SPECIFICATION FOR APPROVAL

產品規格承認書

客戶名稱

CUSTOMER: _____

產品名稱
PRODUCT NAME: _____

型號規格
MODEL: _____

日　　期
DATE: _____

審核 **CHECKED BY**	批准 **APPROVED BY**

備註：承認簽章後請回覆一份承認書（或複印件）給我司

Note: Please return one signed copy with your company chop if approved.

Technical Data for Wire Wound Ferrite Chip Inductors

Type: FI25T- □□□□-PF

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1. Precaution:

a. Storage conditions: recommended conditions is 0~40℃, below 70%RH, storage area must remain cool and dry, and free of corrosive fumes to ensure solderability. The product should be used within 12months of receipt. In case of storage over 6 months, solderability shall be checked before actual usage.
儲存，保管：建議保存 0~40℃，濕度 70%RH 以下，區域必須保持涼爽與乾燥，並無腐蝕性煙霧以保障焊接性。本產品須在 1 年內使用，假如保存超過 6 個月請確認其焊錫性，再行安裝使用。

b. Considerations for automatic placement: when installing precuts, care should be taken not to apply distortion, stress as it may deform the products
自動打件狀態：爲防止產品破損請避免設置過度壓力於本產品`.

c. PCB Design: please refer to a recommended land pattern of follow figure and specification.
印刷電路板設計：請參考後述之焊墊圖面及說明

d. Soldering: please refer to a recommended land pattern of follow figure and specification.
焊接：焊接注意溫度，請參考後述之焊接圖面及說明。

e. Keep the inductors away from all magnets, magnetic objects and corrosive environment.
請將本產品遠離磁石或磁性物質，並遠離腐蝕環境。

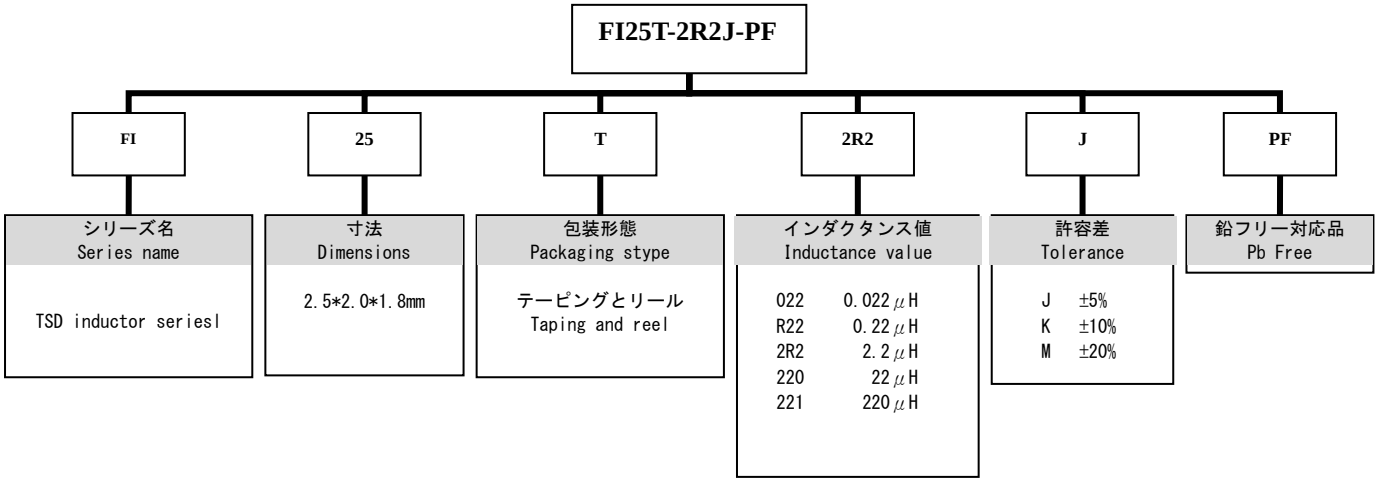
2. APPLICATIONS

・Digital TV, DVD Recorder, Hard Disk Drives, Floppy Disk Drives, MP3, Video cameras, Mobile communications, Car audio equipment, Computer peripherals, Game machine.

