



## **T1/CEPT Telecom Line Interface Transformers**

Dual Surface Mount – “Small Package”

- DUAL SURFACE MOUNT PACKAGE CONTAINS BOTH – TRANSMIT AND RECEIVE TRANSFORMERS
- DESIGNED TO MEET CCITT & FCC REQUIREMENTS
- MODELS MATCHED TO LEADING TRANSCEIVER ICs
- PROVIDE 2000Vrms

### **ELECTRICAL SPECIFICATIONS at 25°C:**

Part No.	Turns Ratio (pri:sec ±5%)	OCL <sup>(3)</sup> (mH Min)	Cw/w <sup>(3)</sup> (pF Max)	LL <sup>(3)</sup> (uH Max)	DCR pri (Ohms Max)	DCR sec (Ohms Max)	Schem .	Primary pins
UT23804	1CT:1.41CT&1CT:1.41CT	1.2 & 1.2	30 & 30	0.8 & 0.8	0.7 & 0.7	0.9 & 0.9	A	16-14 ,11-9
UT23805	1CT:1.41CT&1CT:1.41CT	1.2 & 1.2	30 & 30	0.8 & 0.8	0.7 & 0.7	0.9 & 0.9	A	1-3 ,11-9
UT23810	1:1.385CT & 1:1:1	1.2 & 1.2	35 & 35	0.8 & 0.5	0.8 & 0.8	0.8 & 0.8	B	1-2 , 7-8
UT23811	1CT:2CT & 1:1	1.2 & 1.2	35 & 35	0.8 & 0.5	0.8 & 0.8	1.8 & 0.8	C	1-3 ,11-9
UT23812	1:2CT & 1:1.36	1.2 & 1.2	35 & 35	0.8 & 0.8	0.8 & 0.8	1.8 & 0.8	D	16-14 , 6-8
UT23813	1:2CT & 1:2CT	1.2 & 1.2	35 & 35	0.8 & 0.8	0.8 & 0.8	1.8 & 1.8	E	16-14 , 6-8
UT23816	1:1.15CT & 1:2CT	1.2 & 1.2	35 & 35	0.5 & 0.8	0.8 & 0.8	0.8 & 1.8	E	16-14 , 6-8
UT23817 <sup>(5)</sup>	1:1/1.266 & 1:2CT	1.2 & 1.2	35 & 35	0.8 & 0.8	0.8 & 0.8	0.8 & 1.8	E	16-14 , 6-8
UT23818	1:1.36CT & 1:2CT	1.5 & 1.5	40 & 40	0.5 & 0.5	0.9 & 0.9	1.3 & 1.3	E	16-14 , 6-8
UT23861	1CT:2CT & 1CT:2CT	1.2 & 1.2	30 & 30	0.6 & 0.6	0.7 & 0.7	1.4 & 1.4	A	16-14 , 6-8
UT23862	1CT:2CT & 1:1.36CT	1.2 & 1.2	30 & 30	0.6 & 0.6	0.7 & 0.7	1.0 & 0.8	F	16-14 , 6-8
UT23865	1:1.15CT & 1CT:2CT	1.2 & 1.2	30 & 30	0.6 & 0.6	0.7 & 0.7	0.7 & 1.0	G	16-14 , 6-8
UT23866 <sup>(5)</sup>	1:1/1.26 & 1CT:2CT	1.2 & 1.2	30 & 30	0.6 & 0.6	0.7 & 0.7	0.8 & 1.0	G	16-14 , 6-8
UT23870	1CT:1.15CT&1CT:1.15CT	1.2 & 1.2	30 & 30	0.6 & 0.6	0.7 & 0.7	.75 & .75	A	1-3 , 6-8
UT23878	1CT:1CT & 1CT:2CT	1.2 & 1.2	30 & 30	0.6 & 0.6	0.7 & 0.7	0.7 & 1.0	A	16-14 , 6-8

