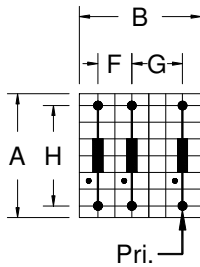




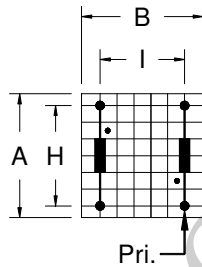
### TL401 Series

- Rated voltage : up to 1000V
- Operating Frequency: 60 kHz max.
- Ignition current up to 3A
- Voltage time integral: 1500V $\mu$ s max.
- Dielectric strength : 4000V<sub>rms</sub>
- Insulation Class : Class B (130°C)
- Vacuum potting
- Ambient temperature (ta): -25°C ~+70°C
- Storage temperature : -40°C ~ +85°C

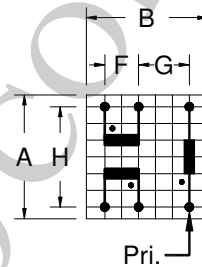
### Schematics Platforms (Type 1)



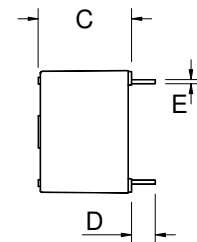
Electrical Schematic A



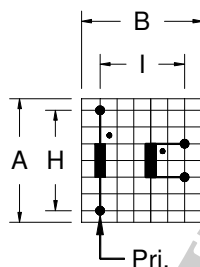
Electrical Schematic B



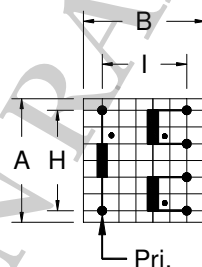
Electrical Schematic C



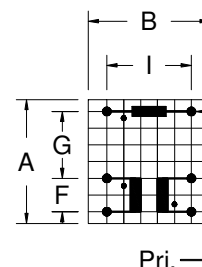
Side View



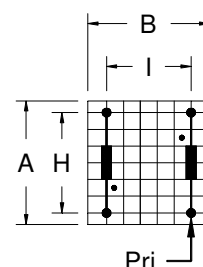
Electrical Schematic D



Electrical Schematic E



Electrical Schematic F



Electrical Schematic G

### Top View

Product Series	Dimension (mm)									Electrical Schematic	Weight (g)
	A	B	C	D	E	F	G	H	I		
TL401-13	18.6	18.3	14.0	4.0	SQ.0.5	5.0	7.5	15.0	12.5	A,B,C	9.5
TL401-11	18.6	18.3	14.0	4.0	SQ.0.5	5.0	10.0	15.0	12.5	D,E,F,G	9.0
Tolerance	max.	max.	max.	min.	± 0.1	± 0.2	± 0.3	± 0.5	± 0.5	--	approx.

Note: Unused pins are omitted for standard parts.

### Part Number Designation:

TL401-RW-XYZZ

Where R = Core size

(1) EF16 (2) EF20 (3) EF25 (4) EF30

W = No. of bobbin section

(1) Single (2) Double (3) Three

X = No. of winding

Y = Electrical schematic

ZZ = Winding Part no.

Part Number	Turns Ratio ±2%	Ref. Primary Inductance	Ref. Primary Constant, ET	Max. Leakage Inductance	Ref. Interwinding Capacitance	Max. DC Resistance Primary	Max. DC Resistance Secondary 1	Max. DC Resistance Secondary 2	Dielectric Strength Vrms	Electrical Schematic
		mH	Vμs	μH	pF	Ω	Ω	Ω		
TL401-13-3A01	1 : 1 : 1	2.5	250	90	10	0.6	0.6	0.6	4000	A
TL401-13-3A02	1 : 1 : 1	1.5	200	55	8	0.4	0.4	0.4	4000	A
TL401-13-3A03	3 : 1 : 1	16.5	400	50	10	2.3	0.5	0.5	4000	A
TL401-13-3A04	1 : 1 : 1	2.5	250	85	7	0.8	0.8	0.8	4000	A
TL401-13-3A05	3 : 1 : 1	15.0	400	70	9	2.8	0.9	0.9	4000	A
TL401-13-3A06	2 : 1 : 1	17.0	410	140	9	3.1	1.5	1.5	4000	A
TL401-13-3A07	1 : 1 : 1	1.1	170	45	6	0.55	0.55	0.55	4000	A
TL401-13-3A08	1 : 1 : 1	0.5	120	20	7	0.3	0.3	0.3	4000	A
TL401-13-3A09	1 : 1 : 1	1.60	130	60	5	0.5	0.5	0.5	4000	A
TL401-13-3A10	2 : 1 : 1	18.2	440	135	8	4.6	0.86	0.86	4000	A

Note: (1) Primary Inductance measured at 10 kHz, 0.05V. (Sec coils open)

(2) Leakage Inductance measured at the secondary side, short circuit at the primary side.