3. SPECIFICATIONS

動作溫度範圍 Operating temperature range	-40 to +125℃ -40 to +125℃
保存溫度範圍 Storage temperature range	-40 to 125℃ -40 to +125℃
包裝形態 Packaging style	テーピング Taping
包裝個数 Quantities	2000 個/リール 2000 pieces/reel
Rated current: Current cause Inductance drop within 10%	

2. Product Identification



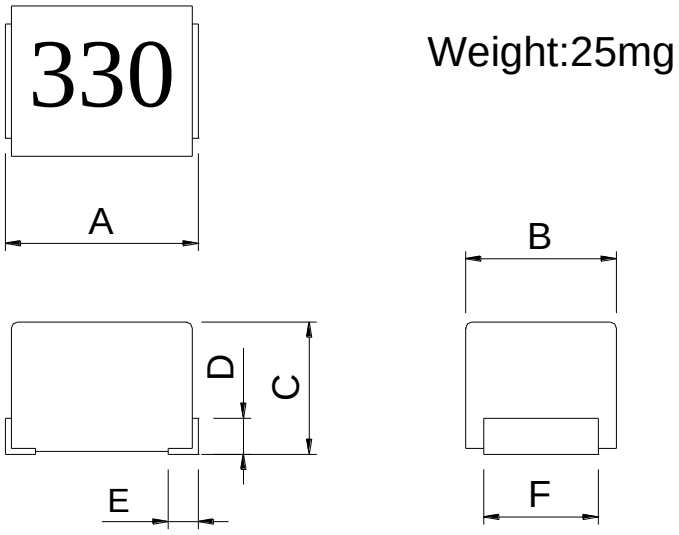
2. Rating

インダクタンス Inductance(uH)	インダクタンス許容差 Inductance tolerance	Q min	L、Q測定周波数 Test Frequency L,Q (MHz)	自己共振周波数 Self-resonant frequency (MHZ)min.	直流抵抗 DC resistance (Ω)max	定格電流 Rated current (mA)max	品名 Part No
0.01	±20%	15	100	2150	0.26	530	FI25T-010M-PF
0.012	±20%	15	100	2050	0.27	500	FI25T-012M-PF
0.015	±20%	15	100	2000	0.29	480	FI25T-015M-PF
0.018	±20%	15	100	1850	0.31	450	FI25T-018M-PF
0.022	±20%	15	100	1650	0.37	420	FI25T-022M-PF
0.027	±20%	15	100	1550	0.4	410	FI25T-027M-PF
0.033	±20%	20	100	1450	0.42	400	FI25T-033M-PF
0.039	±20%	20	100	1350	0.45	380	FI25T-03MJ-PF
0.047	±20%	20	100	1200	0.5	360	FI25T-047M-PF
0.056	±20%	20	100	1100	0.6	340	FI25T-056M-PF
0.068	±20%	20	100	1050	0.65	320	FI25T-068M-PF
0.082	±20%	20	100	900	0.75	300	FI25T-082M-PF
0.1	±10%±20%	20	100	800	0.8	280	FI25T-R10K-PF
0.12	±10%±20%	30	25.2	700	0.3	550	FI25T-R12K-PF
0.15	±10%±20%	30	25.2	550	0.35	500	FI25T-R15K-PF
0.18	±10%±20%	30	25.2	500	0.4	460	FI25T-R18K-PF
0.22	±10%±20%	30	25.2	450	0.5	430	FI25T-R22K-PF
0.27	±10%±20%	30	25.2	425	0.55	420	FI25T-R27K-PF
0.33	±10%±20%	30	25.2	400	0.6	400	FI25T-R33K-PF
0.39	±10%±20%	30	25.2	375	0.65	375	FI25T-R39K-PF
インダクタンス Inductance(uH)	インダクタンス許容差 Inductance	Q min	L、Q測定周波数 Test Frequency L,Q (MHz)	自己共振周波数 Self-resonant frequency	直流抵抗 DC resistance	定格電流 Rated current	品名 Part No

