

## SPECIFICATION FOR APPROVAL

<p><b>CUSTOMER'S APPROVAL CHOP</b></p>  <p>Approval's Condition: _____</p> <p>Approved Date: _____</p>
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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. :** \_\_\_\_\_  
**EP13-553**

**VERSION:** \_\_\_\_\_  
**C**

**DATE:** \_\_\_\_\_  
**2020/7/1**

**Attachments:**

- Product Specification
- Sample Qty. :
- Test Data

Prepared By	Checked By	Approved By
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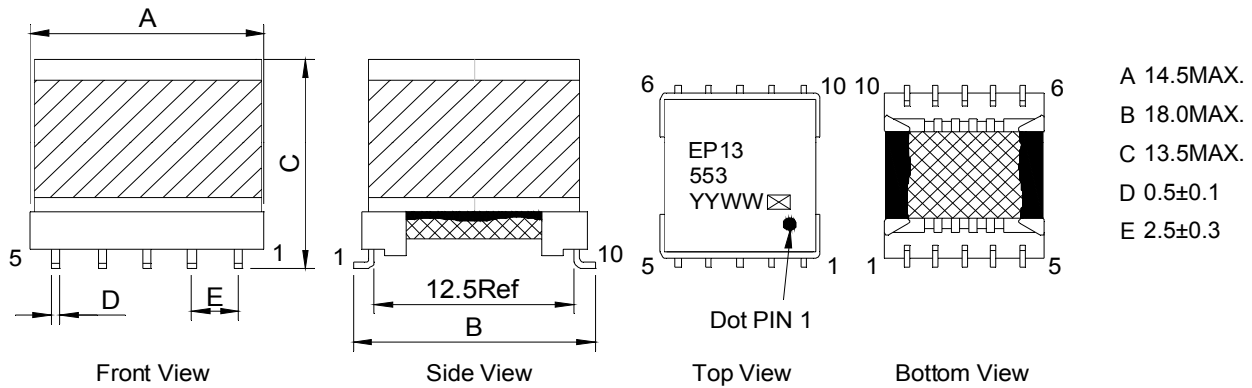
### Revision Record

Version	Revision Date	Revision For Items	Revision For Items
A	2019/3/29	New Revision	-
B	2019/7/25	Dimension F changes from 12.8±0.5mm to 13.5±0.5mm	Change according to the actual product size
		Dimension G changes from 13.6±0.5mm to 15.1±0.5mm	
C	2020/7/1	Design change and bobbin to L pin	Customer Request

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# Product Specification

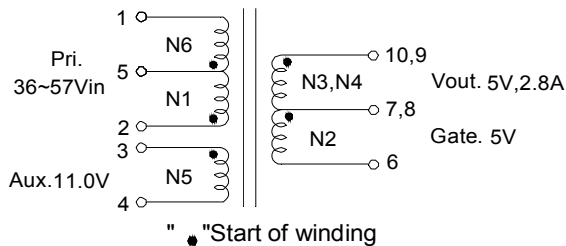
## 1.Physical Dimensions (Unit:mm)



### Notes:

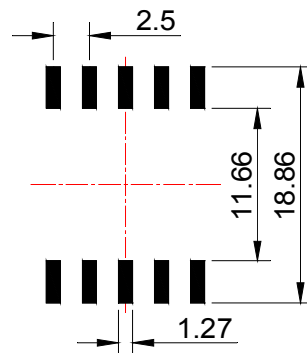
- \*Marking type is laser printing, Dot indicates the location of pin#1.
- \*YY: Year Code; WW: Week Code
- \* :When making samples, S is used to represent the product is a sample.
- \* :Use different letters or numbers to represent the products are produced from different production lines .
- \*Terminals should be measured excluding the length of the soldered point.
- \*Coplanarity Requirement: Less than 0.15mm

## 2.Connection

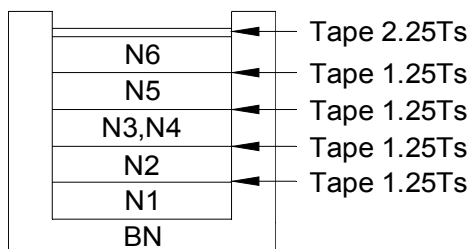


- " • "Start of winding
- \*Customer to tie terminals 7&8 and 9&10 on PC board.
- \*Application of the transformer allows for the leadwires between terminals 7&8 and 9&10 to solder bridge.

