0.04
Antenna resistance	1 MHz	0.98	1.18	1.38	Ω	±0.2
Ferrite permeability	13.56 MHz	135	150	165		±10%
Magnetic loss of ferrite	13.56 MHz	–	–	5		<=5

LCR control

Scope of control: 1MHz inductance: : ±0.04
1MHz resistance: ±0.2
S11 control
Scope of control: 13.56±0.15MHz

S11 Management and control mode

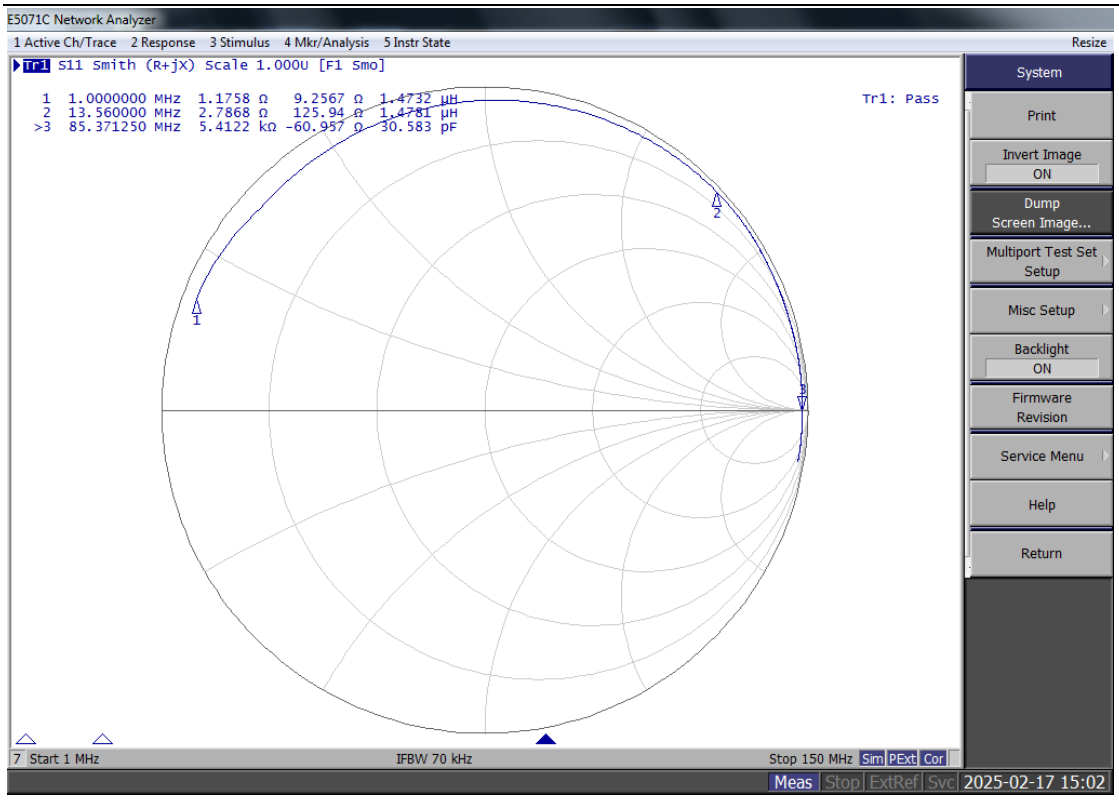




Scope of control：13.56±0.15MHz

2. Parameter test screenshot and test method diagram

Antenna free space test



3. Read/write mode Distance test data and scene photos

读卡类型	Tag1	Tag2	Tag3	Tag4A	Tag5
读卡距离	42mm	43mm	42mm	20mm	60mm

Tag1(Topaz-512)

Tag 2 (Ultralight)

Tag3(Sony-Felica)

Tag 4 (Desfire)

Note: The above reading distance is the reading distance of the debugging machine, and the reading distance of the trial production and mass production machine shall be subject to the actual situation.

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可靠性测试记录

customer	Guangyi	applicant	Xuehua Kang	pplication da	2025/2/11	ate of observati	2025/2/11
Task Number		Sample name	FH22	mple attribut	NFC	Sample model	F2096