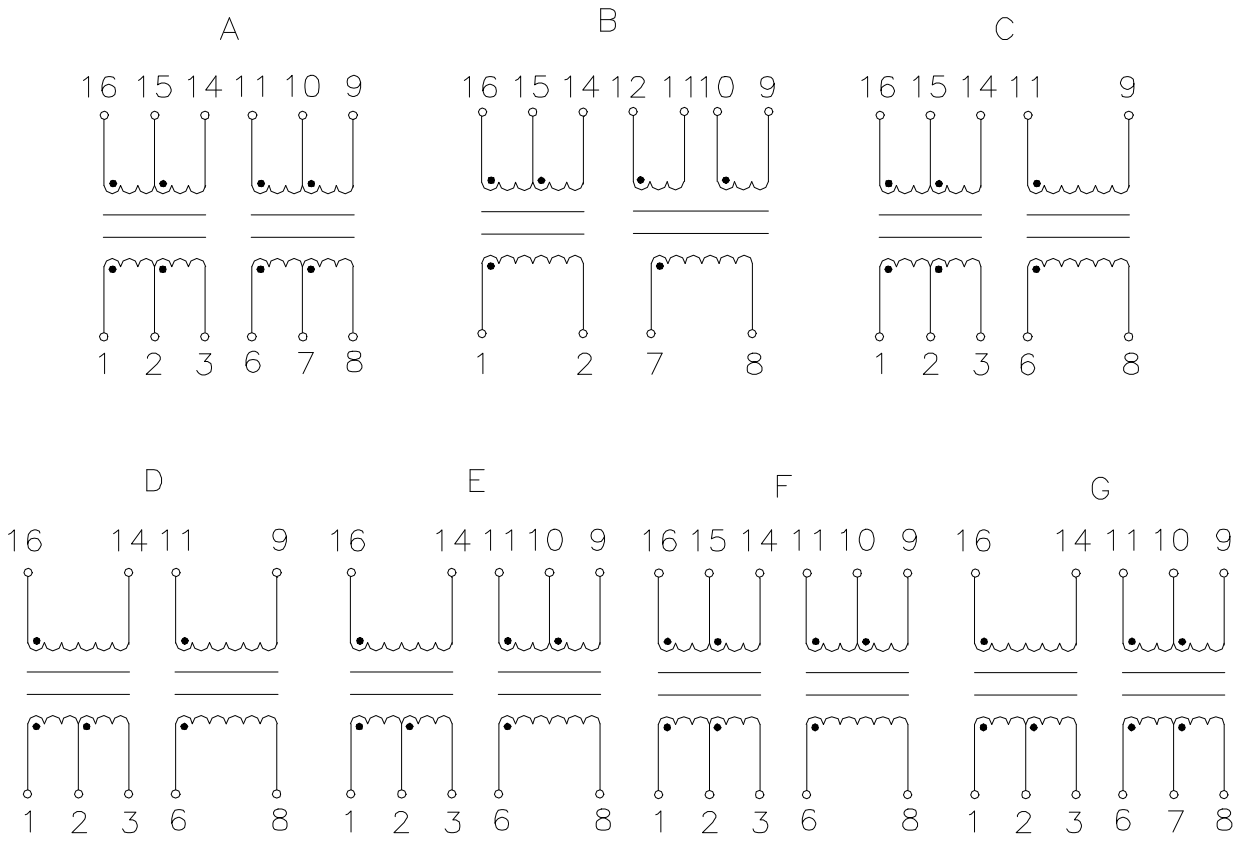
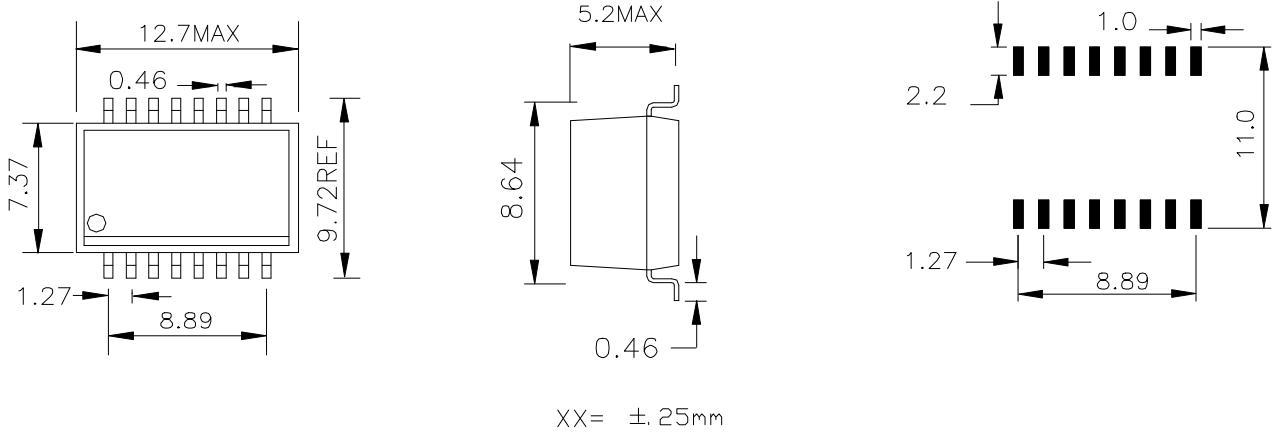




# T1/CEPT Telecom Line Interface Transformers

Dual Surface Mount – “Small Package”

## Package & Schematics



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## ***T<sub>1</sub>/CEPT Telecom Line Interface Transformers***