## 3.Recommended Pad Layout (Unit:mm)



## 4.Structure of Products



## 5. No of Turns & Wire Spec

No	No of Pin	Turns	Wire Spec
N1	2 - 5	15 Ts	ø0.24mm*2P P180
N2	7 - 6	5 Ts	ø0.15mm*2P P180
N3,N4	10.9 - 7,8	5 Ts	ø0.24mm*6P P180
N5	3 - 4	11 Ts	ø0.15mm*2P P180
N6	5 - 1	15 Ts	ø0.24mm*2P P180

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### 6. Electrical Characteristics

\*Electrical specifications @ 25°C unless otherwise noted:

\*Operating temperature range: -40°C to +125°C .

\*Storage temperature range: -40°C to +125°C .

Item	Winding	Specifications	Test Conditions
Inductance	L(2-1)	150uH±7%	at 250kHz,0.1Vrms
LK-Inductance	LK(2-1) Tie other	1.0uH MAX.	at 250kHz,0.1Vrms
DCR	R(2-1)	164mΩ MAX.	at 25°C
	R(3-4)	164mΩ MAX.	
	R(7-6)	75mΩ MAX.	
	R(10,9-7,8)	10mΩ MAX.	
Turns Ratio	(2-1):(3-4):(7-6):(10,9-7,8)	30:11:5:5;±3%	at 250kHz,0.1Vrms
Hi-pot	Pri. To Sec.	1500VAC	5mA 3Sec
	Win. To Core	500VAC	5mA 3Sec

### 7. Bill of Material

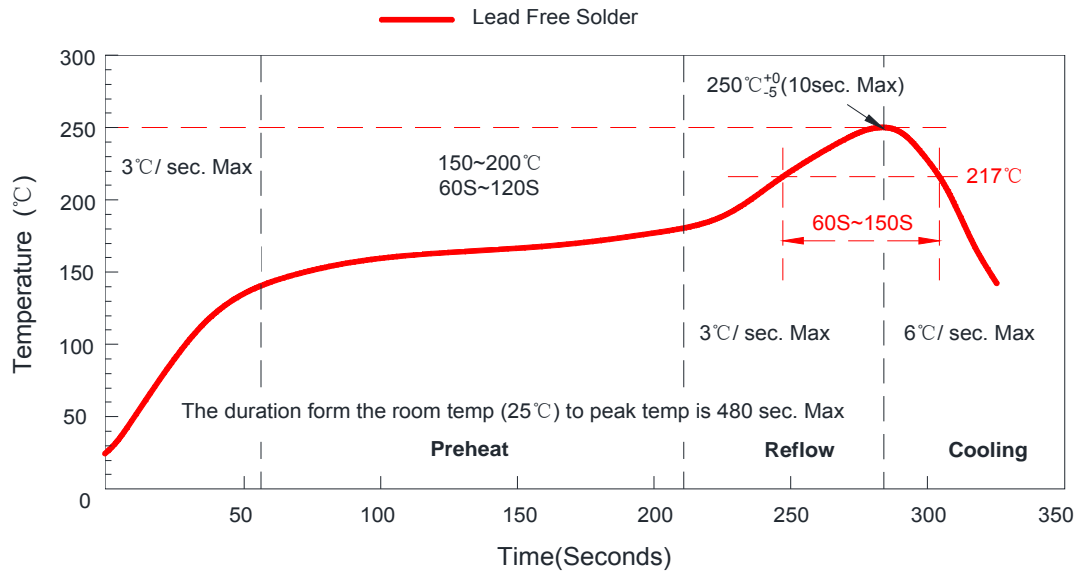
No	Items	Material Name	Manufacturer	UL File No	SGS File No
1	Core	MnZn ferrite core JCP-95	FCRI or Equivalent	NIL	CANEC1913430901
2	Bobbin	PM-9630	SUMITOMO (SumiDurez) or Equivalent	E41429	SHAEC2002442505
3	Copper Wire	Polyurethane bare wire (Cu) Polysol 180	ELEKTRISOLA or Equivalent	E258243	CE/2020/34972
4	Polyimide Tape	Brown adhesive plastic HN NC 0.025mm V-0	RUNSEA (RAYITEK) or Equivalent	E339977	SZXEC1900617511
5	EPOXY	EB-360	CHANGFENG or Equivalent	NIL	SHAEC1925290501
6	EPOXY	TH320	TIAN HUAN or Equivalent	E257593	SZXEC1902353001
7	Varnish	8562*	HANG CHEUNG or Equivalent	E200154	CANEC1900008105
8	Solder	Lead free solder	HONGTAIZHOU or Equivalent	NIL	CANEC1911577101

