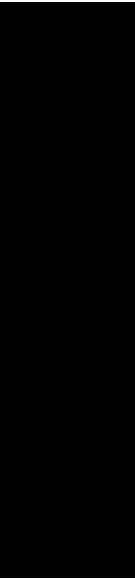


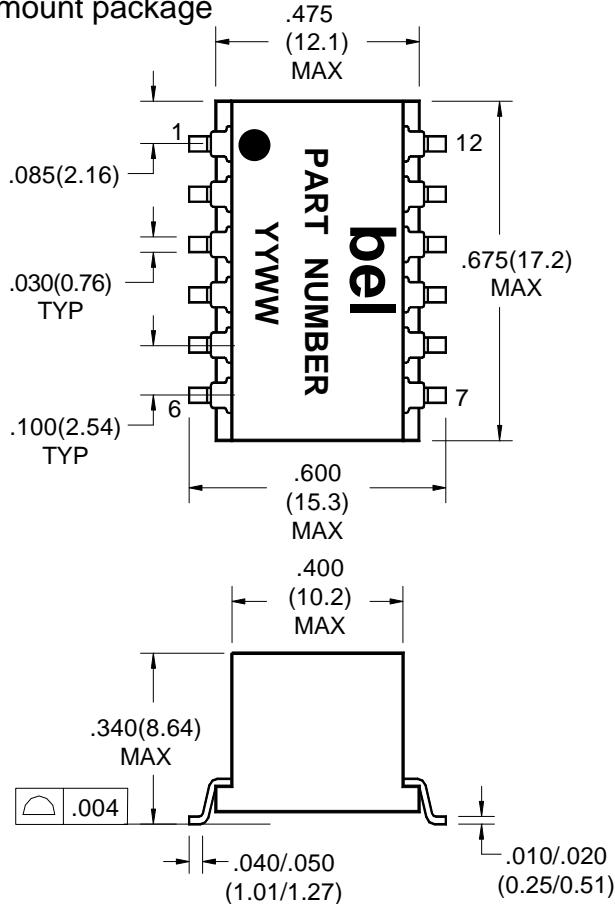
# TRANSFORMERS



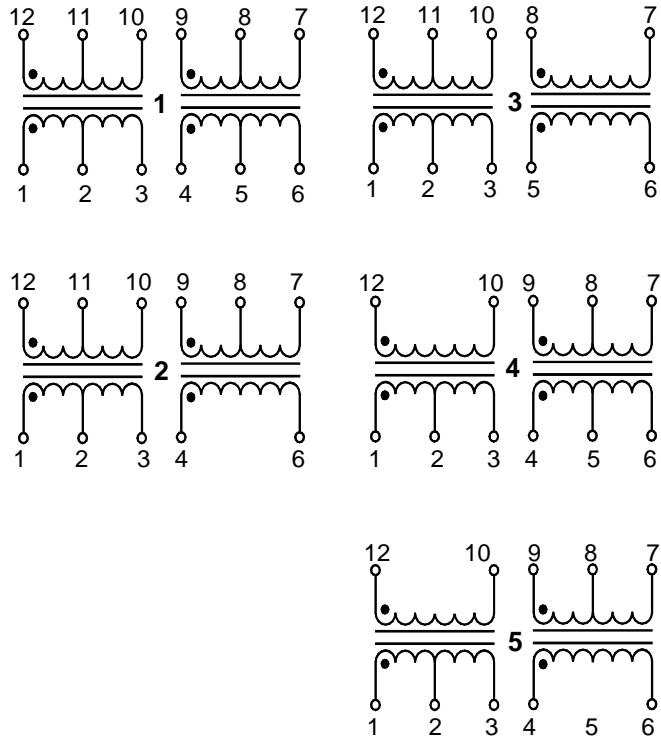
# T1/CEPT/ISDN-PRI TRANSFORMERS DUAL SURFACE MOUNT

TM0001

Bel introduces a new ISDN T1/CEPT/ISDN-PRI Transformer in a surface mount package



Dual surface mount package contains both transmit and receive transformers.  
Models matched to leading transceiver chips.  
Provide 1500 Vrms Isolation.