### *Dual Surface Mount*

- EXTENDED AND STANDARD TEMPERATURE RANGE MODELS
- DUAL SURFACE MOUNT PACKAGE CONTAINS BOTH -TRANSMIT AND RECEIVE TRANSFORMERS
- DESIGNED TO MEET CCITT & FCC REQUIREMENTS
- ET-CONSTANT: ALL COILS HAVE AN ET-CONSTANT OF 10V-usec minimum
- PROVIDE 1500Vrms ISOLATION

### **ELECTRICAL SPECIFICATIONS at 25°C:**

Part No.	Turns Ratio (pri:sec ±5%)	OCL <sup>(3)</sup> (mH Min)	Cw/w <sup>(3)</sup> (pF Max)	L <sub>L</sub> <sup>(3)</sup> (uH Max)	DCR pri (Ohms Max)	DCR sec (Ohms Max)	Schem.	Primary pins
<b>Extended Temperature Range Models<sup>(1)</sup></b>								
UT23821 <sup>(4)</sup>	1CT:2CT & 1CT:2CT	1.2 & 1.2	50 & 50	0.8 & 0.8	1.0 & 1.0	1.7 & 1.7	1E	12-10 ,4-6
UT23822	1CT:2CT & 1:1.36CT	1.6 & 1.6	60 & 55	1.0 & 0.8	1.7 & 1.7	2.0 & 1.7	2E	12-10 ,4-6
UT23825	1:1.15CT & 1CT:2CT	1.6 & 1.6	60 & 50	0.8 & 0.8	1.0 & 1.0	1.0 & 2.0	4E	12-10 ,4-6
UT23826 <sup>(6)</sup>	1:1/1.266 & 1:2CT	1.2 & 1.2	50 & 60	0.8 & 0.8	1.0 & 1.0	1.1 & 1.7	5E	12-10 ,4-6
UT23827 <sup>(5)</sup>	1:2CT & 2:1	1.6 & 1.6	55 & 40	1.3 & 1.3	1.1 & 1.1	1.1 & 0.7	6E	1-3 ,4-6
UT23828	1CT:1CT & 1CT:1CT	1.2 & 1.2	50 & 50	0.8 & 0.8	1.0 & 1.0	1.0 & 1.0	1E	1-3 ,4-6
UT23874	1CT:1.15CT&1CT:1.15CT	1.2 & 1.2	50 & 50	0.8 & 0.8	1.2 & 1.2	1.4 & 1.4	1E	1-3 ,4-6
UT23877	1CT:1CT & 1CT:2CT	1.2 & 1.2	50 & 50	0.8 & 0.8	1.0 & 1.0	1.0 & 1.8	1E	1-3 ,4-6
UT23882	1CT:1.15CT & 1CT:1CT	1.6 & 1.6	60 & 60	0.8 & 0.8	1.2 & 1.2	1.4 & 1.2	1E	12-10 ,4-6
UT23884	1CT:1.36CT&1CT:1.36CT	1.2 & 1.2	50 & 50	0.8 & 0.8	1.2 & 1.2	1.4 & 1.4	1E	1-3 ,4-6
UT23887	1CT:1.41CT&1CT:1.41CT	1.2 & 1.2	50 & 50	0.8 & 0.8	0.9 & 0.9	1.2 & 1.2	1E	12-10 ,9-7
UT23881	1CT:2.3CT & 1CT:2CT	1.2 & 1.2	60 & 50	0.8 & 0.8	1.2 & 1.2	2.1 & 2.1	1E	10-12 ,4-6
<b>Standard Temperature Range Models</b>								
UT23761 <sup>(4)</sup>	1CT:2CT & 1CT:2CT	1.2 & 1.2	35 & 35	0.6 & 0.6	0.7 & 0.7	1.2 & 1.2	1E	12-10 ,4-6
UT23762	1CT:2CT & 1:1.36CT	1.2 & 1.2	35 & 37	0.6 & 0.8	0.7 & 0.7	1.2 & 0.9	2E	12-10 ,4-6
UT23763	1:2CT & 1:1.14CT	1.2 & 1.2	40 & 35	0.55 & 0.8	0.7 & 0.7	1.2 & 0.9	5E	12-10 ,4-6
UT23764	1CT:2CT & 1:1	1.2 & 1.2	30 & 30	0.55 <sup>(2)</sup> & 0.8	0.7 & 0.7	1.2 & 0.7	3E	1-3 ,5-6
UT23765	1:1.15CT & 1CT:2CT	1.5 & 1.2	35 & 35	0.6 & 0.6	0.7 & 0.7	0.9 & 1.2	4E	12-10 ,4-6
UT23766 <sup>(6)</sup>	1:1/1.266 & 1:2CT	1.5 & 1.2	40 & 40	0.4 & 0.5	0.7 & 0.7	0.9 & 1.2	5E	12-10 ,4-6
UT23769	1CT:2CT & 1:1.08CT	1.2 & 1.2	40 & 30	0.6 & 0.6	0.7 & 0.7	1.1 & 0.9	2E	12-10 ,4-6
UT23736 <sup>(6)</sup>	1:1/1.266 & 1:1/1.266	1.5 & 1.5	45 & 45	0.4 & 0.4	0.8 & 0.8	1.0 & 1.0	7E	12-10 ,9-7



