

KV ELECTRONICS CO., LTD.

988 MOO 2, SOI THETSABAN BANG PU 60

TUMBOL THAI BAN , AMPHUR MUANG

SAMUTPRAKARN 10280

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E-MAIL : kvea@loxinfo.co.th

Customer name : Electronic source

Customer part no. : ES00104

Drawing no. :

Description : Transformer EE-19

KV no. : 12448

Revision : 07

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Issue date
17 September 2012

For KV

Released by

Checked by

Approve by

For Hitachi

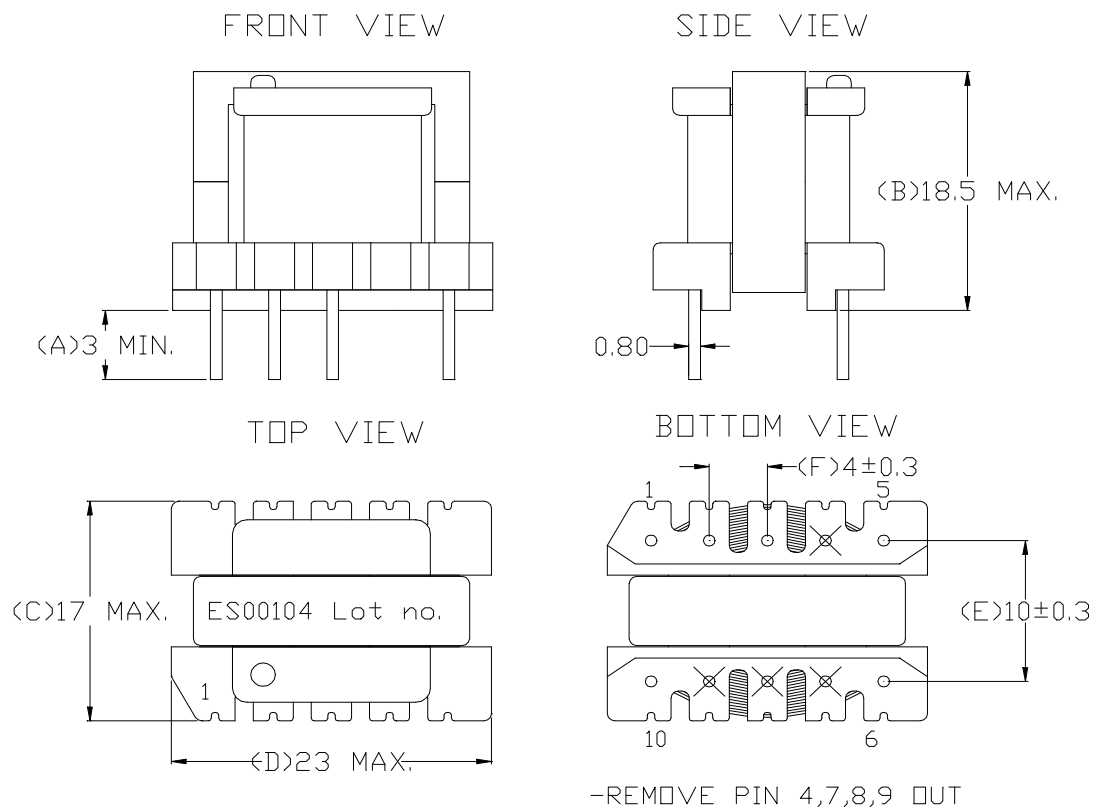
Approve by

Revise	Effective
01	01-Apr-13
02	17-Apr-13
03	10-May-13
04	29-May-13
05	12-Jul-13
06	04-Dec-15
07	16-Dec-16

Rev.	Date	Date	Revise description	Page.
01	01-Apr-13	01-Apr-13	- Add part CORE EE-19 Matreial PC40 from Xuyi in components list.	2
02	17-Apr-13	17-Apr-13	- Add part Copper-Foil 0.05mm. X 7mm. in components list.	2
			- Add shield on the outer side of the transformer winding = 1 Ts.	3
03	10-May-13	10-May-13	- Change from P1 Pin 3-1 to P1 Pin 3-5	3
			- Change from B1 Pin 4-5 to B1 Pin 2-1	3
			- Change from B1 Winding = 23 Ts. To B1 Winding = 25 Ts.	3
04	29-May-13	29-May-13	- Add remove pin 4,7,8,9 out in drawing.	2
05	12-Jul-13	12-Jul-13	- Cancele Copper-Foil 0.05mm. X 7mm. in components list.	2
06	04-Dec-15	04-Dec-15	- Add kapton tape in components list.	2
07	16-Dec-16	16-Dec-16	- Add Process Flow Chart KV12448	4