	tolerance			(MHZ)min.	(Ω)max	(mA)max	
0.47	**±10%±20%**	**30**	**25.2**	**350**	**0.68**	**350**	**FI25T-R47K-PF**
0.56	**±10%±20%**	**30**	**25.2**	**325**	**0.75**	**325**	**FI25T-R56K-PF**
0.68	**±10%±20%**	**30**	**25.2**	**300**	**0.85**	**300**	**FI25T-R68K-PF**
0.82	**±10%±20%**	**30**	**25.2**	**260**	**1**	**260**	**FI25T-R82K-PF**
1	**±5%±10%**	**30**	**7.96**	**245**	**1.1**	**245**	**FI25T-1R0J-PF**
1.2	**±5%±10%**	**30**	**7.96**	**230**	**1.2**	**230**	**FI25T-1R2J-PF**
1.5	**±5%±10%**	**30**	**7.96**	**182**	**1.3**	**220**	**FI25T-1R5J-PF**
1.8	**±5%±10%**	**30**	**7.96**	**135**	**1.45**	**210**	**FI25T-1R8J-PF**
2.2	**±5%±10%**	**30**	**7.96**	**105**	**1.55**	**200**	**FI25T-2R2J-PF**
2.7	**±5%±10%**	**30**	**7.96**	**70**	**1.7**	**195**	**FI25T-2R7J-PF**
3.3	**±5%±10%**	**30**	**7.96**	**55**	**1.9**	**185**	**FI25T-3R3J-PF**
3.9	**±5%±10%**	**30**	**7.96**	**48**	**2.1**	**180**	**FI25T-3R9J-PF**
4.7	**±5%±10%**	**30**	**7.96**	**43**	**2.3**	**175**	**FI25T-4R7J-PF**
5.6	**±5%±10%**	**25**	**7.96**	**42**	**2.5**	**170**	**FI25T-5R6J-PF**
6.8	**±5%±10%**	**25**	**7.96**	**39**	**2.7**	**165**	**FI25T-6R8J-PF**
8.2	**±5%±10%**	**25**	**7.96**	**36**	**3.05**	**160**	**FI25T-8R2J-PF**
10	**±5%±10%**	**25**	**2.52**	**30**	**3.5**	**155**	**FI25T-100J-PF**
12	**±5%±10%**	**25**	**2.52**	**28**	**3.8**	**150**	**FI25T-120J-PF**
15	**±5%±10%**	**25**	**2.52**	**24**	**4.4**	**140**	**FI25T-150J-PF**
18	**±5%±10%**	**25**	**2.52**	**22**	**4.8**	**130**	**FI25T-180J-PF**
22	**±5%±10%**	**25**	**2.52**	**20**	**5.5**	**125**	**FI25T-220J-PF**
27	**±5%±10%**	**25**	**2.52**	**18**	**6.3**	**115**	**FI25T-270J-PF**
33	**±5%±10%**	**25**	**2.52**	**16**	**7.1**	**110**	**FI25T-330J-PF**
39	**±5%±10%**	**20**	**2.52**	**14**	**9.5**	**90**	**FI25T-390J-PF**
47	**±5%±10%**	**20**	**2.52**	**12**	**11.1**	**80**	**FI25T-470J-PF**
56	**±5%±10%**	**20**	**2.52**	**12**	**12.1**	**75**	**FI25T-560J-PF**
68	**±5%±10%**	**20**	**2.52**	**10**	**16.6**	**70**	**FI25T-680J-PF**
82	**±5%±10%**	**20**	**2.52**	**10**	**19**	**66**	**FI25T-820J-PF**
100	**±5%±10%**	**15**	**0.796**	**8**	**21**	**60**	**FI25T-101J-PF**

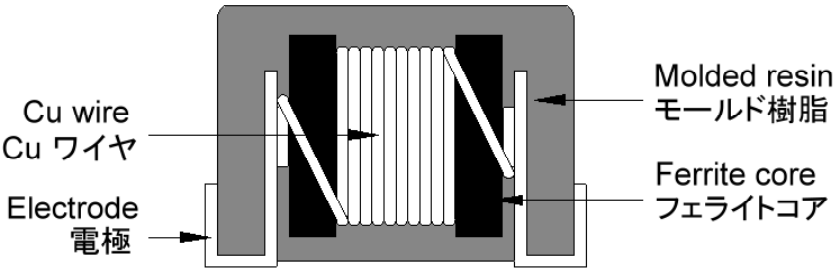
4. Form and dimensi

A = 2.5±0.3
B = 2.0±0.2
C = 1.8±0.2
D = 0.4
E = 0.4±0.2
F = 1.4±0.1
単位/Unit: mm

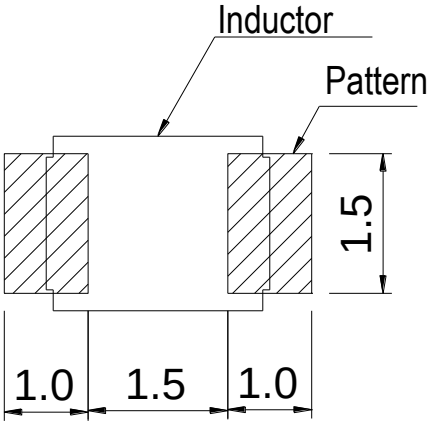


4. Construction

(ClassH)