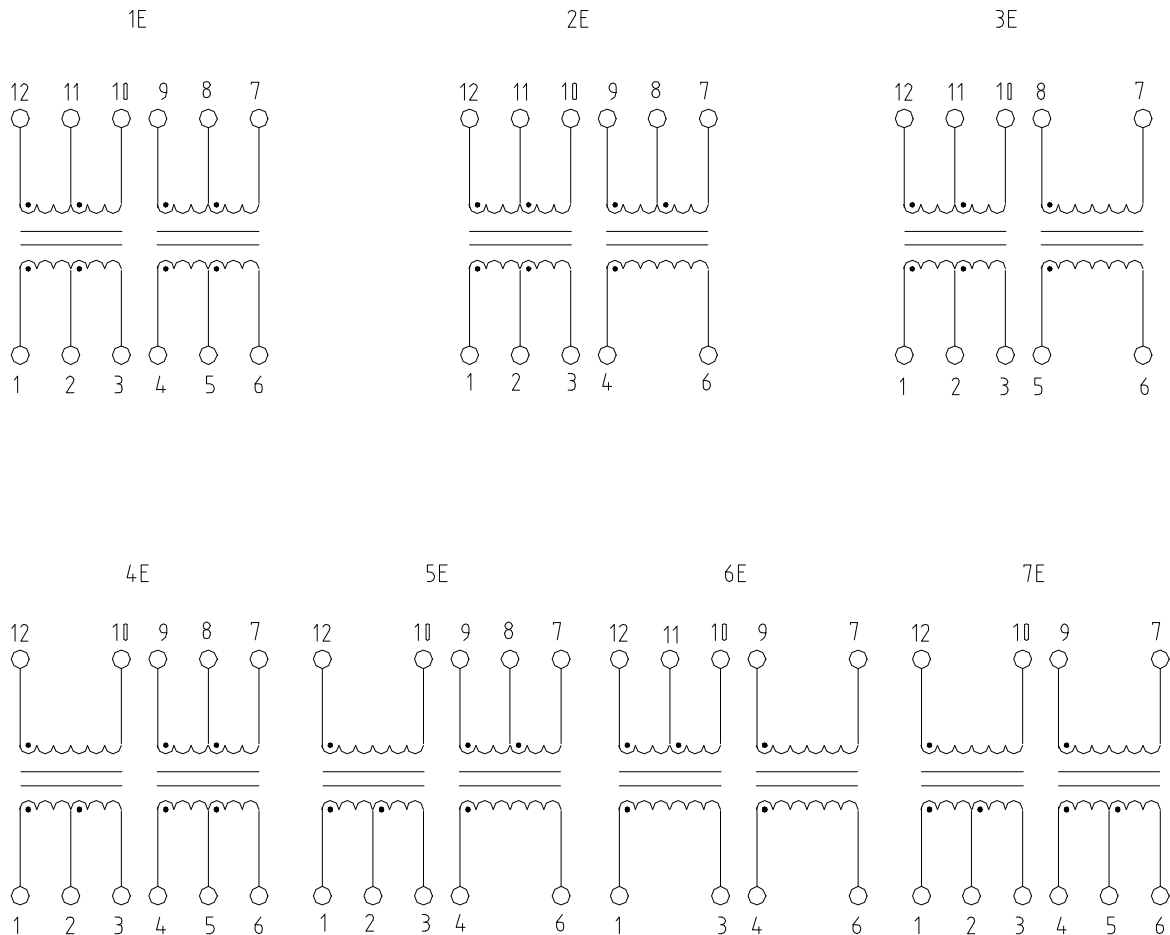
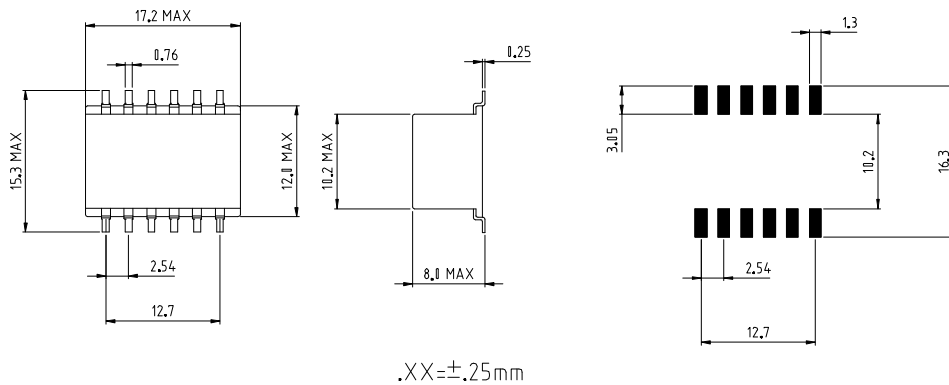


