LI TAI ELECTRONIC ENTERPRISE CO.,LTD

CUSTOMER

Qisda

SPECIFICATION FOR APPROVAL

CUSTOMER PART NO: 1J.20329.221

LI TAI PART NO: PT-017886-4

DESCRIPTION: TRANSFORMER

DATE: 2021-07-09

TAIWAN □HEAD OFFICE： 東力泰企業有限公司
2-2F,NO.16,Jian Ba Rd,Chang Ho,Taipei County, Taiwan 235.
台北縣中和市建八路 16 號 2 樓之 2
TEL:(02) 8226-3838 FAX:(02) 8226-5522

CHINA □FUQING PLANT: 福清景翔電子配件有限公司
Rong-Qiao Ind.Park, Yuan-Hong Rd. Fu-Qing, FuJian, China.
福建省福清市宏路鎮融僑工業區福玉路
TEL:86-591-5382970 FAX:86-591-5381525

□SHENZHEN PLANT: 力泰電子深圳有限公司
Area A 3rd Fl 3 Third Industrial Zone, Xiacun Community Gongming St,
Guangming District, Shenzhen, Guangdong, 518106
深圳市光明区公明街道下村社区第三工业区 3 号 3 层 A 区
TEL:86-755-27730621 FAX:86-755-27730576

□SUZHOU PLANT: 蘇州祥崴電子有限公司
1027-2 sunwu road.xukou town .wuhzong district .suzhou .china
祥崴電子: 江蘇省蘇州市吳中區孙武路 1027-2 号
TEL:86-512-66629182 FAX: 86-512-66219183

Customer	Qisda	Customer P/N	1J.20329.221	Spec Version	A4
Supplier	LI TAI	Maker P/N	PT-017886-4	Component Type	EFD25

Form Version: 3.0

Transformer / Coil Specification

Customer	Qisda
Customer P/N	1J.20329.221
Core Type	EFD25
Maker P/N	PT-017886-4
Create Date	2021-07-09
Spec Version	A4
Maker Factory Address	LI TAI ELECTRONIC ENTERPRISE CO LTD SUZHOU PLANT: 1027-2 SUNWU RD XUKOU TOWN WUZHONG DISTRICT SUZHOU JIANGSU CHINA 祥崴電子: 江蘇省蘇州市吳中區胥口鎮孫武路 1027-2 號 TEL:86-512-66219182 FAX:86-512-66210696

Customer	Qisda	Customer P/N	1J.20329.221	Spec Version	A4
Supplier	LI TAI	Maker P/N	PT-017886-4	Component Type	EFD25

Form Version: 3.0

History

Version	Original	Change To	Date	Remark
A0	ISSUE		2013-05-22	
A1		無紅磷 符合 Qisda 自動化塑盤定義	2018-06-11	
A2	INK 廠商 XIN HUA	增 Current Rated INK 廠商改 DOMINO 材料表增 PAINT	2019-02-20	
A3		材料表增 TRIPLE WIRE	2020-04-10	
A4		材料廠商 3M 變更為 YAHUA	2021-07-09	

Customer	Qisda	Customer P/N	1J.20329.221	Spec Version	A4
Supplier	LI TAI	Maker P/N	PT-017886-4	Component Type	EFD25

Form Version: 3.0

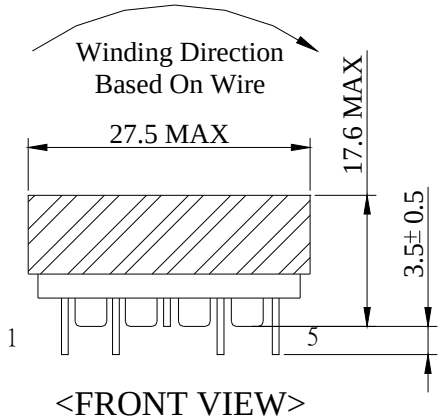
- Content:
  - Configuration & Dimension
  - Bobbin Dimension
  - Winding Specification
  - Electrical Characteristics
  - Material List
  - Package Specification
  - Reliability Criteria
  - Qisda Check List

Customer	Qisda	Customer P/N	1J.20329.221	Spec Version	A4
Supplier	LI TAI	Maker P/N	PT-017886-4	Component Type	EFD25