If there are several secondary coils only one side at the time is connected.

(3) High potential tested for all isolation windings.

Part Number	Turns Ratio ±2%	Ref. Primary Inductance	Ref. Primary Constant, ET	Max. Leakage Inductance	Ref. Interwinding Capacitance	Max. DC Resistance Primary	Max. DC Resistance Secondary 1	Max. DC Resistance Secondary 2	Dielectric Strength Vrms	Electrical Schematic
		mH	Vμs	μH	pF	Ω	Ω	Ω		
TL401-13-2B01	1 : 1	2.2	250	40	8	0.8	0.8	--	4000	B
TL401-13-2B02	2 : 1	7	430	35	7	2.1	1.1	--	4000	B
TL401-13-2B03	2 : 1	17	410	80	9	3.2	1.6	--	4000	B
TL401-13-2B04	3 : 1	12	340	30	8	2	0.8	--	4000	B
TL401-13-2B05	1 : 1	8	500	150	10	1.2	1.2	--	4000	B
TL401-13-2B06	1 : 1	2.5	250	40	8	0.6	0.6	--	4000	B
TL401-13-2B07	1 : 1	8	450	100	10	1.48	1.48	--	4000	B
TL401-13-2B08	1 : 1	8	460	100	10	1.8	1.2	--	4000	B
TL401-13-2B09	2 : 1	8	300	40	10	1.5	0.8	--	4000	B
TL401-13-2B10	2 : 1	19	440	85	8	5.5	0.9	--	4000	B
TL401-13-2B11	3 : 1	21	450	35	8	5	0.7	--	4000	B
TL401-13-3C01	1 : 1 : 1	2.5	250	75	7	0.75	0.75	0.75	4000	C
TL401-13-3C02	1 : 1 : 1	3.45	280	72	9	0.65	0.65	0.65	4000	C
TL401-13-3C03	3 : 1 : 1	19	450	70	8	5	0.7	0.7	4000	C
TL401-11-2D01	1 : 1.3	0.20	72	1.2	11	0.12	0.18	--	5000	D
TL401-11-2D02	1 : 1	1.70	200	5	25	0.32	0.26	--	3750	D
TL401-11-2D03	1 : 1	1.40	180	3	20	0.3	0.32	--	4000	D
TL401-11-3E01	1 : 1.3 : 1.3	0.2	72	1.2	12	0.2	0.3	0.3	5000	E
TL401-11-3E02	1 : 1 : 1	2.50	260	5	25	0.5	0.65	0.65	3200	E
TL401-11-3F01	1 : 1 : 1	0.82	150	2	22	0.25	0.35	0.45	4200	F
TL401-11-3F02	1 : 1.3 : 1 : 1	1.88	220	4	20	0.52	0.45	0.45	4000	F
TL401-11-3F03	1.4 : 1 : 1	2.10	230	4	20	0.55	0.4	0.4	4000	F
TL401-11-3F04	1 : 1.2 : 1.2	1.20	180	3	22	0.43	0.4	0.6	4000	F
TL401-11-3F05	1 : 1 : 1	1.8	220	2.5	23	0.415	0.35	0.48	3100	F
TL401-11-3F06	1 : 1 : 1	0.32	90	0.8	20	0.07	0.12	0.16	4400	F
TL401-11-2G01	1 : 1	2.5	250	3	80	0.62	0.75	--	3200	G
TL401-11-2G02	1 : 1	2.5	260	3	60	0.7	0.7	--	3200	G
TL401-11-2G03	2 : 1	2.5	260	4	50	1.0	0.3	--	3200	G
TL401-11-2G04	3 : 1	5	360	5	40	1.2	0.3	--	3200	G

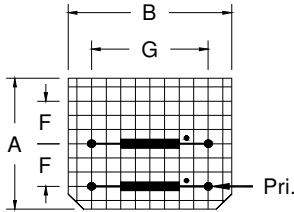
Note: (1) Primary Inductance measured at 10 kHz, 0.05V. (Sec coils open)

(2) Leakage Inductance measured at the secondary side, short circuit at the primary side.