**TELECOMMUNICATIONS:**

# T1/CEPT Telecom Line Interface Transformers

Dual Surface Mount – “Small Package”

## Dimensions:



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**UMEC Europe**  
**Universal Microelectronics**

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***T<sub>1</sub>/CEPT Telecom Line Interface Transformers***  
***Single Through Hole***

- EXTENDED AND STANDARD TEMPERATURE RANGE MODELS.
- DESIGNED TO MEET CCITT & FCC REQUIREMENTS
- ET-CONSTANT: ALL COILS HAVE AN ET-CONSTANT OF 10 V-usec minimum
- PROVIDE 1500Vrms ISOLATION

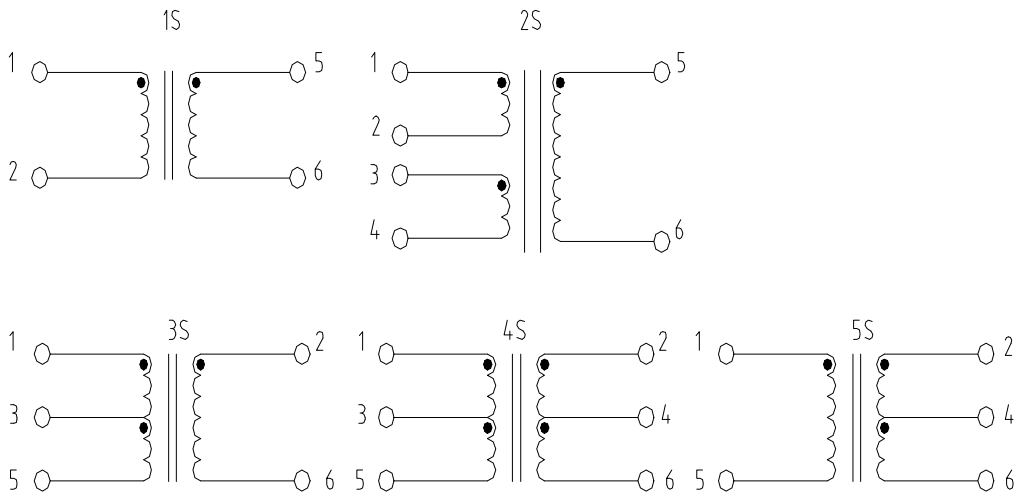
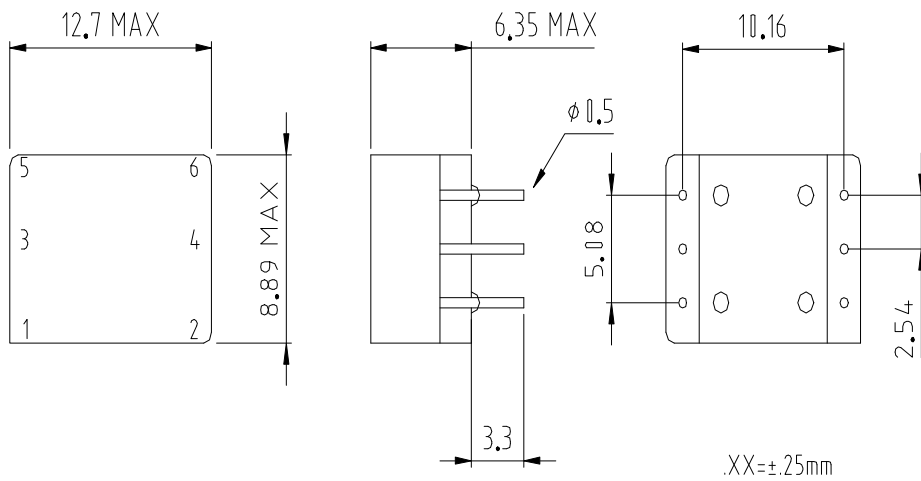
**ELECTRICAL SPECIFICATIONS at 25°C**