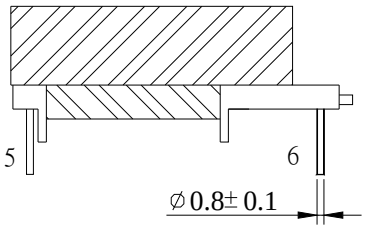
Form Version: 3.0

● Configuration & Dimension

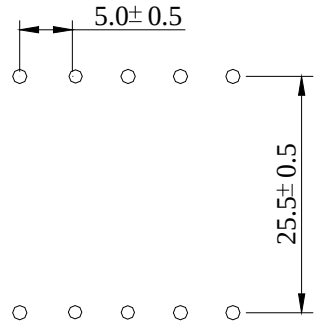
(Should be including Top View、Front View、Bottom view、Side View、Pin Pad Drawing、Picture of Core Tapping &Other note)



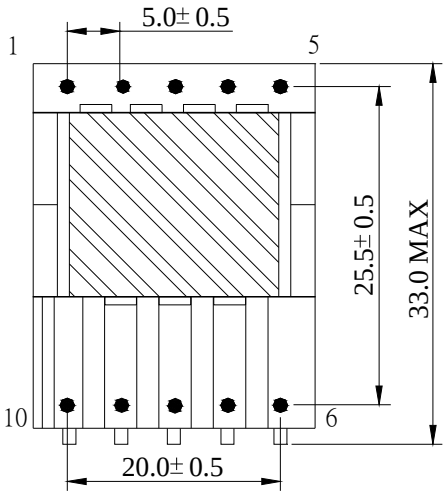
<FRONT VIEW>



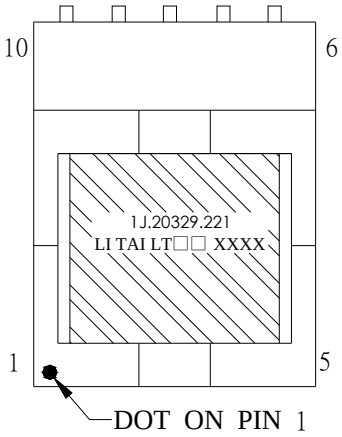
<SIDE VIEW>



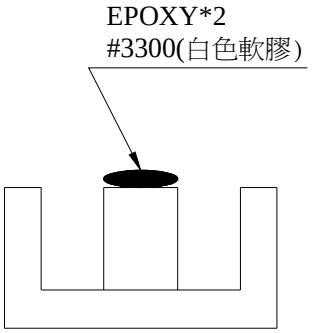
PIN PAD BOTTOM VIEW



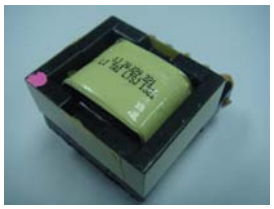
<BOTTOM VIEW>



<TOP VIEW>



<VIEW A>



<VIEW A>

Customer	Qisda	Customer P/N	1J.20329.221	Spec Version	A4
Supplier	LI TAI	Maker P/N	PT-017886-4	Component Type	EFD25