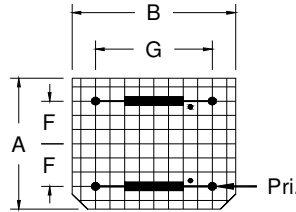
If there are several secondary coils only one side at the time is connected.

(3) High potential tested for all isolation windings.

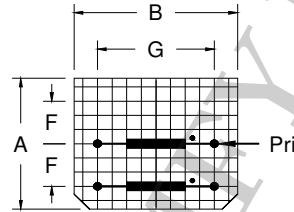
## Schematics Platforms (Type 2)



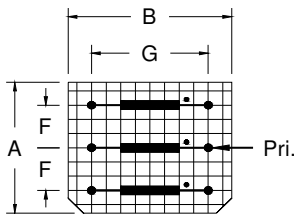
Electrical Schematic A



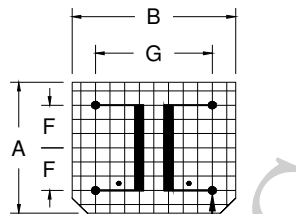
Electrical Schematic B



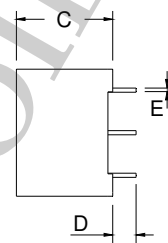
Electrical Schematic C



Electrical Schematic D

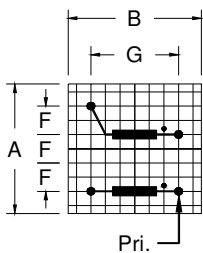


Electrical Schematic E

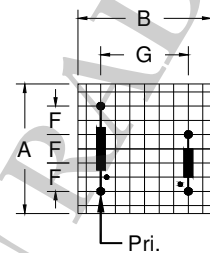


### Top View

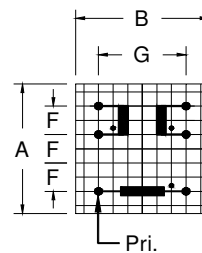
### Side View



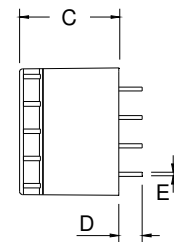
Electrical Schematic F



Electrical Schematic G



Electrical Schematic H



### Top View

### Side View

Product Series	Dimension (mm)							Electrical Schematic	Weight (g)
	A	B	C	D	E	F	G		
TL401-23	23.0	28.0	17.0	4.0	SQ.0.64	7.5	20.0	A,B,C,D,E	20
TL401-21	22.8	22.8	17.5	4.0	SQ.0.64	5.0	15.0	F,G,H	17
Tolerance	max.	max.	max.	min.	± 0.1	± 0.3	± 0.5	--	approx.

Note: Unused pins are omitted for standard parts.

Part Number	Turns Ratio ±2%	Ref. Primary Inductance mH	Ref. Primary Constant, ET Vμs	Max. Leakage Inductance μH	Ref. Interwinding Capacitance pF	Max. DC Resistance Primary Ω	Max. DC Resistance Secondary 1 Ω	Max. DC Resistance Secondary 2 Ω	Dielectric Strength Vrms	Electrical Schematic
TL401-23-2A01	1 : 1	7.70	650	85	7	1.15	1.15	--	4000	A
TL401-23-2A02	1 : 1	2.10	300	30	6	0.55	0.55	--	4000	A
TL401-23-2B01	1 : 1	2.90	370	80	5	0.6	0.6	--	4000	B
TL401-23-2C01	1 : 1	5.0	500	85	6	1.2	1.2	--	4000	C
TL401-23-2C02	1 : 1	3.0	380	55	8	0.6	0.6	--	4000	C
TL401-23-2C03	1 : 1	28.0	1100	56	30	1.9	2.2	--	2500	C
TL401-23-3D01	3 : 1 : 1	121	1550	270	10	17	3.5	3.5	4000	D
TL401-23-3D02	1 : 1 : 1	8	600	230	8	1.5	1.5	1.5	4000	D
TL401-23-3D03	1 : 1 : 1	2.0	300	80	7	0.55	0.55	0.55	4000	D
TL401-23-3D04	3 : 1 : 1	15.0	520	70	8	2	0.55	0.55	4000	D
TL401-23-3D05	1 : 1 : 1	3	380	90	9	0.6	0.6	0.6	4000	D
TL401-23-2E01	1 : 1	3	380	5	80	0.9	0.9	--	6000	E
TL401-21-2F01	1 : 1	3.8	420	7	35	0.45	0.5	--	4000	F
TL401-21-2F02	2 : 1	5.2	500	9	26	0.5	0.25	--	4000	F
TL401-21-2F03	3 : 1	4.7	480	9	25	0.45	0.15	--	4000	F
TL401-21-2F04	1 : 1	0.31	130	0.9	20	0.1	0.1	--	4000	F
TL401-21-2G01	3 : 1	1.68	280	6	22	0.155	0.066	--	3200	G
TL401-21-3H01	1 : 1 : 1	3.5	420	6	39	0.8	0.8	0.8	4000	H
TL401-21-3H02	2 : 1 : 1	5.1	500	8	31	0.55	0.2	0.25	4000	H
TL401-21-3H03	1 : 1 : 1	0.36	130	0.6	23	0.09	0.1	0.1	4000	H