Part No.	Turns Ratio (pri:sec ±5%)	OCL <sup>(3)</sup> (mH Min)	Cw/w <sup>(3)</sup> (pF Max)	L <sub>L</sub> <sup>(3)</sup> (uH Max)	DCR pri (Ohms Max)	DCR sec (Ohms Max)	Schem.	Primary pins
<b>Standard Temperature Range Models</b>								
UT23931	1:1:1(2CT)	1.2	25	0.5	0.7	0.7 & 0.7	2S	1-2
UT23932	1:1:1	2	40	0.5	0.7	0.7	2S	1-2
UT23933	1CT:3CT	1.2	30	0.5	0.7	1.6	4S	1-5
UT23934	1:1	1.2	25	0.5	0.7	0.7	1S	1-2
UT23935	1:1CT	0.06	23	0.75	0.6	0.6	3S	2-6
UT23936	1CT:1	1.2	25	0.8	0.7	0.7	3S	1-5
UT23937	1:1.36	1.2	35	0.8	0.7	0.8	1S	5-6
UT23938	1:1.26CT	0.06	23	0.75	0.6	0.6	3S	2-6
UT23940	1:1:1.58	0.3	30	0.6	0.4 & 0.4	0.6	2S	1-4(2,3 sh.)
UT23941 <sup>(5)</sup>	1:1:2	0.8	30	0.6	0.4 & 0.4	0.6	2S	1-4(2,3 sh.)
UT23942	1:1:2.62	0.8	30	0.4	0.4 & 0.4	0.6	2S	1-4(2,3 sh.)
UT23943	1CT:2CT	1.2	30	0.55 <sup>(2)</sup>	0.7	1.2	4S	1-5
UT23945	2.53CT:1	2	20	1.5	1	0.5	3S	1-5
UT23351	1:2CT	1.2	40	0.5	0.7	1.2	3S	2-6
UT23352	1:2CT	2	40	0.5	0.7	1.4	3S	2-6
UT23363	1:4CT	0.5	40	1	0.5	1.5	5S	1-5
UT23379	1:1.14CT	1.2	35	0.8	0.7	0.8	5S	1-5
UT23388	1:1.15CT	1.5	35	0.6	0.7	0.9	3S	2-6
UT23389 <sup>(6)</sup>	1:1/1.266	1.5	35	0.4	0.7	0.9	3S	2-6
UT23403	1:1.266CT	1.5	18	0.8	0.8	0.92	3S	2-6
UT23415	1CT:2CT	1.2	30	0.55	0.7	1.2	4S	1-5
UT23558	1:2.3CT	1.2	35	0.8	0.7	1.2	5S	1-5
UT23586	1:1.36CT	1.2	35	0.8	0.7	0.9	5S	1-5
UT23755	1CT:1CT	1.2	25	0.8	0.8	0.8	4S	1-5
<b>Extended Temperature Range Models<sup>(1)</sup></b>								
UT23340	1:1.36	1.2	35	0.8	0.9	1.2	1S	5-6
UT23770	1:1.15CT	1.5	40	0.8	0.9	1	3S	2-6
UT23771	1CT:2CT	1.2	45	0.6	1	2	4S	2-6
UT23778	1CT:1CT	1.2	50	1.1	1	1	4S	1-5