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### 8.Recommended Temperature Conditions of Air Reflow Soldering

#### Test Solderability Temperature Profile



Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate ( $T_{s_{max}}$ to $T_p$ )	3°C/Second Max.
Preheat -Temperature Min( $T_{s_{min}}$ ) -Temperature Max( $T_{s_{max}}$ ) -Time( $t_{s_{min}}$ to $t_{s_{max}}$ )	150°C 200°C 60-180 Seconds
Time maintained above: -Temperature( $T_L$ ) -Time( $t_L$ )	217°C 60-150 Seconds
Peak/Classification Temperature( $T_p$ )	250°C
Time within 5°C of actual Peak Temperature( $t_p$ )	10 Seconds Max
Ramp-Down Rate	6°C/Second Max.
Time 25°C to Peak Temperature	8 Minutes Max.

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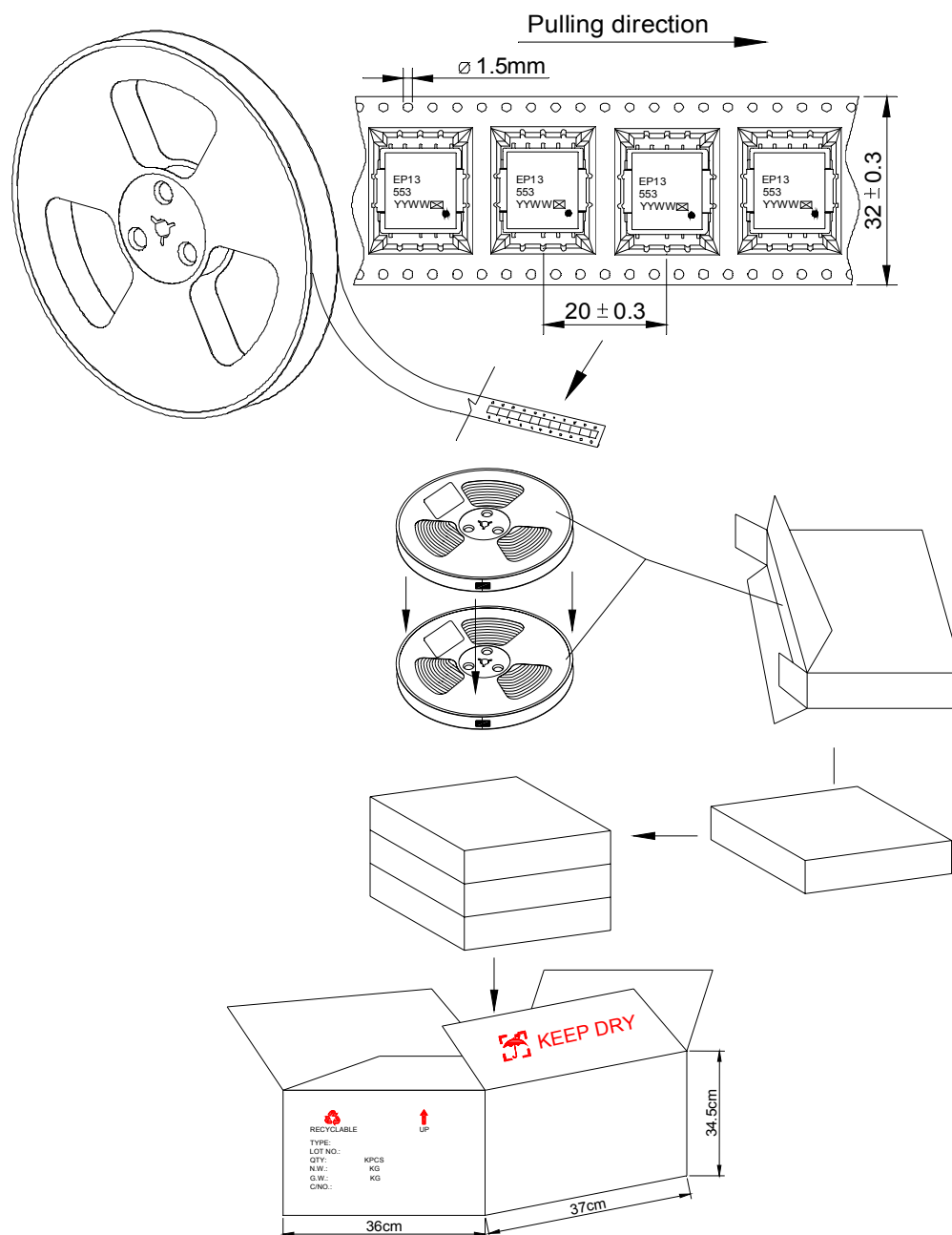
## Product Specification

### 9.Packing Request

\*Every roll of the carrier tape can contain 200 pcs products.

\*Every small packing box contains two rolls of carrier tape. Total quantity: 400 pcs.

\*Every carton box contains 3 small packing boxes. Total quantity: 1200 pcs.



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### Test Report