## ELECTRICALS SPECIFICATIONS @ 25° C

### Standard Temp. Range Models

Part Number	Turns Ratio (pri:sec +/-5%)	OCL 25° C (mH min)	Cw/w (pf max)	L <sub>L</sub> (uH max)	DRC PRI (ohms max)	DRC SEC (ohms max)	Sch	Primary Pins
S553-6500-10	1ct:2ct & 1ct:2ct	1.2 & 1.2	31 & 31	0.60 & 0.6	0.7 & 0.7	1.2 & 1.2	1	12-10,4-6
S553-6500-11	1ct:2ct & 1:1.36ct	1.2 & 1.2	32 & 37	0.55 & 0.8	0.7 & 0.7	1.2 & 0.9	2	12-10,4-6
S553-6500-12	1:2ct & 1:1.14ct	1.2 & 1.2	40 & 35	0.55 & 0.8	0.7 & 0.7	1.2 & 0.9	5	12-10,4-6
S553-6500-13	1ct:2ct & 1:1	1.2 & 1.2	30 & 30	0.55 & 0.8	0.7 & 0.7	1.2 & 0.7	3	1-3,5-6
S553-6500-14	1:1.15ct & 1ct:2ct	1.5 & 1.2	35 & 35	0.60 & 0.6	0.7 & 0.7	0.9 & 1.2	4	12-10,4-6
S553-6500-15	1:1:1.26 & 1:2ct	1.5 & 1.2	40 & 40	0.40 & 0.5	0.7 & 0.7	0.9 & 1.2	5	12-10,4-6
S553-6500-16	1ct:2ct & 1:1.08ct	1.2 & 1.2	40 & 30	0.60 & 0.6	0.7 & 0.7	1.2 & 0.7	2	12-10,4-6

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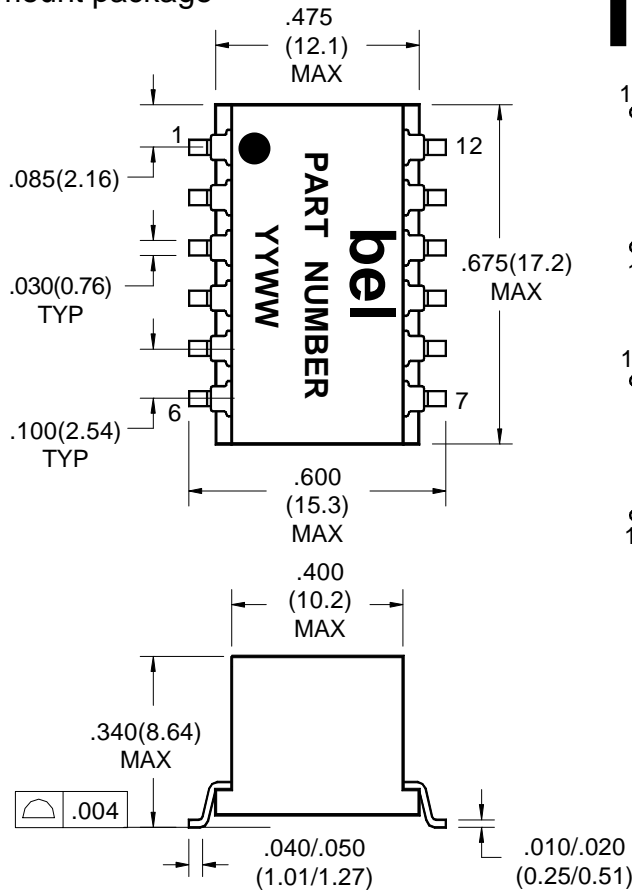
#### European Office

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Lancashire, U.K.  
Tel: 44-1772-556601  
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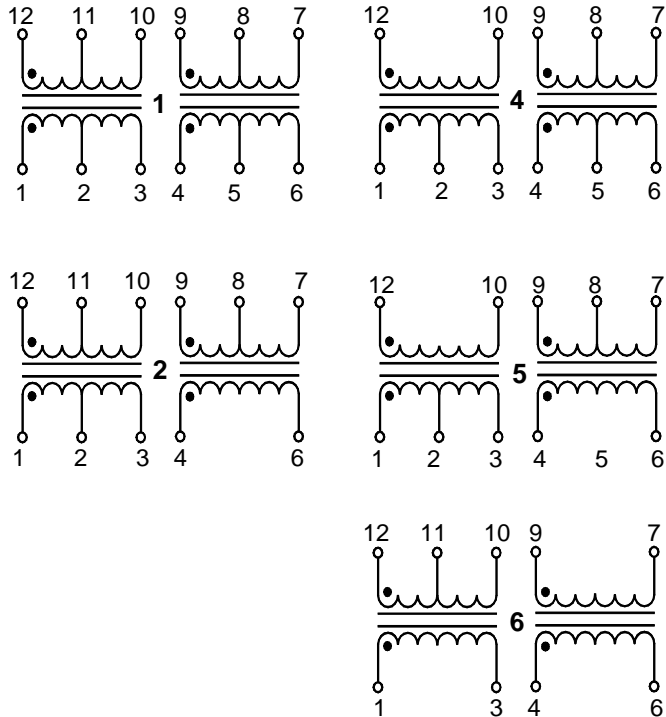
## T1/CEPT/ISDN-PRI TRANSFORMERS DUAL SURFACE MOUNT

TM0002

Bel introduces a new ISDN T1/CEPT/ISDN-PRI Transformer in a surface mount package



Dual surface mount package contains both transmit and receive transformers.  
Models matched to leading transceiver chips.  
Provide 1500 Vrms Isolation.