5. The recommended land pattern



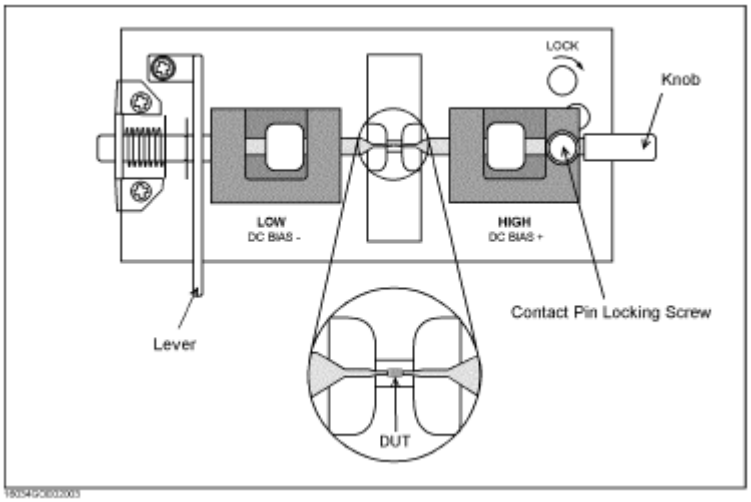
6.Characteristic: Inductance (uH)

Test Method: Measure Inductance by HP4285A+16034E

Test Frequency: 1R0J～8R2J → 7.96MHz

100J～820J → 2.52MHz

101J → 0.796MHz



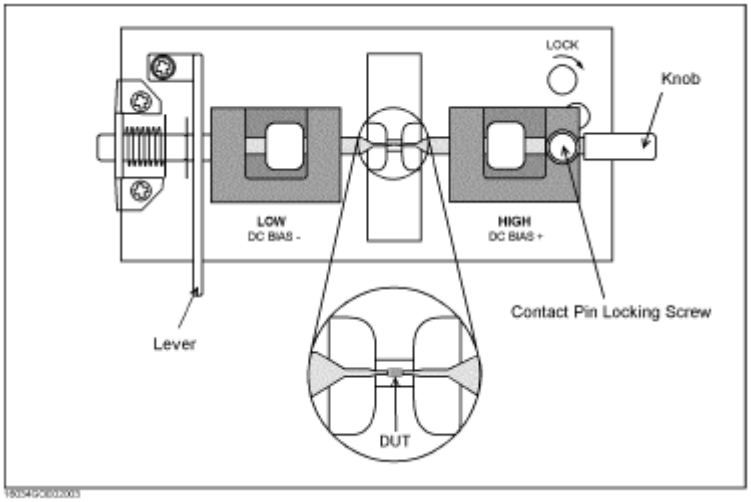
7.Characteristic: Q Factor

Test Method: Measure Inductance by HP4285A+16034E

Test Frequency: 1R0J～8R2J → 7.96MHz

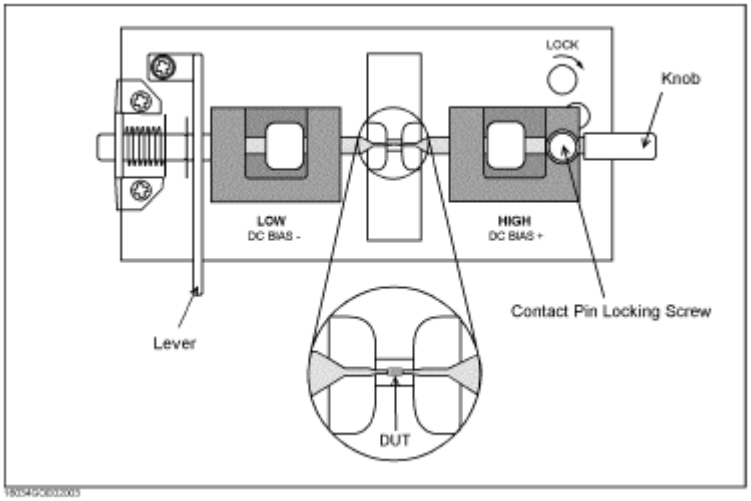
100J～820J → 2.52MHz

101J → 0.796MHz



8. Direct current resistance

Test Method: Measure Inductance by ADEX AX-114N

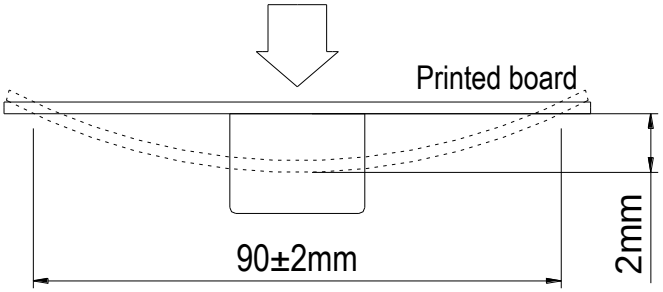


9. Resistance to soldering heat test

Test Method Flux shall be coated over the whole of the sample beforehand, the sample shall then be preheated for about 2 minutes in a temperature of 150+0/-20℃ and after it has been immersed for 10±1 seconds fully in solder bath with a temperature of 260±5℃,

Results *Appearance : No mechanical damage.
*Inductance change rate : ⊿L/L0≦±10%
*Inductance change rate : ⊿Q/Q0≦±30%