Test Instruments									
NO	HP4284A		DCR METER 131				HP4284A	CS2670A	
	Inductance	LK-Inductance	DCR				Turns Ratio	Hi-pot	
	at 250kHz,0.1Vrms	at 250kHz,0.1Vrms	at 25°C	at 25°C	at 25°C	at 25°C	at 250kHz,0.1Vrms	5mA 3Sec	
	L(2-1)	LK(2-1) Tie other	R(2-1)	R(3-4)	R(7-6)	R(10,9-7,8)	(2-1):(3-4):(7-6):(10,9-7,8)	Pri. To Sec.	Win. To Core
	150uH±7%	1.0uH MAX.	164mΩ MAX.	164mΩ MAX.	75mΩ MAX.	10mΩ MAX.	30:11:5:5;±3%	1500VAC	500VAC
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!			
<b>Result</b>	<b>Passed</b>	<b>Passed</b>	<b>Passed</b>	<b>Passed</b>	<b>Passed</b>	<b>Passed</b>	<b>Passed</b>	<b>Passed</b>	<b>Passed</b>
<b>Overall Dimensions Test</b>						<b>Measurement Tools: Caliper (Unit:mm)</b>			
NO	A	B	C	D	E				
	14.5MAX.	18.0MAX.	13.5MAX.	0.5±0.1	2.5±0.3				
1									
2									
3									
4									
5									
MIN.	0.00	0.00	0.00	0.00	0.00				
MAX.	0.00	0.00	0.00	0.00	0.00				
AVG.	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!				
<b>Result</b>	<b>Passed</b>	<b>Passed</b>	<b>Passed</b>	<b>Passed</b>	<b>Passed</b>				

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