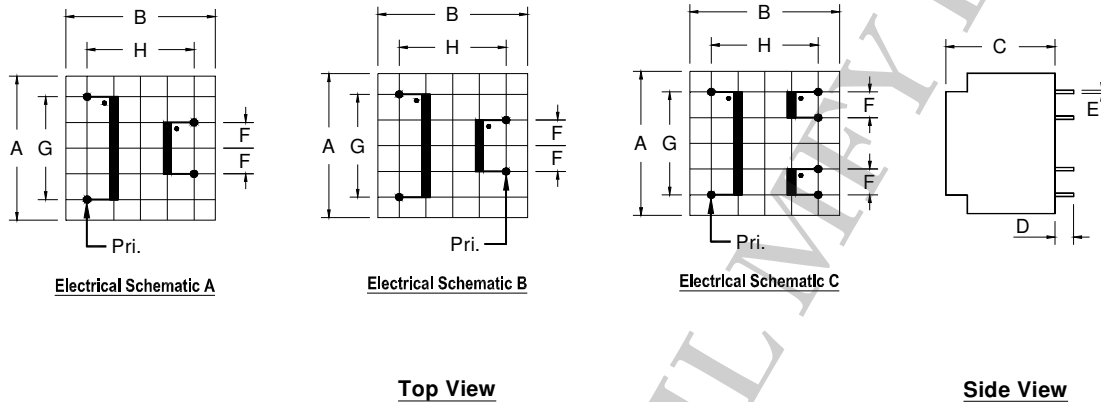
Note: (1) Primary Inductance measured at 10 kHz, 0.05V. (Sec coils open)

(2) Leakage Inductance measured at the secondary side, short circuit at the primary side.

If there are several secondary coils only one side at the time is connected.

(3) High potential tested for all isolation windings.

## Schematics Platforms (Type 3)(Part I)



Product Series	Dimension (mm)								Weight (g)
	A	B	C	D	E	F	G	H	
TL401-31(I)	28.0	28.0	21.0	4.0	SQ.0.64	5.0	20.0	20.0	40
Tolerance	max.	max.	max.	min.	± 0.1	± 0.2	± 0.3	± 0.5	approx.

Note: Unused pins are omitted for standard parts.

Part Number	Turns Ratio ±2%	Ref. Primary Inductance mH	Ref. Primary Constant, ET Vµs	Ref. Leakage Inductance µH	Ref. Interwinding Capacitance pF	Max. DC Resistance Primary Ω	Max. DC Resistance Secondary 1 Ω	Max. DC Resistance Secondary 2 Ω	Dielectric Strength Vrms	Electrical Schematic
TL401-31-2A01	1 : 1	2.2	500	5	38	0.4	0.4	--	4000	A
TL401-31-2A02	1 : 1	12.3	1100	12	50	0.7	0.8	--	4000	A
TL401-31-2A03	2 : 1	7.0	2500	90	45	1.0	0.5	--	4000	A
TL401-31-2A04	2 : 1	80.0	7600	950	65	6.0	1.9	--	4000	A
TL401-31-2A05	4 : 1	140	8800	1100	45	12.3	1.3	--	4000	A
TL401-31-2A06	1.5 : 1	95	10500	1600	53	13.5	7.1	--	4000	A
TL401-31-2B01	3 : 1	9.7	1000	12	31	0.6	0.2	--	4000	B
TL401-31-3C01	1 : 1 : 1	2.45	500	2.5	35	0.4	0.4	0.4	4000	C
TL401-31-3C02	2 : 1 : 1	12.6	1100	14.5	40	0.9	0.4	0.4	4000	C
TL401-31-3C03	1 : 1 : 1	12.8	1100	14.5	50	0.85	0.85	0.85	4000	C
TL401-31-3C04	3 : 1 : 1	5.1	1120	16.5	32	0.6	0.2	0.2	4000	C