# ***T<sub>1</sub>/CEPT Telecom Line interface transformers single through hole***



***T<sub>1</sub>/CEPT Telecom Line Interface Transformers***  
***Dual Through Hole***

- EXTENDED AND STANDARD TEMPERATURE RANGE MODELS
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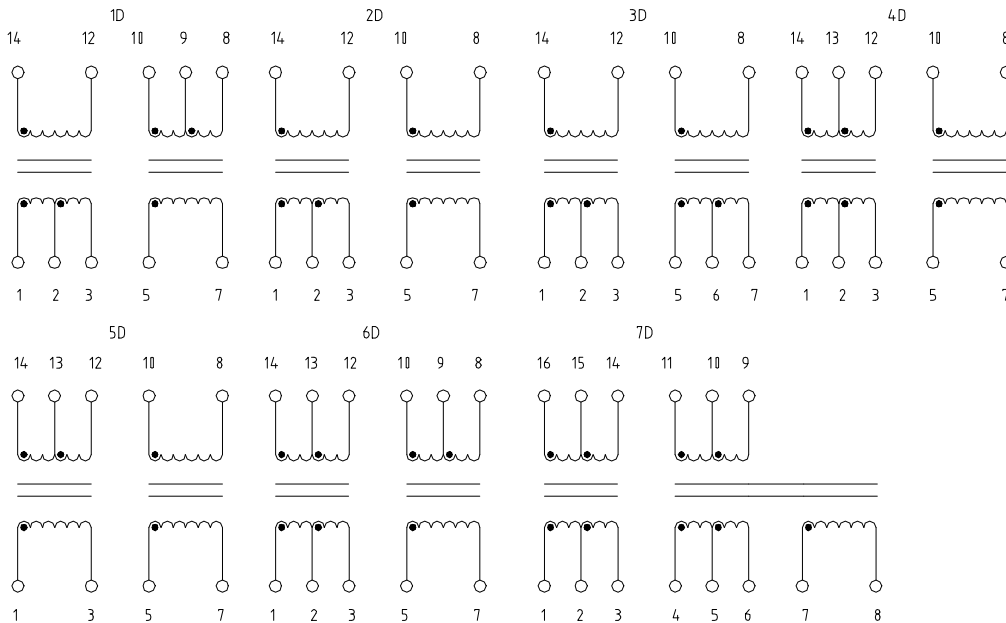
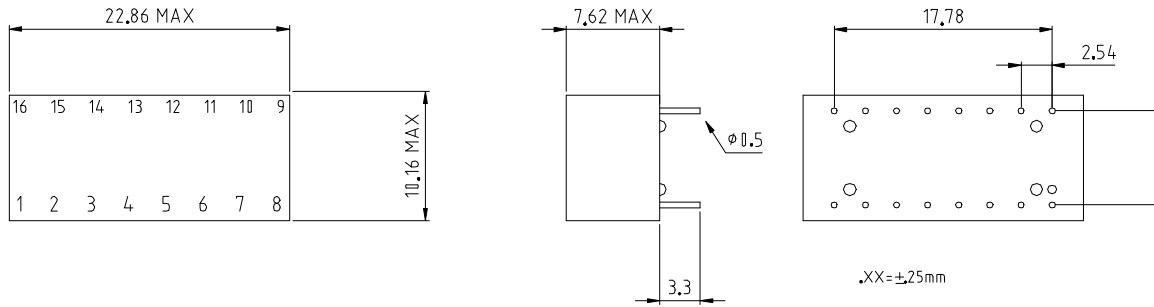
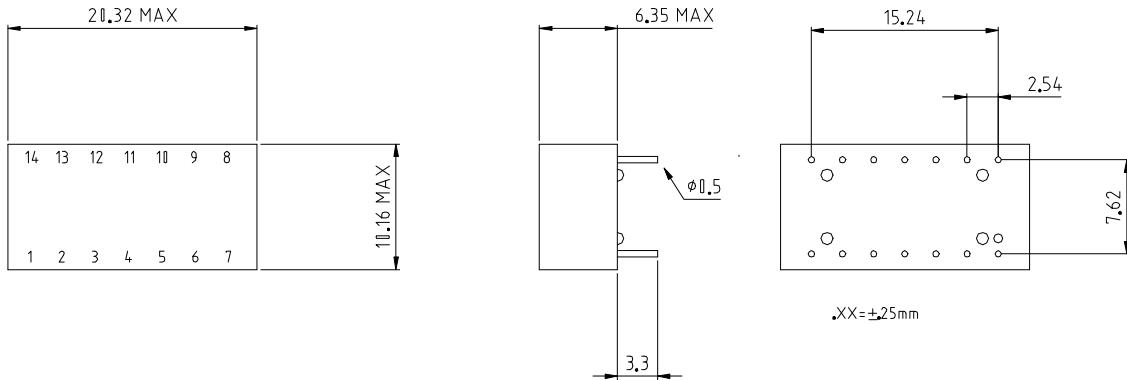
**ELECTRICAL SPECIFICATIONS at 25°C:**