Form Version: 3.0

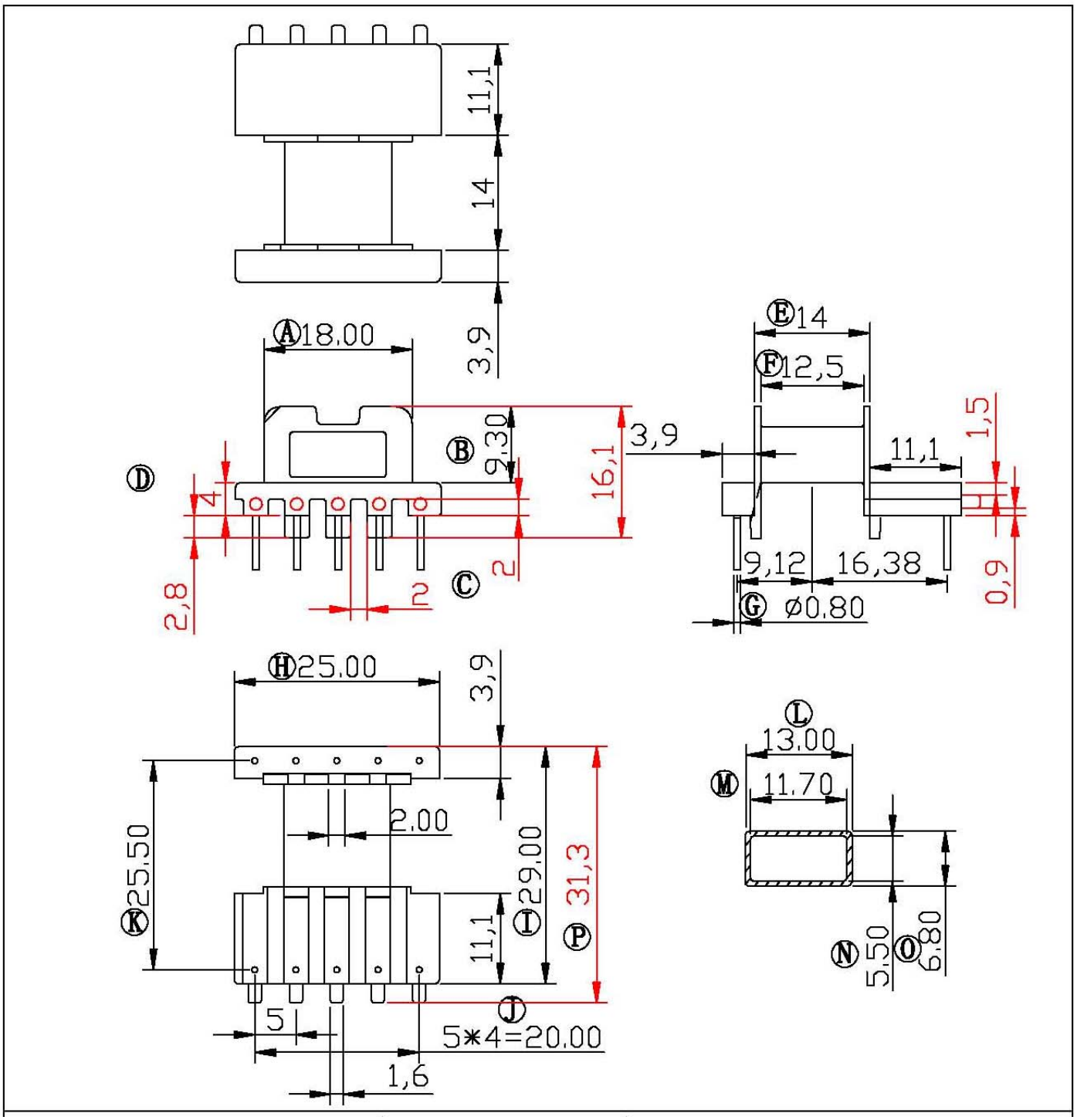
Note:

No.	Deacription	Remark
1	Marking Rule	MANUFACTURING SITE: (□□□□) LTFC: Fujian,China LTSZ: Shenzhen,Gongdong,China LTSJ: Suzhou,Jiangsu,China LOT NO (XX XX) YEAR WEEK
2	PIN 1 朝機台繞製, DOT on Pin1 **(Need Drawing)**	FRONT VIEW
3	PIN 3 CUT OFF 1/2 (結線後 Cut off) **(Need Drawing)**	FRONT VIEW
4	理線焊錫點勿超過 STAND OFF	
5	CORE 研磨至 PIN 1~5 側	
6	CORE 中柱點軟膠 **(Need Drawing)**	VIEW A
7	CORE 中柱點膠量涵蓋中柱三分之二的面積 (No Gap 可不點膠) **(Need Drawing)**	VIEW B
8	FIX CORE BY WITH MYLAR TAPE 2L	
9	成品須真空含浸,含浸後 PIN 腳須二次焊錫	
10	WEIGHT is 22.95+/- 2 g	
11	Photo for Final sample	VIEW C

Customer	Qisda	Customer P/N	1J.20329.221	Spec Version	A4
Supplier	LI TAI	Maker P/N	PT-017886-4	Component Type	EFD25

Form Version: 3.0

- Bobbin Dimension

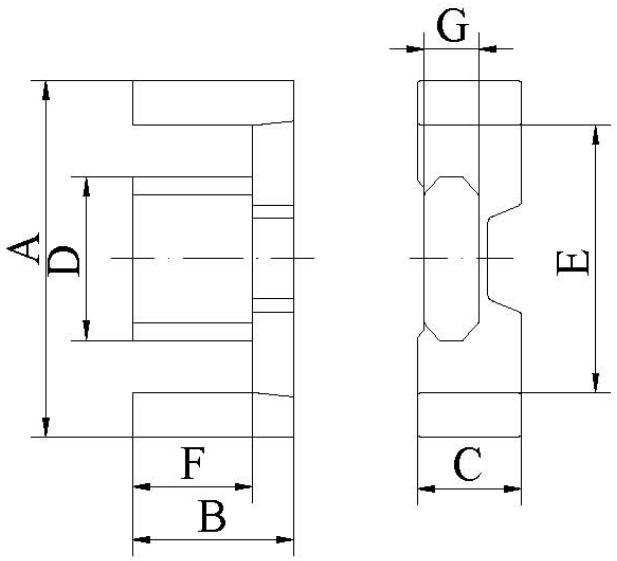


Customer	Qisda	Customer P/N	1J.20329.221	Spec Version	A4
Supplier	LI TAI	Maker P/N	PT-017886-4	Component Type	EFD25