10. Mechanical Strength
10-1. Bending test
Test Method Soldered sample on PC board to be bend down to 2mm as below drawing

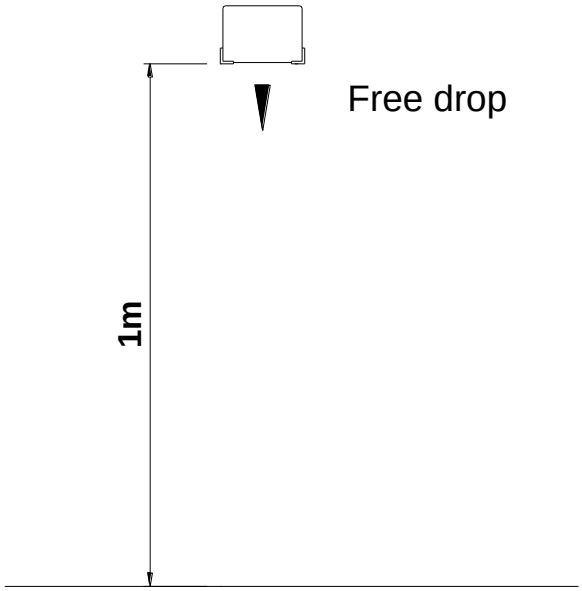


Number of samples n=10
Results *Appearance : No looseness and damage

10-2. Drop test

Test Method The sample shall be subject to “drop test” illustrated in following figure.

At the completion of the “drop test”, there shall be no abnormality in functioning



Number of samples n=10

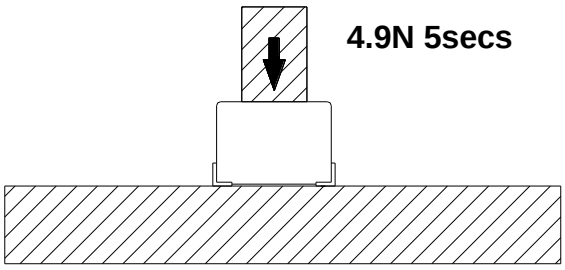
Results *Appearance : No looseness

*Inductance change rate : ⊿L/L0≦±5%

*Inductance change rate : ⊿Q/Q0≦±30%

10-3. Pressing strength

Test Method Apply 4.9N load for 5 Sec, as shown by following figure.



Number of samples n=10

Results *Appearance : No looseness and damage

10-4. Vibration test.

Test Method Submit the sample to a vibration test in X, Y and Z directions, 2 hours for each direction.

Vibration freq.: 10～55Hz

Amplitude : 1.5mm

Number of samples n=10

Results *Appearance : No looseness

*Inductance change rate : ⊿L/L0≦±10%

*Inductance change rate : ⊿Q/Q0≦±30%

11. Resistance to soldering heat

Test Method Dipping the sample into solder bath.

Pre-heat : 150+0/-20℃, 2 minutes.

Soak into the solder bath: 260±5℃, 10±1 seconds.

Number of samples n=10

Results *Appearance : No looseness and damage

*Inductance change rate : ⊿L/L0≦±10%

*Inductance change rate : ⊿Q/Q0≦±30%

12. Solder ability test

Test Method Dipping the sample into solder bath.

Pre-heat : 150+0/-20℃, 2 minutes.

Soak into the solder bath: 230±5℃, 4±1 seconds.

Number of samples n=10

Results *Appearance : No looseness and damage

*Not less than 90% of the electrode sections shall be newly coated with solder smoothly when the sample is taken out of the solder bath.

13. Thermal shock

Test Method Exposure sample at the conditions in the figure below, characteristics are measured after the ambient air exposure of 1 or 2 hours.

100 cycles of +85℃ for 30 minutes, -40℃ for 30 minutes.

Number of samples n=10

Results *Appearance : No looseness

*Inductance change rate : ⊿L/L0≦±10%

*Inductance change rate : ⊿Q/Q0≦±30%

14. Low temperature storage

Test Method Exposure sample at -40℃, for 1000 hours. Characteristics are measured after the ambient air exposure of 1 or 2 hours.

Number of samples n=10

Results *Appearance : No looseness

*Inductance change rate : ⊿L/L0≦±10%

*Inductance change rate : ⊿Q/Q0≦±30%

15. High temperature storage

Test Method Exposure sample at 85℃, for 1000 hours. Characteristics are measured after the ambient air exposure of 1 or 2 hours.

Number of samples n=10

Results *Appearance : No looseness

*Inductance change rate : ⊿L/L0≦±10%

*Inductance change rate : ⊿Q/Q0≦±30%

16. Moisture storage

Test Method Exposure sample at60℃, 95%RH for 1000 hours. Characteristics are measured after the ambient air exposure of 1 or 2 hours.