### ELECTRICALS SPECIFICATIONS @ 25°C

\* Extended Temp. Range Models

Part Number	Turns Ratio (pri:sec +/-5%)	OCL 25° C (mH min)	Cw/w (pf max)	L <sub>L</sub> (uH max)	DRC PRI (ohms max)	DRC SEC (ohms max)	Sch	Primary Pins
S553-6500-03	1ct:1ct & 1ct:1ct	1.2 & 1.2	50 & 50	0.8 & 0.8	1.0 & 1.0	1.0 & 1.0	1	12-10,4-6
S553-6500-05	1ct:2ct & 1ct:2ct	1.2 & 1.2	50 & 50	0.8 & 0.8	1.0 & 1.0	1.7 & 1.7	1	12-10,4-6
S553-6500-06	1ct:2ct & 1:1.36ct	1.6 & 1.6	60 & 50	1.0 & 0.8	1.5 & 1.5	2.0 & 1.7	2	12-10,4-6
S553-6500-07	1:1.15ct & 1ct:2ct	1.5 & 1.2	60 & 50	0.8 & 0.8	1.0 & 1.0	1.0 & 1.7	4	12-10,4-6
S553-6500-08	1:1:1.266 & 1:2ct	1.5 & 1.2	50 & 60	0.8 & 0.8	1.0 & 1.0	1.1 & 1.7	5	12-10,4-6
S553-6500-09	2:2ct & 2:1	1.6 & 1.6	50 & 40	1.3 & 1.3	1.1 & 1.1	1.1 & 0.7	6	1-3,4-6

At -40 degree C, OCL is 600 uH min. for all low temp. models with the exception of S553-6500-09 which is 800 uH min.. All other parameters are specified at +25 degree C only.

\*Extended temp. range is -40°C to +85°C

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#### European Office

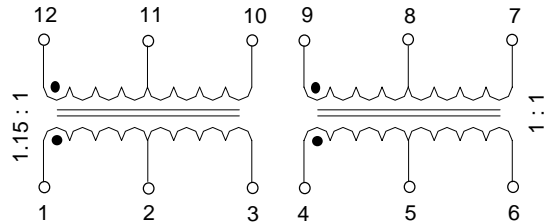
**Bel Fuse Europe Ltd.**  
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# T1/CEPT/ISDN-PR1 TRANSFORMER S559-6400-00

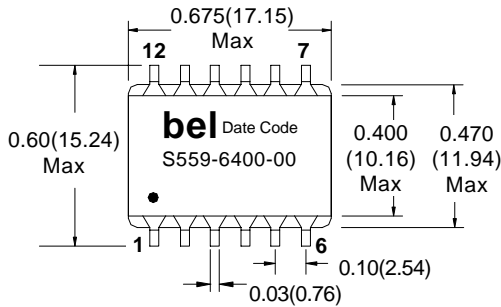
Bel offers a dual, T1, surface mount transformer packaged to provide both transmit and receive transformers. This design is easily customized for other leading transceiver chips by adjusting the turns ratio.

- \* Dielectric Strength 1500 VAC.
- \* Temperature Range is -40°C to 85°C.

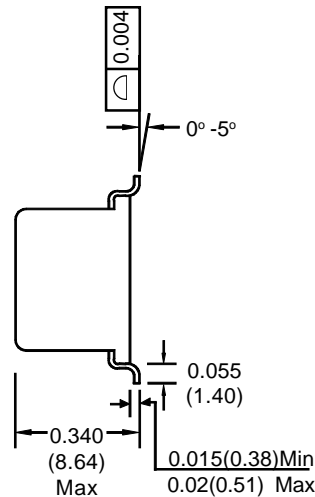
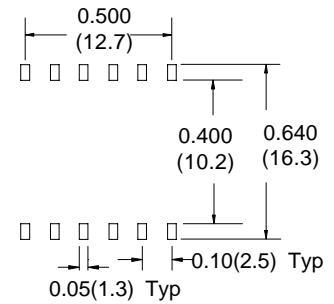
## SCHEMATIC



## MECHANICALS



## SUGGESTED PAD LAYOUT



## ELECTRICALS @ 25° C

Part Number	Turns Ratio +/- 5%	
	Pins (10-12):(1-3)	Pins (4-6):(7-9)
S559-6400-00	1CT:1.15CT	1CT:1CT

All dimensions are in inches(mm).  
Dimension Tolerance is +/-0.01(0.25) unless otherwise specified.