Form Version: 3.0

● Core Dimension

1. 尺寸 DIMENSIONS(mm)



尺寸 DIMENSIONS(mm)	
A	25.6±0.65
B	10.7±0.3
C	9.1±0.3
D	11.2±0.2
E	19.3min
F	7.5±0.25
G	5.2±0.25

Customer	Qisda	Customer P/N	1J.20329.221	Spec Version	A4
Supplier	LI TAI	Maker P/N	PT-017886-4	Component Type	EFD25

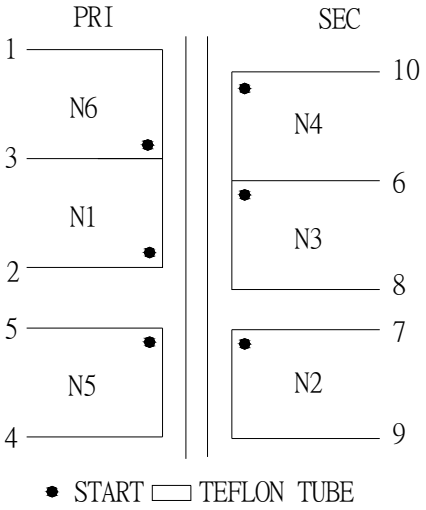
Form Version: 3.0

● Winding Specification

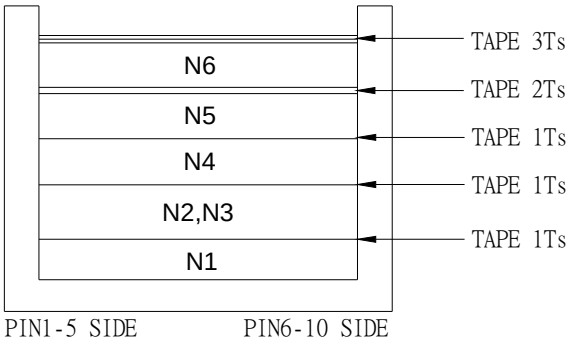
➔ Winding List:

No	Winding No.	Terminal	Wire	Turns	Winding Rule
1	N1	2---3	2UEW 0.28φx1c	32	
2	N2	7---9	TIW-M 0.40φx2c	4	同層串繞
3	N3	6---8	TIW-M 0.40φx2c	4	
4	N4	10---6	TIW-M 0.40φx1c	10	
5	N5	5---4	2UEW 0.25φx2c	13	
6	N6	3---1	2UEW 0.28φx1c	32	

➔ Schematic:



➔ Winding Order:



Customer	Qisda	Customer P/N	1J.20329.221	Spec Version	A4
Supplier	LI TAI	Maker P/N	PT-017886-4	Component Type	EFD25

Form Version: 3.0

● Electrical Characteristics

Item	Test Terminal	Specification	Test Instrument
Inductance	L(2---1)	900uH±7%	WAYKE KERR 3260B LCR METER/HP4129 @40KHz, 1V
Leakage Inductance (max)	Lk(2---1) SEC SHORTED	25 uH MAX	
Q Value (min)	Q(2---1)	100 MIN	
DC BIAS 1.0A	L(0A)* 85% MIN		
D.C. Resistance @25℃	R(2---1)	1.3Ω MAX.	CHEN HWA 502 OHM METER @25℃
	R(7---9)	25mΩ MAX.	
	R(6---8)	25mΩ MAX.	
	R(10---6)	110mΩ MAX.	
	R(5---4)	145mΩ MAX.	
Voltage Ratio(V) F=20KHz,1V	V(7---9)	62.5mV±5%	WAYKE KERR 3260B LCR METER/HP4129
	V(6---8)	62.5mV±5%	
	V(10---6)	156mV±5%	
	V(5---4)	204mV±5%	
Hi-Pot	PRI TO SEC	AC 3000V/3mA/1MIN	ZENTECH 9072A
	PRI&SEC TO CORE	AC 1500V/3mA/1MIN	
Insulation Resistance	COIL TO CORE	DC500V/100MΩ MIN	
	COIL TO COIL	DC500V/100MΩ MIN	
Current Rated	1.2A		
Operation Temp. Range	-20℃ ~ +130℃		
Storage Temp. Range	-20℃ ~ +60℃		