Number of samples n=10

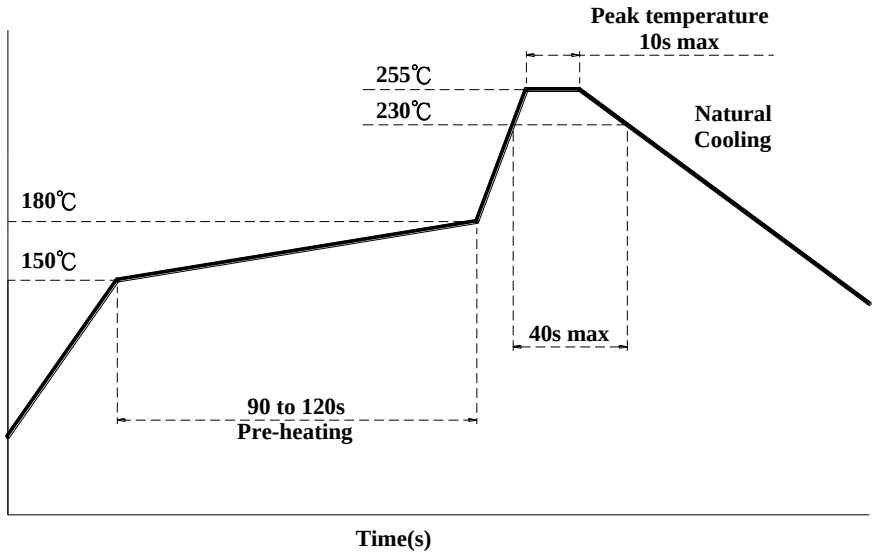
Results *Appearance : No looseness

*Inductance change rate : ⊿L/L0≦±10%

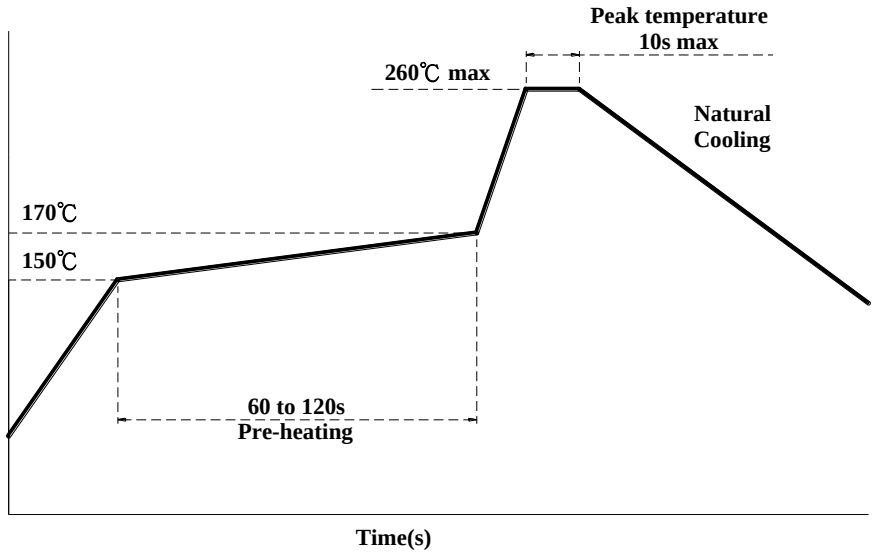
*Inductance change rate : ⊿Q/Q0≦±30%

17. The recommended Soldering conditions

17-1 Reflow soldering



17-2 Flow soldering



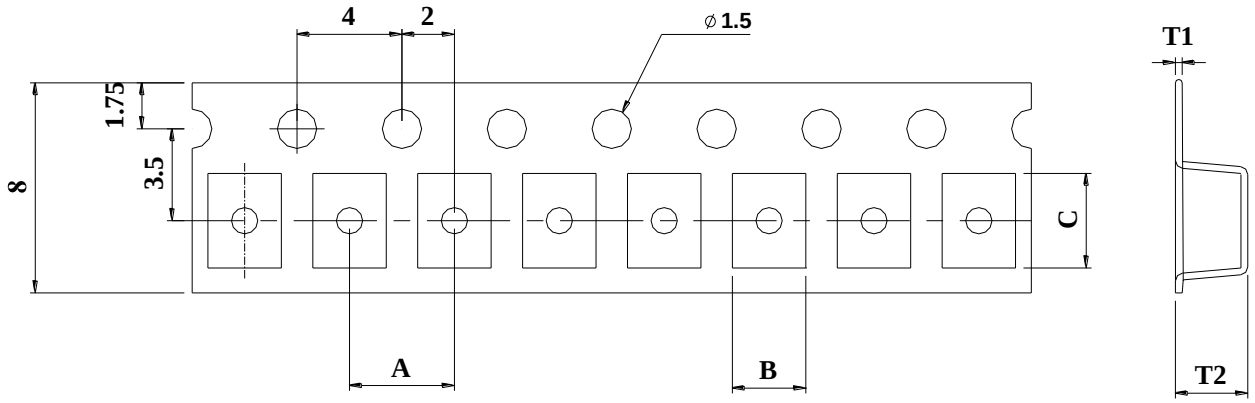
17-3 Iron soldering

Tip temperature	300 to 350℃
Heating time	3 sec/soldering
