

SPECIFICATION FOR APPROVAL

CUSTOMER'S APPROVAL CHOP

Approval's Condition: _____

Approved Date: _____

KINDLY RETURN A SET WITH YOUR COMPANY'S OFFICIAL STAMP
ON APPROVAL OF THIS ITEM

CUSTOMER'S NAME: _____

CUSTOMER'S MODEL NO. : _____

CUSTOMER'S PART NO. : _____

DESCRIPTION: _____
EP13

Semitel'S MODEL NO. : _____
EP13-116

VERSION: _____
E

DATE: _____
2021/1/11

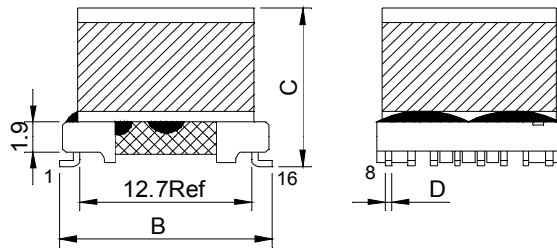
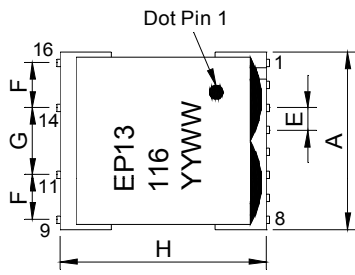
- Attachments:**
- Product Specification
 - Sample Qty. :
 - Test Data

Prepared By	Checked By	Approved By
Hebe Deng 2021/1/11	Liang Wong 2021/1/11	Alan Wong 2021/1/11

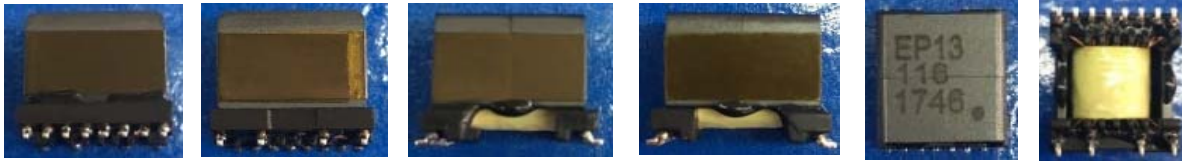
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Product Specification

1. Physical Dimensions (Unit:mm)

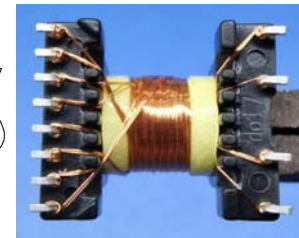
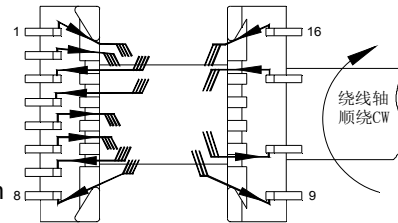


- A 14.4MAX.
- B 17.17MAX.
- C 12.7MAX.
- D 0.6±0.1
- E 1.7±0.3
- F 3.4±0.3
- G 5.1±0.3
- H 15.1REF.

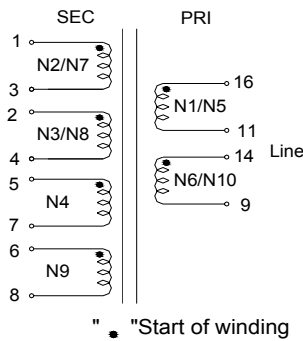


Notes:

- *Marking type is laser printing
- *Size B not including soldering tags
- *YY: Year Code; WW: Week Code
- *Dot indicates the location of pin#1.
- *Coplanarity Requirement: Less than 0.10mm
- *ITDSC Model:SF13AE