Customer	Qisda	Customer P/N	1J.20329.221	Spec Version	A4
Supplier	LI TAI	Maker P/N	PT-017886-4	Component Type	EFD25

Form Version: 3.0

➔ Insulation System

Company	Description	UL No.
LI TAI ELECTRONIC ENTERPRISE CO., LTD	CLASS 130(B) CIS.04	E258545

● Material List

	No	Sub Part	Supplier	Description	Type	Flame/ Temp.	UL No.
*	1	CORE	FERROXCUBE	FERRITE CORE EFD25	3C90	N/A	N/A
			SAMWHA		PL-7		
			TDG		TP-4		
	2	BOBBIN CTI group III Thk. 0.75(min.)	CHANG CHUN	PHENOLIC	T375J	94V-0/ 150℃	E59481 (S)
	3	WIRE	PACIFIC	POLYURETHANE	UEWN/U (ANSI MW-28)	130℃	E201757
	4	TRIPLE WIRE 耐压: 3000 Vac Min Thk. 0.01(min.)	COSMOLINK	TRIPLE INSULATION WIRE	TIW-M	130℃	E213764
	5	TAPE CTI group II Thk. 0.05(min.)	SYMBIO	POLYETHYLENE	NO.35660 (a)	130℃	E50292
			YAHUA	POLYETHYLENE	NO. CT* Yellow (c)(g)	130℃	E165111
	6	VARNISH	JOHN C	POLYESTER	BC-346A	200℃	E317427
	7	EPOXY	EATTO	N/A	3300A/B	90℃	E218090
			EATTO	N/A	3300(白色軟膠)	90℃	E218090
	8	PIN	WELL FORE	SOLDER 99.26% Sn 0.05% Ag 0.08% Cu,ECT	N/A	N/A	N/A
	9	INK	DOMINO	INK	N/A	N/A	N/A
	10	TIN	SHI PIN	Lead Free Solder Sn98% Cu2%	N/A	N/A	N/A
	11	PAINT	MINGZHIXUE	PAINT	N/A	N/A	N/A

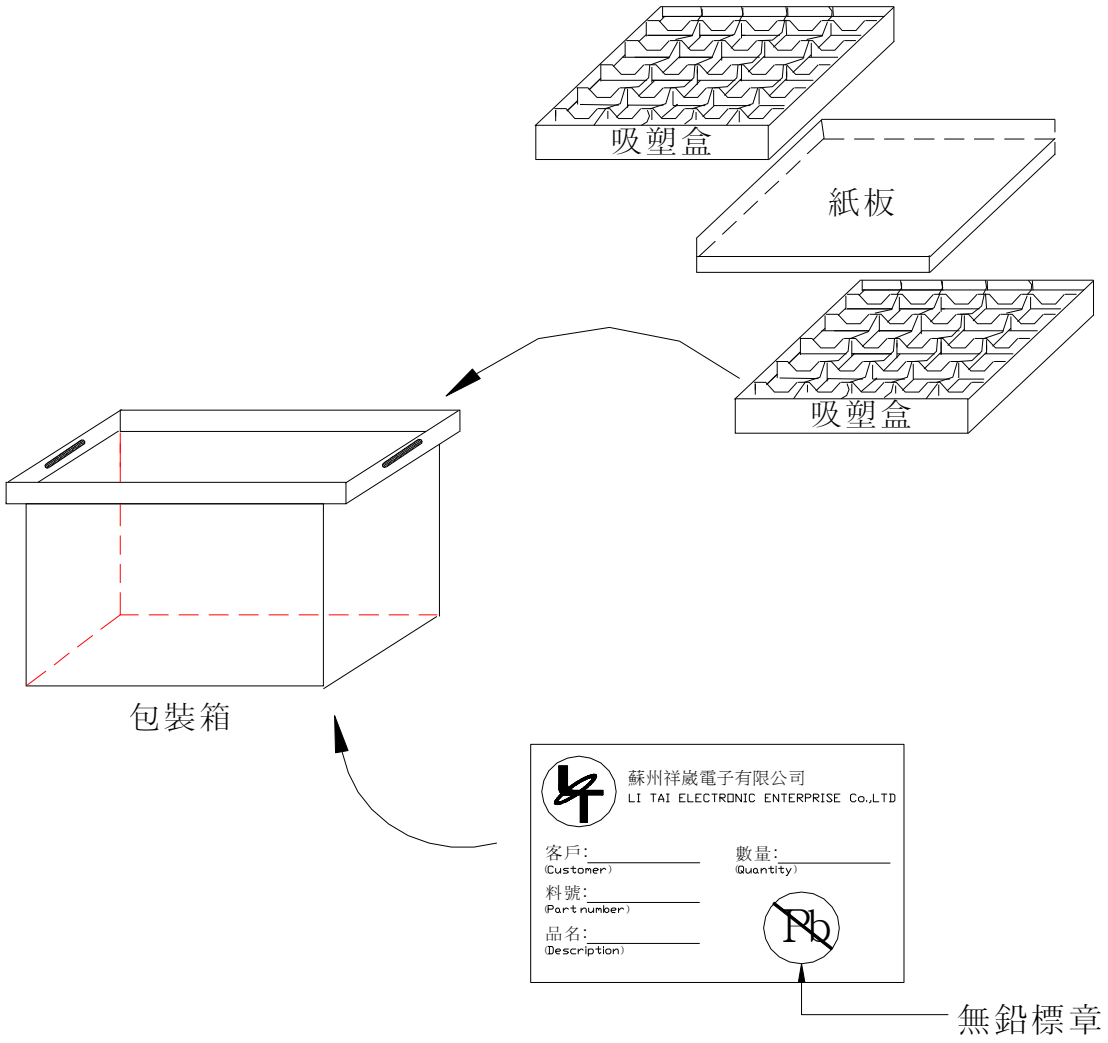
* Safety concerned subparts.