al Nu	Test items	Experimental conditions	dgment criter	er of sam	ecision outcom	notes
1	Temperature shock	Take the product and store it at a low temperature of -40 ℃± 2 ℃ for 0.5 hours. Within 1 minute, store it at a high temperature of 85 ± 2 ℃ for 0.5 hours. This is one cycle, with a total of 48 cycles. Let it stand for 2 hours	Check the appearance of the coating for any abnormalities, such as detachment,	3	OK	
2	high temperature storage	85 ℃, stored for 48 hours, left to stand for 2 hours	Check the appearance of the coating for any abnormalities, such as detachment,	3	OK	
3	low temperature storage	-40 ℃, stored for 48 hours, left to stand for 2 hours	Check the appearance of the coating for any abnormalities, such as detachment,	3	OK	
4	Steady damp-heat	Take the product at a temperature of 60 ℃± 2 ℃ and a humidity of 95 ± 2%; Maintain for 48 hours, let it stand for 2 hours	Check the appearance of the coating for any abnormalities, such as detachment,	3	OK	
5	Salt spray test	Take the product, in the environment of 35 ± 3 ℃, the PH value is in the range of 6.5-7.2, the salt water concentration is 5 ± 1%, and continuous spray for 48H	Check the appearance of the coating for any abnormalities, such as detachment, cracks	3	OK	

ehensive jud	OK	surveyor	Chen Hongwei	to examine	Xu Shuangquan

Key dimensions CPK

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file type: table version: A

Table Number	table name
F-042-005-21	Size CPK Inspection Report

PRODUCT MODEL	F2096-NFC	Product batch number	\
e of observat	2025/2/25	Test sample size	32PCS
Test equipment	projector	Tested by	Xuehuang Kang

Size number	1	9	14							
Standard size	39.75	26.59	0.23							
Tolerence	0.15	0.15	0.03							
negative tolerance	(0.15)	(0.15)	(0.03)							
specification	39.90	26.74	0.26							
Specification	39.60	26.44	0.20							
1	39.76	26.58	0.22							
2	39.75	26.58	0.22							
3	39.76	26.59	0.23							
4	39.76	26.58	0.22							
5	39.79	26.58	0.22							
6	39.77	26.56	0.22							
7	39.76	26.58	0.22							
8	39.76	26.59	0.23							
9	39.76	26.59	0.23							
10	39.77	26.58	0.23							
11	39.79	26.58	0.23							
12	39.76	26.58	0.23							
13	39.76	26.62	0.22							
14	39.76	26.58	0.23							
15	39.76	26.59	0.24							
16	39.77	26.58	0.22							
17	39.76	26.58	0.23							
18	39.74	26.62	0.23							
19	39.76	26.58	0.22							
20	39.76	26.56	0.22							
21	39.77	26.58	0.24							
22	39.76	26.62	0.22							
23	39.74	26.59	0.22							
24	39.78	26.58	0.22							
25	39.79	26.59	0.23							
26	39.74	26.58	0.22							
27	39.81	26.62	0.23							
28	39.73	26.56	0.23							
29	39.76	26.62	0.22							
30	39.77	26.58	0.23							
31	39.76	26.56	0.22							
32	39.78	26.58	0.22							
MAX	39.81	26.62	0.24							
MIN	39.73	26.56	0.22							
AVERAGE	39.76	26.59	0.23							
STDEV	0.02	0.02	0.01							
CP	3.08	2.90	1.61							
Cpk	2.79	2.82	1.36							
judge	OK	OK	OK							

notes: CPK≥1.33. The customer has requested to execute according to the requirements

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Flow chart

Deman NFC Antenna process flow chart

Model : F2096

Process description	process flow chart	note
Incoming inspection	1	
Put in storage	2	
Prepare raw materials	3	
Molded ferrite A	4	
appearance A	5	Inspect the appearance of the mold slice
Molded ferrite B	6	
appearance B	7	Inspect the appearance of the mold slice
Attach ferrite A	8	Positive side, ferrite is the outside surface
Attach ferrite B	9	Positive side, ferrite is the outside surface
pressing	10	Rolling
Peel the film	11	
Electrical test	12	LCR test
appearance	13	Inspect the appearance of the finished product
Point bagging	14	Open mouth PE bag, 50pcs/bag
packaging	15	
Stock in	16	

Process Identifier:

Production process ▭ Stock in ▽

Inspection process ◇ Preparation process ○

Table number: F-023-085B

Packaging method

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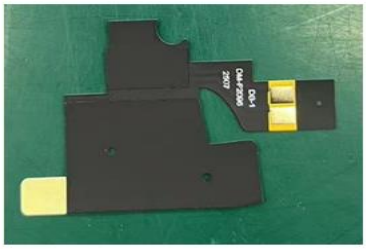
Document number	File name	Approval	Audit	Make
HDT-25-02-15 Effective date: 2025/2/24	F2096 Packaging Specification		-	HuZhengtian 2025/2/24



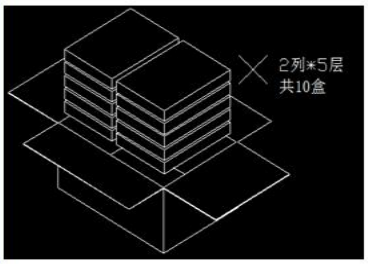
1: Single-piece shipment or oth

Figure 2: Bag packaging method

Figure 3: Packaging inner box (250*185*33mm)