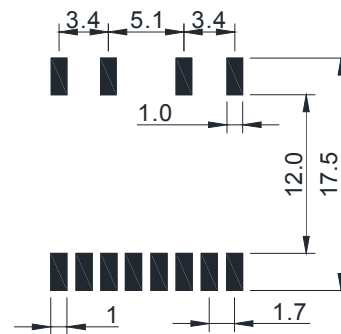


2. Connection

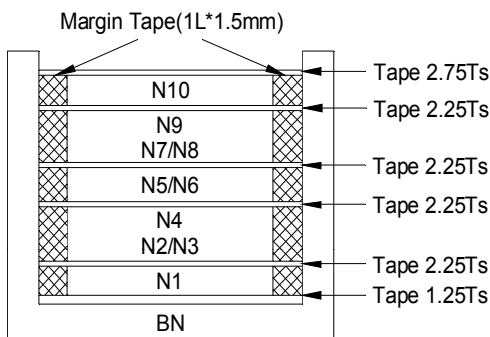


" • "Start of winding

3. Suggested Pad Layout (Unit:mm)



4. Structure of Products



5. No of Turns & Wire Spec

No	No of Pin	Turns	Wire Spec
N1	16 - 11	22 TS	∅0.08mm*2P P180
N2	1 - 3	8 TS	∅0.08mm*2P P180
N3	2 - 4	8 TS	∅0.08mm*2P P180
N4	5 - 7	8 TS	∅0.08mm*4P P180
N5	16 - 11	22 TS	∅0.08mm*1P P180
N6	14 - 9	22 TS	∅0.08mm*1P P180
N7	1 - 3	8 TS	∅0.08mm*2P P180
N8	2 - 4	8 TS	∅0.08mm*2P P180
N9	6 - 8	8 TS	∅0.08mm*4P P180
N10	14 - 9	22 TS	∅0.08mm*2P P180

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Product Specification

6. MSL Test Conclusion

Test Item	Test Conditon
MSL Test	Temperature: <u>30</u> °C Humidity : <u>60</u> 60%RH Test Time : <u>192</u> Hours

7. Electrical Characteristics

*Designed to meet UL 60950-1 and IEC 60950-1 requirements for supplementary insulation

*RoHS Compliant

*Was passed ITU-T K.21 Enhance Level 6KV.

*Operation temperature:-40°C~+85°C

*Adopt to VDSL 35B application

Items	Winding	Specifications	Test Conditions
Inductance	L(16-9) Tie(11-14)	400uH ±10%	at 10KHz,0.1Vrms
LK-Inductance	LK(16-9) Tie(11-14,1-2-3-4-5-6-7-8)	1.6uH MAX. ⓔ	at 100KHz,0.1Vrms
DCR	R(1-4) Tie(2-3)	0.36Ω MAX.	at 25°C
	R(5-8) Tie(6-7)	0.47Ω MAX.	
	R(16-9) Tie(11-14)	1.25Ω MAX.	
Turns Ratio	PIN(16-9):(1-4) Tie(11-14,2-3)	2.7:1,±5%	at 100KHz,0.1Vrms
	PIN(16-9):(5-8) Tie(11-14,6-7)	2.7:1,±5%	
T.H.D	PIN(16-9):PIN(1-4)	-82.5dB MAX. ⓔ	at 30KHz/3.162V
Hi-Pot	PRI. TO SEC.	1875VAC	1mA.2SEC.
Interlayer Hi-Pot	PRI. TO SEC.	6000V, with 5 times pulse	