Customer	Qisda	Customer P/N	1J.20329.221	Spec Version	A4
Supplier	LI TAI	Maker P/N	PT-017886-4	Component Type	EFD25

Form Version: 3.0

Package Specification

備註：包裝吸塑盒需符合 Qisda 自動化塑盤的定義



Customer	Qisda	Customer P/N	1J.20329.221	Spec Version	A4
Supplier	LI TAI	Maker P/N	PT-017886-4	Component Type	EFD25

Form Version: 3.0

包裝箱外箱標籤說明：

A.Condition:

For the packing identification of standard shipment

B.Label specification:

Material : Copper plate

Dimension: 80*60 mm for SOT series

Back Glue: Acrylic Glue series

Color: Frame: White Character: Black

C. Bar Code Specification (Bar code printer is DATAMAX)

(1). Code: Regular Code 128(Auto)

(2). Parameter:

X Dimension: 9.8mil

Ratio: 300dpi(3 dots)

Height: 0.7cm.

(3).Character:

Type: Arial (For Bar code machine Datamax)

Right character size 12 (Packer, Pack Date, QC)

Pb character size 24

Qisda character size 20



D. Label Content:

(1). P/N: Part No.

(2). LOT NO.: Product Lot No.

(3). (Q)Quantity

(4). Product Date+Expire days: Assembly Date Code, Expire days

(5). (B): Customer Part No. Code,Li tai Code,D/C Code, Quantity

(6)ReelID: Li tai Code,Assembly Date Code, Manufacture Lot No.

(7) Pb : For Pb free package

(8) Qisda : Customer name

NOTE:（括弧內中文為解釋說明）

Customer	Qisda	Customer P/N	1J.20329.221	Spec Version	A4
Supplier	LI TAI	Maker P/N	PT-017886-4	Component Type	EFD25

Form Version: 3.0

包裝盒嗲頭標籤說明：

A.Condition:

For the packing identification of shipping mark

B Label specification:

Material : Copper plate

Dimension: 20*60 mm　for SOT series

Back Glue: Acrylic Glue series

Color:　Frame: White　Character: Black

C. Bar Code Specification

(1). Code: Regular Code 128(Auto)

(2). Parameter:

X Dimension: 9.8mil

Ratio: 300dpi(3 dots)

Height: 0.7cm.



D. Label Content:

客户料号：Customer Part No.

周期：D/C

数量：Quantity

包裝箱外箱 QC 標籤：

A.Condition:

For the packing identification of QC. mark

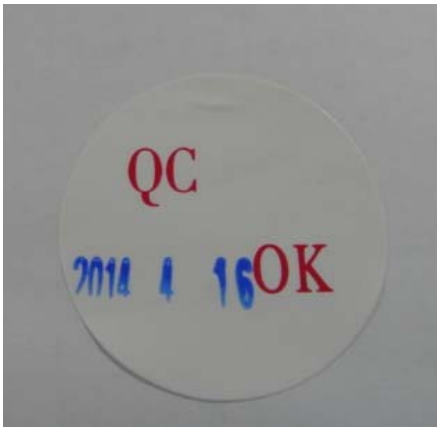
B Label specification:

Material : Copper plate

Dimension: Φ30.0mm　series

Back Glue: Acrylic Glue series

Color:　Frame: White　Character: Red＆Blue



C Label Content:

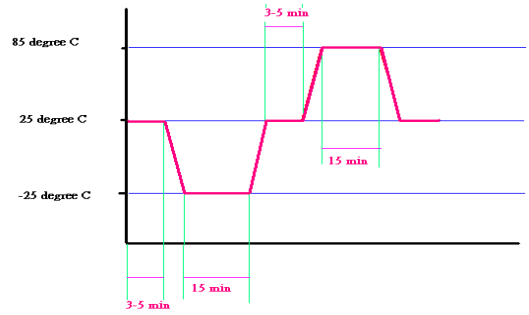
QC OK：Quality Control Pass

Date：Assembly Date

Customer	Qisda	Customer P/N	1J.20329.221	Spec Version	A4
Supplier	LI TAI	Maker P/N	PT-017886-4	Component Type	EFD25

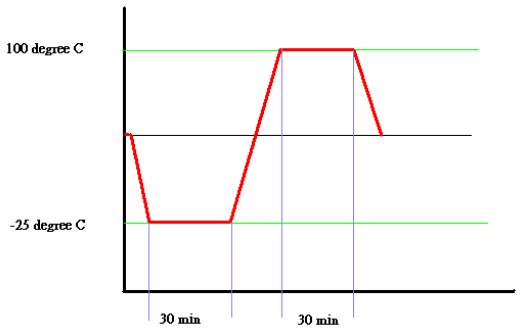
Form Version: 3.0

● Reliability Criteria (Qisda Version :2.0)

Test item	Test condition (Test Method)	inspection criteria
高溫無負荷壽命測試 (Hi-temp unload life test)	Condition: 85±2°C Duration: 120 hours 96 Hrs (工厂例行性抽验)	1. 外觀：無腐蝕、裂痕、其他機械損傷線圈鐵芯裝配牢固 2. 電氣特性：在原 SPEC 要求之規格內
低溫無負荷壽命測試 (Low-temp unload life test)	Condition: -25℃ ± 2℃ Duration: 120 hours 96 Hrs (工厂例行性抽验)	1. 外觀：無腐蝕、裂痕、其他機械損傷線圈鐵芯裝配牢固 2. 電氣特性：在原 SPEC 要求之規格內
耐濕性無負荷試驗 (Humidity unload test)	Condition: 65℃ ± 2℃ Humidity: 90 to 95% RH Duration: 120 hours	1. 外觀：無腐蝕、裂痕、其他機械損傷線圈鐵芯裝配牢固 2. 電氣特性：在原 SPEC 要求之規格內
溫度循環試驗 (Thermal cycle test)	Cycle: 25+/-5℃/ 3-5 min --> -25+/-3℃/ 15 min --> 25+/-3℃/ 3-5 min --> 85+/-5℃/ 15 min Times: 100 Cycles 	1. 外觀無斷裂,脫落,鬆動而且外觀無任何異常現象. 2. 電氣特性:在原 SPEC 規格內
焊錫耐熱性試驗 (Solder heat-resistance test) IR-Reflow or Wave solder	Pre-heating: 150±10℃ Time: 60 - 120 sec max Temperature: 260±5℃ max Time: 10 sec ±1 sec	1. 外觀：無腐蝕、裂痕，其他機械損傷,不能有焊錫不良,其焊錫面積需達到 95%. 2. 電氣特性：在原 SPEC 要求之規格內
焊錫附著性試驗 (Solderability test)	Temperature: 235±5℃ Time: 5±0.5 sec	1. 外觀：無斷裂、脫落而且外觀無任何異常現象 2. 焊錫面積需達到 95%

Customer	Qisda	Customer P/N	1J.20329.221	Spec Version	A4
Supplier	LI TAI	Maker P/N	PT-017886-4	Component Type	EFD25