Soldering rod specifications	Output: 30W Tip diameter: 1mm

Based on the above conditions, use a maximum product temperature of 260℃ and a maximum accumulated heating time of 10 seconds as a guideline.

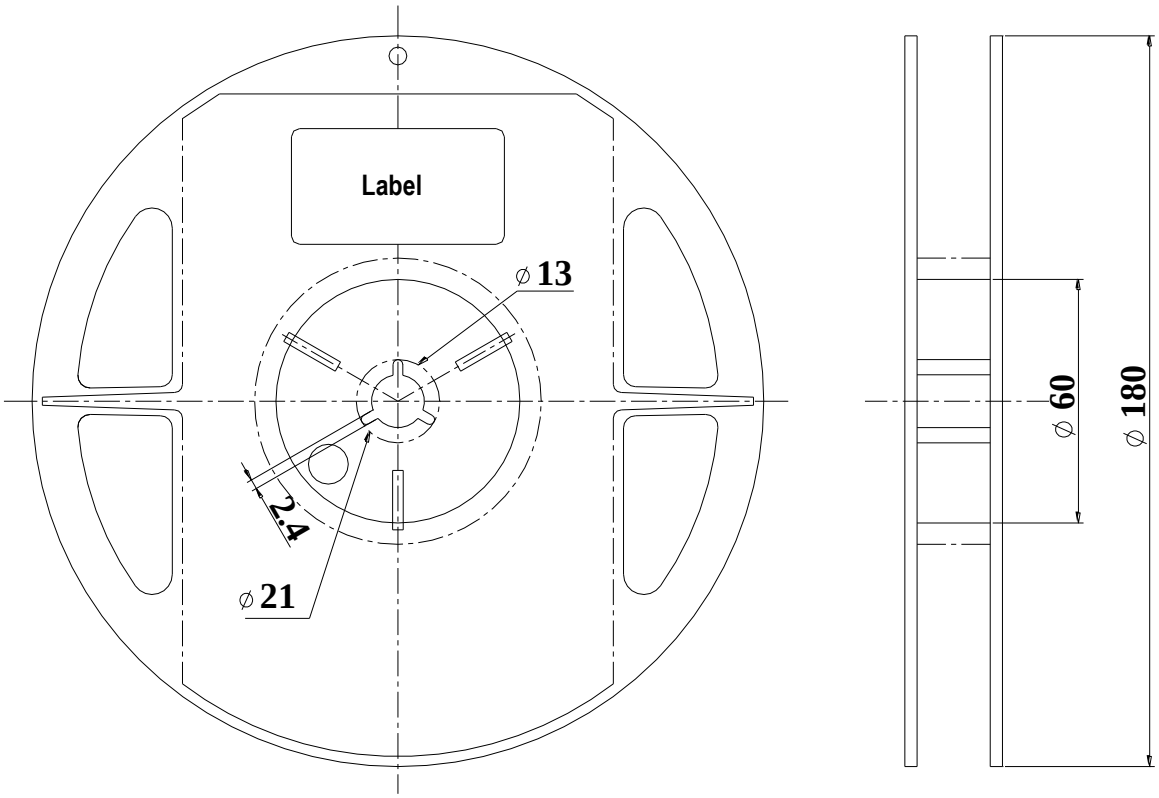
18. Package

(1) Taping specifications



Product	Product's thickness (mm)	A (mm)	B (mm)	C (mm)	T1 (mm)	T2 (mm)	QTY
FI2520	1.8±0.2	4.0	2.3	2.7	0.3	2.1	2000Pcs/reel

(2) Reel Specifications



Label:

Wire Wound Ferrite Core Chip Inductors

FI25T-2R2□-PF

2000 PCS

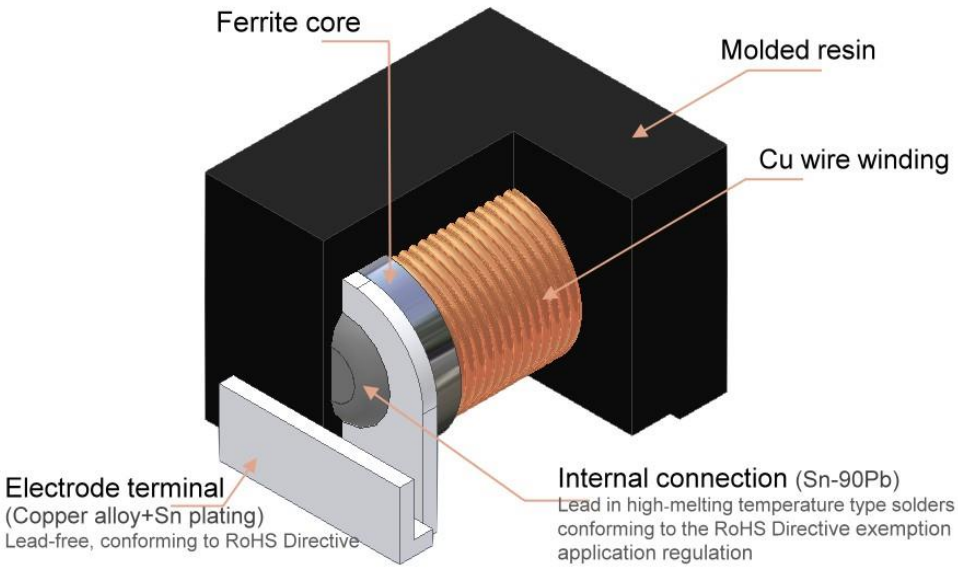
Lot No._____

	Type	Size(mm)	Q'ty
1	7" Plastic reel	φ 180*11	2000pcs
2	Box	185* 195 *35	2 Reels
3	Box	185* 195 *60	4 Reels
4	Box	185* 195 *80	5 Reels
5	Box	185* 195 *155	10 Reels

19. RoHS COMPLICANCE

Conforming to “RoHS compliance”

- The products conform to “RoHS compliance”
- ”conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.



SPECIFICATION FOR APPROVAL

REF:

PROD. NAME	WOUND CHIP INDUCTOR	TSD'S DWG NO.	FI2520□□□□□-□□□
		TSD'S ITEM NO.	

UL CARD:

OBMW2 August 27, 1999

Magnet Wire-Component

ELEKTRISOLA (MALAYSLA) SDN BHD E143312
IALAN DAMN SATU IANDA BAIK 28750 BENTONG, PAHANG
DARUL MAKMUR MALAYSIA

Mtl Dsg	Mark Dsg	Coating Type BC	Coating Type OC	ANSI Typ	Temp Class
Estersol 160	E180	Polyesterimide (solderable)	——	MW-77	180
Amldester 200	A200	Polyesterimide	——	MW-74	200
Polysol-N 155	PN155	Polyurechane	Nylon	MW-80, MW-28	155, 100
Polysol 155	P155	Polyurechane	——	MW-79, MW-79	155, 130
Polysol 155g	Pg155	Polyurechane	——	MW-79	130
Polysol 155p	Pp155,Gp155	Polyurechane	——	MW-79	155
Polysol 160	P160	Polyurechane	——	MW-79	155
Polysol 180	P180	Polyurechane	——	MW-79	155
Polysol 170	P170 or G170	Polyurechane	——	MW-79	156
Polysol-N 180	PN180	Polyurechane	Nylon	——	180

Marking：Dompany name/nateriel designation or marked designation and factory identification on package ok reel

See General Information preceding These Recognitions

For use only in equipment where the acceptability of the combination is determined by Underwriters Laboratories Inc.

OMFZ2 March 4, 1994

Component-Plastics

CHANG CHUN PLASTICS CO LTD E59481 (S)

(F1-cont. from F card)

BM-21	ALL	0.79	94HB	50	50	50	—	—	—	—	—
BM-22	ALL	0.79	94HB	50	50	50	—	—	—	—	—
BM-23	ALL	0.79	94V-0	50	50	50	—	—	—	—	—
EME-1100	BK	0.84	94V-0	130	130	130	—	—	—	—	—
	BK	6.4	94V-0	130	130	130	—	—	—	—	—
EME-1200	BK	0.84	94V-0	130	130	130	—	—	—	—	—
	BK	6.4	94V-0	130	130	130	—	—	—	—	—
EME-5961C	BK	0.3	94V-0	130	130	130	—	—	—	—	—
	BK	3.1	94V-0	130	130	130	—	—	—	—	—

Reports: January 19, 1988: January 19, 1988: January 19, 1988: June 2, 1988; June 2, 1998; June 2, 1988.

Replaces E59481C dated February 7, 1989. (Cont. on C1 card)

262854001 N7047 Underwriters Laboratories Inc.® D11/0018965