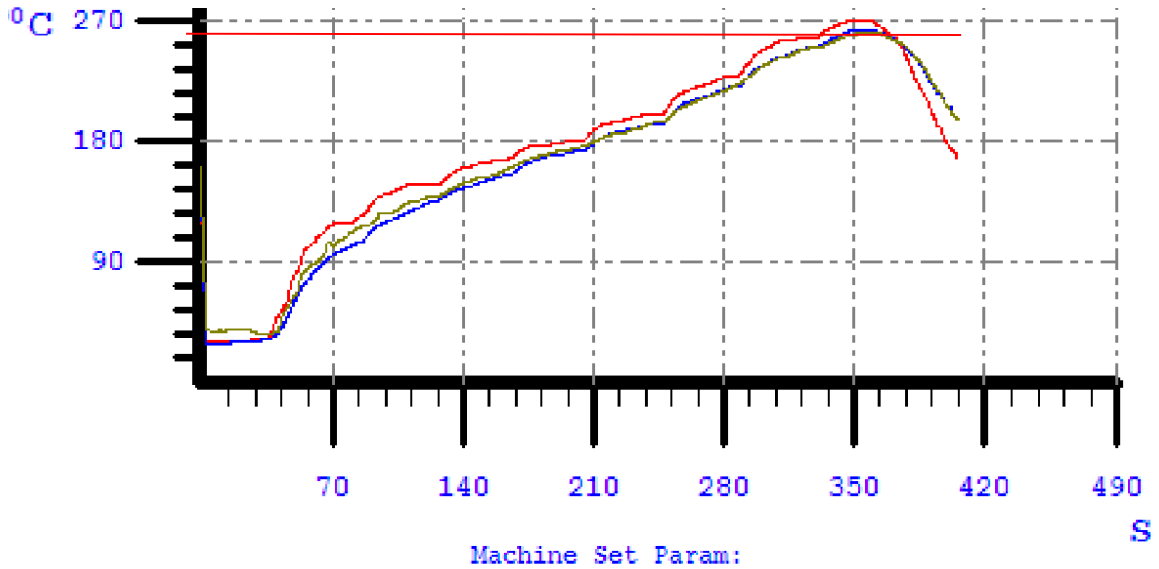
8.Bill of Material

No	Item	Material Name	Manufacturer	Rating	UL File No	SGS File No
1	Core	FERRITE CORE A101	ACME	N/A	NA	CE/2016/A4681B
OR	Core	FERRITE CORE JCH-10S	FCRI	N/A	NA	A2200234874101001R1
2	Bobbin	PM-9630	SUMITOMO (SumiDurez)	150°C	E41429	10394545(3)
3	Copper Wire	Polyurethane bare wire (Cu) Polysol 180	ELEKTRISOLA	180°C	E258243	CE/2016/43022
4	Insulation tape	Polyester Mylar Tape (Yellow) CT* (c) (g)	YAHUA	130°C	E165111	CANEC1612052101
5	Polyimide Tape	Brown adhesive plastic 0.025mm RH-I2550 V-0	RUNSEA (RAYITEK)	180°C	E339977	CANEC1607925701
OR	Polyimide Tape	Polyimide Adhesive Tape PF-301	YAHUA	180°C	E165111	CANEC2008940301
6	Margin Tape	NON-WOVEN CLOTH MARGIN TAPE WF* (c) (h)	YAHUA	130°C	E165111	CANEC1623096902
7	Epoxy	TH320	TIANHUAN	130°C	E257593	CANEC1619173404
OR	Epoxy	EB-360	CHANGFENG	130°C	NIL	SHAEC1925290501
8	Solder	Lead free solder	HONGTAIZHOU	227°C	NIL	CANEC1610788406

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9.Recommended Temperature Conditions of Air Reflow Soldering



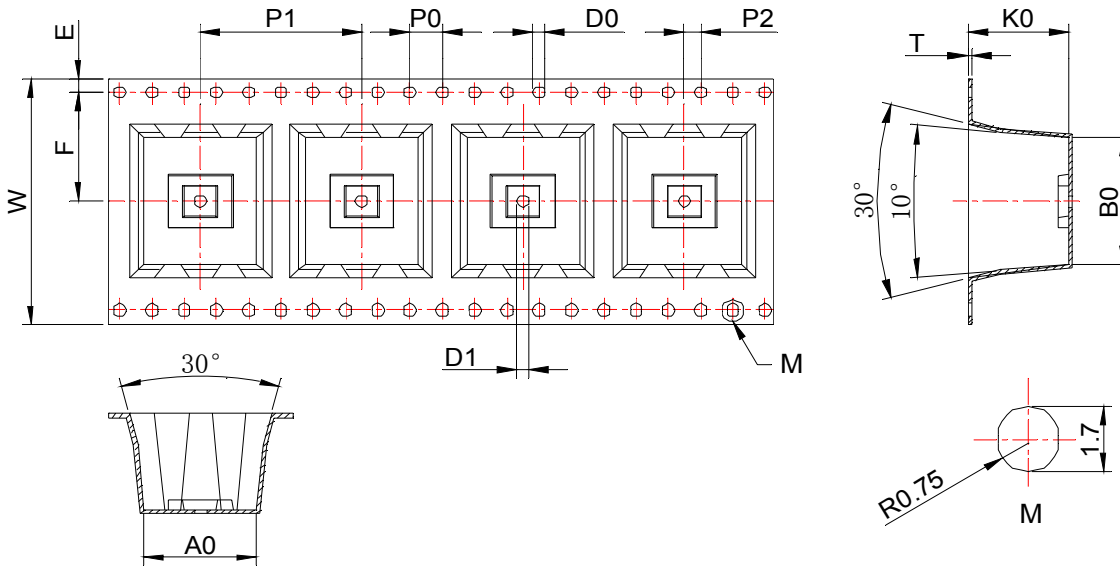
上温 上温 上温 上温 上温 上温 上温 上温区8:	
195.0 195.0 195.0 205.0 220.0 255.0 290.0 290.0C	运输速度:
下温 下温 下温 下温 下温 下温 下温 下温区8:	
195.0 195.0 195.0 205.0 220.0 255.0 290.0 290.0C	45mm/min

Profile Feature	
Average Ramp-Up Rate (Tsmax to Tp)	3°C/Second Max.
Preheat	
-Temperature Min. (Tsmín)	150°C
-Temperature Max. (Tsmáx)	200°C
-Time (Tsmín to Tsmáx)	60-120 Seconds
Time maintained above:	
-Temperature (TL)	217°C
-Time (TL)	60-150 Seconds
Peak/Classification Temperature (Tp)	250°C
Time within 5°C of actual PeakTemperature (Tp)	10 Seconds Max.
Ramp-Down Rate	6°C/Second Max.
Time 25°C to Peak Temperature	8 Minutes Max.