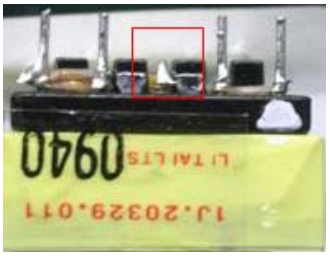
Form Version: 3.0

Test item	Test condition (Test Method)	inspection criteria
冷熱衝擊試驗 (Thermal shock test)	Cycle: -25℃ / 30 min -->100 ℃/ 30 min Times: 100 Cycles 	1. Inductance deviation within ±5.0%
振動試驗 (Vibration test)	Frequency:10 Hz --> 55 Hz --> 10Hz (for 1 min.) Time:6 hour Perpendicular directions (X,Y,Z)	1. 外觀:無裂痕,PIN 腳脫落與其他機械損傷. 2. 電性符合 SPEC 要求.
Solder Iron	Temperature: 390+/-10℃ Time: 4-5 sec	1. 外觀：無斷裂、脫落而且外觀無任何異常現象 2. 焊錫面積需達到 95%

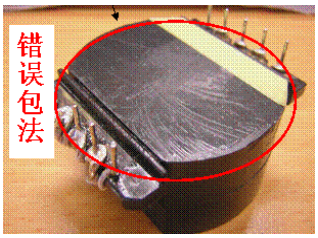
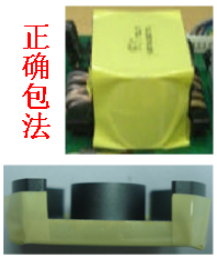
Customer	Qisda	Customer P/N	1J.20329.221	Spec Version	A4
Supplier	LI TAI	Maker P/N	PT-017886-4	Component Type	EFD25

Form Version: 3.0

● Qisda Check List

No	Check Point	Remark	Supplier Confirm (Pass or N/A)
1	2Pin 以上 Choke 類零件需注意防呆		N/A
2	Transformer 的繞組需加註繞法疏繞需注意是否需平均疏繞。走線槽位是否可避免傷到漆包線及是否與 Core 距離太近. 需注明走線方向順時針？逆時針？		PASS
3	Transformer 如果繞線太細（低於 0.04mm）， 外部需包 TAPE。		PASS
4	是否標示研磨 Core 位置(打點)		PASS
5	Transformer 出入線結線：不可超過 BOBBIN stand off Cut off PIN ：需與 BOBBIN stand off 齊平 		PASS
6	Power Transformer 限定常用 Core 廠商： Others :TDK、TDG、SAMWHA、FERROXCUBE（PHILIPS）、TOKIN、NICERA Projector: TDK、FERROXCUBE（PHILIPS）、TOKIN、NICERA		PASS
7	Material List 標註 UL No.		PASS
8	規格書中需注明測試設備（指定測試設備：HP-4284A）。 電感測試條件一般為：40KHz 1V Hi-pot 測試條件一般為：3mA/ 1min	如需 CHEN HWA 量測，則須比較二種設備誤差 將誤差值加入到實際測試值中	PASS
9	使用 Ring choke, 引腳出線處需加 Teflon tube，tube 至少深入至線包不會短路，不得低於 core 底部；底部需加 PCB 板，起固定隔離作用。		N/A
10	Choke 類電感外部加熱縮套管，需保證套管高於線圈		N/A
11	Chock 類電感線徑若≤0.6mm，則不能由銅線直接沾錫作為 PIN 腳，必須加底座		N/A

Customer	Qisda	Customer P/N	1J.20329.221	Spec Version	A4
Supplier	LI TAI	Maker P/N	PT-017886-4	Component Type	EFD25

12	所有 Transformer 都要 "真空" 含浸，以防止異音及耐壓不足		PASS
13	Transformer 需廠商提供包裝方式，注意每層之間需加隔板，避免零件受擠壓		PASS
14	Ring Choke 的測試頻率需定義為 100KHz/1V		N/A
15	臥式 ER2828 所用 BOBBIN ,需在 BOBBIN 兩側貼 margin tape 		N/A
16	Transformer 需在規格書中定義:pin 腳需二次沾錫 (請確認剪腳處是否產生錫裂)		PASS
17	一二次側跨接的 power transformer，為保證其與 PCB 表面良好絕緣，要求：二次側需包 2 層膠布，成品外部再包 2 層膠布.具體如下圖  		N/A

Customer	Qisda	Customer P/N	1J.20329.221	Spec Version	A4
Supplier	LI TAI	Maker P/N	PT-017886-4	Component Type	EFD25

Form Version: 3.0

Qisda Format History

Date	Version	Change Notice	Owner
2010-12-3	V1.0	Org	Jeremy Jong
2011-1-3	V2.0	1.Add Qisda Logo 2.Add Power Transformer 限定常用 Core 廠商 (NICERA) 3.Reliability 設為必須符合條件	Jeremy Jong
2012-04-16	V3.0	1. Add photo for final sample. 2. Add Core dimension drawing. 3. Update material list form with thickness.	Carol.Sung