Part No.	Turns Ratio (pri:sec ±5%)	OCL <sup>(3)</sup> (mH Min)	Cw/w <sup>(3)</sup> (pF Max)	LL <sup>(3)</sup> (uH Max)	DCR pri (Ohms Max)	DCR sec (OhmsMax)	Schem	Primary Pins
<b>Standard Temperature Range Models</b>								
UT23951	1:2CT & 1:2CT	1.2 & 1.2	35 & 35	0.5 & 0.5	0.7 & 0.7	1.2 & 1.2	1D	14-12 ,5-7
UT23952	1:2CT & 1:1.36	1.2 & 1.2	35 & 35	0.5 & 0.8	0.8 & 0.8	1.2 & 1.0	2D	14-12 ,5-7
UT23953	1:2CT & 1:2CT	2.0 & 2.0	50 & 50	0.6 & 0.6	0.7 & 0.7	1.2 & 1.2	3D	14-12,10-8
UT23954	1CT:2CT & 1:1	1.2 & 1.2	30 & 30	0.55 <sup>(2)</sup> & 0.5	0.7 & 0.7	1.2 & 0.7	4D	1-3 ,5-7
UT23955	1:1.26CT & 1.58:1	0.8 & 0.8	30 & 30	0.5 & 0.5	0.6 & 0.6	0.7 & 0.3	5D	1-3 ,5-7
UT23956 <sup>(5)</sup>	1:1CT & 2:1	0.8 & 0.8	30 & 30	0.6 & 0.6	0.5 & 0.5	0.5 & 0.2	5D	1-3 ,5-7
UT23957	1:1.31CT & 2.62:1	1.2 & 1.2	30 & 30	0.8 & 0.8	0.6 & 0.6	0.5 & 0.3	5D	1-3 ,5-7
UT23958	1:1 & 1CT:1	1.2 & 1.2	30 & 30	0.6 & 0.8	0.7 & 0.7	0.7 & 0.7	5D	5-7 ,14-12
UT23959	1:1CT & 2.53CT;1	0.06 & 2.0	23 & 25	0.75 & 1.5	0.6 & 1.0	0.6 & 0.7	3D	10-8 ,1-3
UT23960	1:1CT & 2CT:1	0.06 & 1.2	25 & 30	0.75 & 0.8	0.6 & 0.7	0.6 & 0.7	3D	10-8 ,1-3
UT23565	1:1.15CT & 1:2CT	1.5 & 1.2	35 & 40	0.6 & 0.5	0.7 & 0.7	1.1 & 1.3	1D	14-12 ,5-7
UT23566 <sup>(6)</sup>	1:1/1.266 & 1:2CT	1.5 & 1.2	40 & 40	0.5 & 0.4	0.7 & 0.7	0.9 & 1.3	1D	14-12 ,5-7
<b>Extended Temperature Range Models<sup>(1)</sup></b>								
UT23567	1:1.15CT & 1:2CT	1.5 & 1.2	40 & 60	0.8 & 0.8	0.9 & 0.9	1.0 & 1.7	1D	14-12,5-7
UT23568 <sup>(6)</sup>	1:1/1.266 & 1:2CT	1.5 & 1.2	50 & 60	0.8 & 0.8	0.9 & 0.9	1.0 & 1.7	1D	14-12,5-7
UT23774	1CT:2CT & 1:1.36CT	1.2 & 1.2	50 & 50	0.96 & 0.8	1.0 & 1.0	1.7 & 1.2	6D	14-12,5-7
UT23618 <sup>(7)</sup>	1CT:1CT&3CT:1CT:0.25	1.2 & 32.0 <sup>(7)</sup>	40 & 65	0.8 & 0.8	1.0 & 3.0	1.0 & 1.2	7D	1-3 ,11-9
UT23950	1CT:1CT & 1CT:3CT:1	1.2 & 0.6	40 & 40	0.8 & 0.8	1.0 & 0.8	1.0 & 2.0	7D	1-3 ,4-6





# T<sub>1</sub>/CEPT TELECOM LINE INTERFACE TRANSFORMERS DUAL THROUGH HOLE







## **T<sub>1</sub>/CEPT TELECOM LINE INTERFACE TRANSFORMERS**

### **NOTES:**

- 1.Extended Temperature Range Models: For extended temperature range transformers ( -40°Cto +85°Coperating temperature range ), OCL(Open Circuit Inductance for the primary winding ) is specified at both -40°Cand +25°C At -40°C OCL is 600 uH minimum for all low temperature models with the exception of UT23827 which is 800 uH minimum. All other parameters are specified at +25°C only. Standard Temperature Range is 0°C to +70°C.
- 2.Tolerance leakage inductance 0.3uH min. to 0.55uH max.
- 3.OCL (primary inductance), Cw/w ( coupling capacitance ), and LL (leakage inductance) are measured at the primary winding.
- 4.To make a 1CT:1 ratio from a 1CT:2CT ratio , use only one-half of the secondary (2CT) winding.
- 5.It is possible to use the same transformer model for the three impedance levels of T1 ( 100ohms) and CEPT ( 75 and 120 ohms ). The values of the resistors at the transmit end are then calculated according to Siemens Application Note 12.90 Just a Single Line Transformer Type for All IPAT (PEB-2235) Applications.
- 6.These transformers provide two ratios (for transmit) that make them suitable for use in either 75 ohm (1:1) or 120 ohm (1:1.266) applications. Listed below are the line side transmit pin numbers which will provide the appropriate turns ratio.

	75ohm	120ohm
Part No.	1 : 1	1 : 1.266
UT23389	3-5	1-5
UT23566	2-3	1-3
UT23568	2-3	1-3
UT23766	2-3	1-3
UT23826	2-3	1-3
UT23817	2-3	1-3
UT23866	2-3	1-3
UT23736	2-3/5-6	1-3/4-6

- 7.UT23618 AND UT23950 the fault locate winding is (7-8).