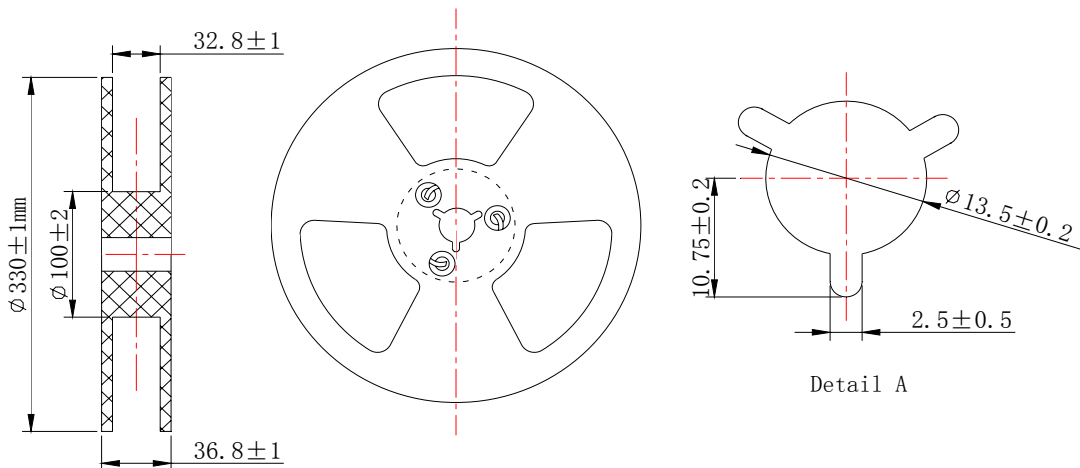
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10.Tape Dimensions (Unit:mm)



symbol	A0	B0	K0	P0	P1	P2
Spec	14.0±0.3	16.5±0.3	12.5±0.3	4.0±0.1	20.0±0.15	2.0±0.1
symbol	W	T	E	F	D0	D1
Spec	32.0±0.3	0.5±0.05	1.75±0.1	14.2±0.1	∅ 1.5 ^{+0.1} ₀	∅ 2.0±0.1