**1. Components list.**

<u>Item.</u>	<u>Material.</u>	<u>Manufacturer.</u>
1. Bobbin	Phenolic (UL94V-0)	Chang chun plastic co., ltd UL no. E59481(S). or equivalent.
2. Core EE-19 Core EE-19	DMR40 PC40	Dmegc. Xuyi.
3. Copper wire	Polyurethane enameled copper (130 deg.c).	Thai Hitachi enamel wire co., ltd. UL no. E137472. Pacific-Thai electric wire & cable co.,ltd. UL no. E142108.
4. T.I.W. wire	Tripple insulating wire (130 deg.c)	Dah Jin Technology.co.,ltd UL no. E236542.
5. Insulation tape	Polyester #1350F (130 deg.c) Polyester #35660 (130 deg.c)	3M UL No.E17385. Symbio INC UL.no. E50292.
6. Kapton tape	Polyimide film insulating tape with silicone base adhesive, Cat. No. KA180K	Symbio Inc. UL No.E50292.
7. Solder bar	Sn / Cu	Ultra core or equivalent.
8. Varnish	Ultimeg 2000/380	A.E.V PLC UL no. E220579 or equivalent.

The drawing and dimension in millimetre unit.

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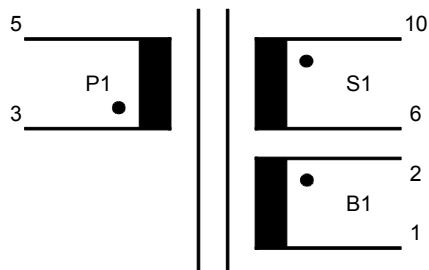
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2. Schematic diagram and winding instruction.



- P1 Pin 3-5 = Wire 0.14 mm. / 151 Ts.
Insulation 1 Ts.
- B1 Pin 2-1 = Wire 0.14 mm. X2 / 25 Ts.
Insulation 3 Ts.
- S1 Pin 10-6 = TEX-E Wire 0.45mm. / 16 Ts.
Insulation 2 Ts.

Note : S1 use kapton tape

3. Electricals specification and test data (at 25 deg.c).

Item	Pin no.	Specification	Test data									
			1	2	3	4	5	6	7	8	9	10
Inductance (L) At 10KHz, 1V	3 – 5	3.23 mH +/-10%	3.14	3.13	3.40	3.25	3.31	3.13	3.37	3.25	3.09	3.28
Leakaged Inductance At 10KHz, 1V (LK) (Shorted 1,2,6,10)	3 – 5	97.01 uH Max.	74.30	72.00	68.70	66.50	69.90	70.30	69.30	67.80	66.00	66.40
DC-Resistance (DCR)	3 – 5	6.00 Ohm Max.	4.80	4.74	4.73	4.71	4.72	4.75	4.70	4.76	4.69	4.72
Voltage ratio test. I/P 3-5, 20KHz, 1Vrms	2 – 1 10 – 6	0.162-0.168 Vrms 0.102-0.109 Vrms	0.165 0.105	0.164 0.105	0.165 0.106	0.165 0.106	0.165 0.105	0.165 0.106	0.166 0.106	0.165 0.106	0.165 0.106	0.165 0.105
Hi-Potential test. 1mA 50Hz	Apply 2000Vac between P1,B1 to S1 for 2 sec. Apply 1500Vac between wire to core for 2 sec.								Passed Passed			
Phase check follow to schematic diagram.									Passed			

Mechanical test
Sample no.

	A	B	C	D	E	F
1	5	17.48	16.01	22.13	10.18	3.88
2	5	17.43	15.99	22.04	10.16	3.86
3	5	17.39	15.94	22.03	10.15	3.87
4	5	17.46	15.89	22.02	10.25	3.99
5	5	17.38	15.95	22.04	10.16	3.90
6	5	17.46	15.96	22.14	10.29	3.96
7	5	17.38	15.94	22.13	10.18	3.92
8	5	17.24	16.02	22.13	10.15	3.98
9	5	17.36	16.06	22.04	10.25	4.01
10	5	17.25	16.07	22.07	10.22	3.98

Test date : 15 May 2013

Test by : Apiwat



4. Process Flow Chart KV12448

Process Flow Chart of KV12448