Figure 4: Arrangement of boxes (Tape the box with transparent tape)

第1页



Box placement form inside the

Deman Shipment Mark 出货标签

物料编号	331300000173	订单号	4500128814
物料名称	FH22-NFC组件	供应商名称	深圳市海德门电子有限公司
德门项目号	F2096	生产日期	2025-02-25
数量	65	批号	250225153
单位	PCS	PASS章	PASS

Figure 6: Outer box shipping label

Figure 7: Packaging outer box (NFC blank carton, sealed with transparent tape)

Figure 8: Outer box with shipping label, RoHS label, weight label

Product part number	TFPA02F20960011	
Product name	NFC-F2096 Finished product (Z) black	
packaging method	Opening bag+inner box+outer box	
Bagged	Quantity	50PCS/bag
Inner box	Number of layers	6 rows*5 columns; 30 bags total 1500 pcs
Outer box	Number of inner boxes	2 boxes * 5 layers, 15Kpcs

Note

1. Products judged as OK by QC shall be placed neatly in an open bag, with each 50 pieces as a unit, and the bag should be tied tightly;

2. Fill the inner box with 6 bags * 5 columns, a total of 30 bags with 1500 pieces;

3. The shipping label (material code, material name, supplier name, quantity, production date, etc.), RoHS label, and weight label shall be attached to the surface of the inner box;

4. The actual shipping label on the outer box shall be subject to the format and content required by the customer;

5. If the quantity is less than one open bag or one inner box, it shall be packed according to the original packaging of one open bag or one box, and if the quantity is less than one box, it shall be placed according to the actual number of boxes, and the remaining space shall be filled with foam or bubble bags and sealed with tape;

6. Seal the carton with tape in the shape

Storage conditions	Temperature: 10-30° C; Humidity: 30-70% RH Room temperature and humidity, avoid direct.
Validity period	Production date 6 month

henzhen Hydemen Electronics Co., Ltd.

Environmental Information

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表格编号 F2096-NFC

版本：A

环境有害物质符合性清单

供应商	物料种类	项目	零件名称	零件供应商	均质材料名称	材料重量（mg）	物质名称	CAS No	物质重量（mg）	物质含量（%）	限用物质含量PPM（ROHS 2.0/卤素）																
											测试机构	报告编号	测试日期	有效日期	Pb <90	Cd <5	Hg <5	Cr6+ <10	PBB 0	PBDE 0	DEHP <10	BBP <100	DBP <100	DIBP <10	Cl <500	Br <500	Cl+Br <900
	FPC	F2096-NFC	基材	锦荣	半对半双面电解铜	67.1	Polyimide Film	25038-81-7	12.51	18.64%	CTI	A2240123200101001E	2024/3/15	2025/3/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
							Electrode Posited copper	7440-50-8	39.16	58.36%																	
							Epoxy Resin	25036-25-3	5.96	8.88%																	
							CTBN	9003-18-3	5.21	7.76%																	
							Al H3O3	21645-51-2	4.27	6.36%																	
			背胶	晶华	MTM303	30.5	PET	25038-59-9	27.45	90.00%	CTI	A2240780507101002 08C	2024/12/16	2025/12/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
							Acrylate Copolymer Adhesive	Trade Secret	3.05	10.00%																	
			阻焊油墨	优力	PSM-800FSMBL6	18.3	環氧丙烯酸酯寡聚物	28064-14-4	8.42	46.00%	SGS	ETR24600712 ETR24600713	2024/6/14	2025/6/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	450	ND	ND
							二氧化矽	7631-86-9	2.47	13.50%																	
							芳香族溶劑	64742-94-5	0.92	5.00%																	
							二丙二醇甲基醚	34590-94-8	0.92	5.00%																	
							碳黑	1333-86-4	0.73	4.00%																	
							硫酸鋇 BaS04	13462-86-7	4.58	25.00%																	
							光敏劑及其它	5495-84-1	0.27	1.50%																	
			字符油墨	高仕	白油UM-300 WM13	3.66	丙烯酸单体	13048-33-4	3.26	89.00%	CTI	A2240363801101001E A2240363801101004E	2024/6/26	2025/6/25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
							钛白粉	13463-67-7	0.37	10.00%																	
							光引发剂 819	162881-26-7	0.04	1.00%																	
			镍/金	博永凯	镍/金	2.44	镍	7440-02-0	2.32	95.00%	CTI	A2240634006101005E	2024/10/22	2025/10/21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
							金	7440-57-5	0.12	5.00%																	

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