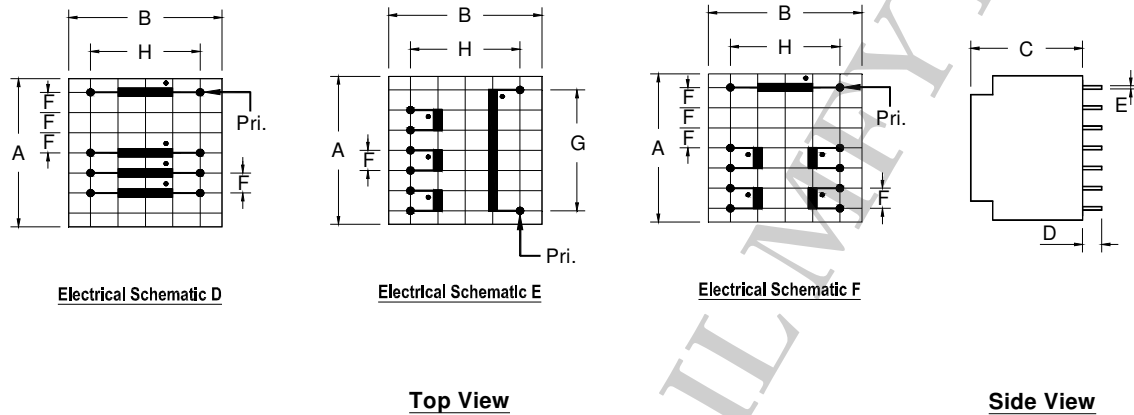
Note: (1) Primary Inductance measured at 10 kHz, 0.05V. (Sec coils open)

(2) Leakage Inductance measured at the secondary side, short circuit at the primary side.

If there are several secondary coils only one side at the time is connected.

(3) High potential tested for all isolation windings.

## Schematics Platforms (Type 3)(Part II)



Product Series	Dimension (mm)								Weight (g)
	A	B	C	D	E	F	G	H	
TL401-31(II)	28.0	28.0	21.0	4.0	SQ.0.64	3.81	22.86	20.0	40
Tolerance	max.	max.	max.	min.	±0.1	±0.2	±0.3	±0.5	approx.

Note: Unused pins are omitted for standard parts.

Part Number	Turns Ratio ±2%	Ref. Primary Inductance mH	Ref. Primary Constant, ET Vμs	Ref. Leakage Inductance μH	Ref. Interwinding Capacitance pF	Max. DC Resistance Primary Ω	Max. DC Resistance Secondary 1 & 2 Ω	Max. DC Resistance Secondary 3 & 4 Ω	Electrical Schematic
TL401-31-4D01	1 : 1 : 1 : 1	3.6	720	2.8	29	0.20	1.5	1.5	D
TL401-31-4D02	1 : 1.2 : 1.2 : 1.2	3.6	720	2.5	31	0.22	1.8	1.8	D
TL401-31-4D03	2 : 1 : 1 : 1	14.4	1440	18.5	30	0.45	1.6	1.6	D
TL401-31-4D04	3 : 1 : 1 : 1	19.4	1672	18.9	24	0.52	1.3	1.3	D
TL401-31-4E01	2 : 1 : 1 : 1	14.4	1440	11.0	33	0.45	1.7	1.7	E
TL401-31-4E02	3 : 1 : 1 : 1	19.4	1672	20.0	22	0.52	1.3	1.3	E
TL401-31-5F01	1 : 1 : 1 : 1 : 1	3.6	720	1.9	65	0.25	1.4	1.7	F
TL401-31-5F02	1 : 1.2 : 1.2 : 1.2 : 1.2	3.6	720	1.8	63	0.25	1.7	2.0	F
TL401-31-5F03	2 : 1 : 1 : 1 : 1	14.4	1440	9.5	60	0.5	1.4	1.8	F
TL401-31-5F04	3 : 1 : 1 : 1 : 1	19.4	1672	15.0	46	0.57	1.1	1.5	F

Note: (1) Primary Inductance measured at 10 kHz, 0.05V. (Sec coils open)

(2) Leakage Inductance measured at the secondary side, short circuit at the primary side.

If there are several secondary coils only one side at the time is connected.

(3) Dielectric strength tested for all isolation windings 4kVrms.