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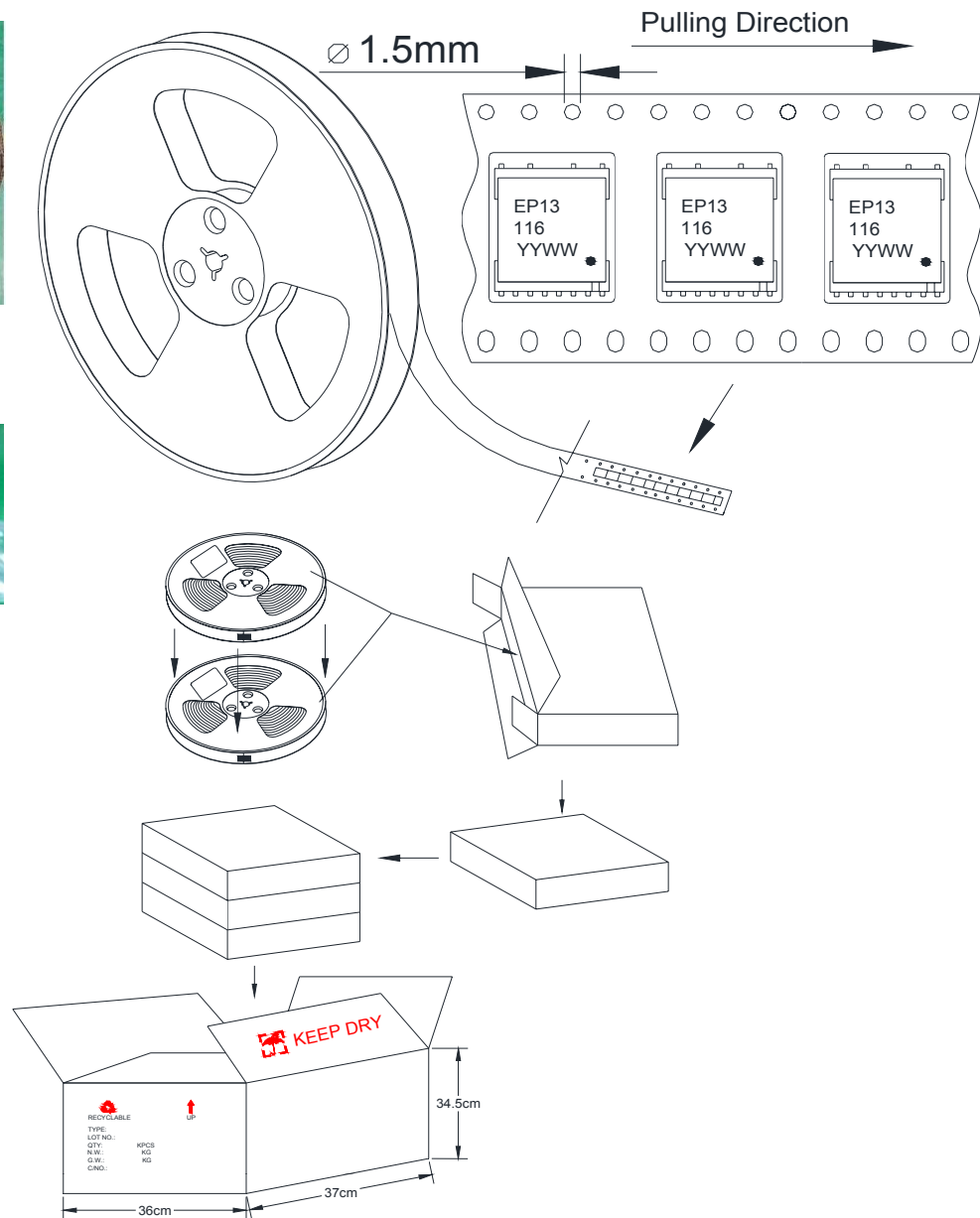
Product Specification

11.Packing Request

- *32 mm pearl cotton to the inner part of the carrier tape for two rounds. (please see the figure 1)
- *32 mm cartoon paper for one round at the outer part of the carrier tape. (please see the figure 1)
- *Every roll of the carrier tape can contain 200pcs products.
- *Every small packing box contains two rolls of carrier tape. Total quantity: 400pcs.
- *Every cartoon box contains 3 small packing boxes. Total quantity: 1200pcs.



figure 1



Semitel'S MODEL NO. :	EP13-116	CUSTOMER'S MODEL NO. :	
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Test Report

Test Instruments									
HP4284A		HP4284A		VR131			HP4284A		CS2670A
NO	Inductance	LK-Inductance	DCR			T.H.D	Turns Ratio		Hi-Pot
	at 10KHz,0.1Vrms	at 100KHz,0.1Vrms	at 25°C	at 25°C	at 25°C	at 30KHz/3.162V	at 100KHz,0.1Vrms		1mA.2SEC.
	L(16-9) Tie(11-14)	LK(16-9) Tie(11-14,1-2-3-4-5-6-7-8)	R(1-4) Tie(2-3)	R(5-8) Tie(6-7)	R(16-9) Tie(11-14)	PIN(16-9):PIN(1-4)	PIN(16-9):(1-4) Tie(11-14,2-3)	PIN(16-9):(5-8) Tie(11-14,6-7)	PRI. TO SEC.
	400uH ±10%	1.6uH MAX.	0.36Ω MAX.	0.47Ω MAX.	1.25Ω MAX.	-82.5dB MAX.	2.7:1,±5%	2.7:1,±5%	1875VAC
1									
2									
3									
4									
5									
MIN.	0.00	0.00	0.00	0.00	0.00	0.00			
MAX.	0.00	0.00	0.00	0.00	0.00	0.00			
AVG.	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!			
Result	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed
Overall Dimensions Test					Measurement Tools: Caliper (Unit:mm)				
NO	A	B	C	D	E	F	G	H	
	14.4MAX.	17.17MAX.	12.7MAX.	0.6±0.1	1.7±0.3	3.4±0.3	5.1±0.3	15.1REF.	
1									
2									
3									
4									
5									
MIN.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MAX.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AVG.	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Result	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed
Semitel'S MODEL NO. :			EP13-116		CUSTOMER'S MODEL NO. :				
VERSION:			E		CUSTOMER'S PART NO. :				
DATE:			2021/1/11						