Part Number	Primary Inductance OCL (mH) Min	Leakage Inductance L <sub>L</sub> (μH) Max	Interwinding Capacitance (pF) Max	DCR (ohms) Max				Dielectric Strength (VAC)
	Pins (4-6) and Pins (10-12)	Pins (4-6) and Pins (10-12)	Pins (1,2,3) to Pins (10,11,12) and Pins (4,5,6) to Pins (7,8,9)	Pins (1-3)	Pins (4-6)	Pins (7-9)	Pins (10-12)	
S559-6400-00	1.5	0.8	60	1.1	1.0	1.0	1.0	1500

Dielectric Strength is measured Pins (1,2,3) to Pins (10,11,12) and Pins (4,5,6) to Pins (7,8,9).  
Primary Inductance, Leakage Inductance, and Interwinding Capacitance are measured at 100KHz, 0.02VAC.

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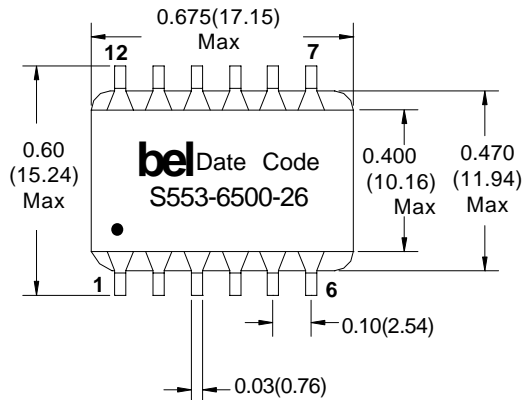
## T1/CEPT/ISDN-PR1 TRANSFORMER S553-6500-26

TM0004

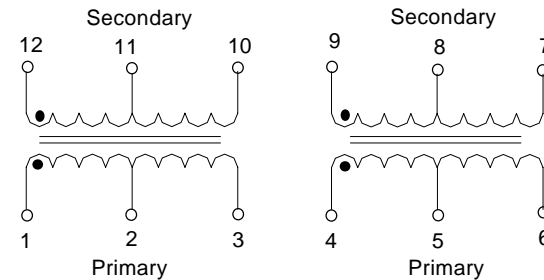
Bel offers a dual, T1, surface mount transformer packaged to provide both transmit and receive transformers. This design is easily customized for other leading transceiver chips by adjusting the turns ratio.

- \* Dielectric Strength 1500 VAC.
- \* Extended Temperature Range is -40°C to 85°C.

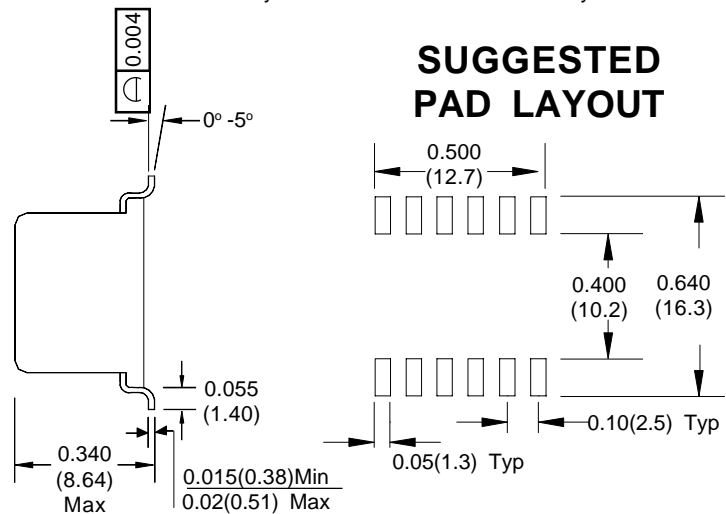
### MECHANICALS



### SCHEMATIC



### SUGGESTED PAD LAYOUT



### ELECTRICALS @ 25° C

Part Number	Turns Ratio +/- 2%	
	Pins (10-12):(1-3)	Pins (4-6):(7-9)
S553-6500-26	1CT:1.CT	1CT:2CT

All dimensions are in inches(mm).  
Dimension Tolerance is +/-0.01(0.25)  
unless otherwise specified.

Part Number	Primary Inductance OCL(mH) Min	Leakage Inductance L <sub>r</sub> (μH) Max	Interwinding Capacitance (pF) Max	DCR (ohms) Max				Dielectric Strength (VAC)
	Pins (1-3) and Pins (4-6)	Pins (1-2) and Pins (4-6)	Pins (1,2,3) to Pins (10,11,12) and Pins (4,5,6) to Pins (7,8,9)	Pins (1-3)	Pins (4-6)	Pins (7-9)	Pins (10-12)	
S553-6500-26	1.2	0.8	50	1.0	1.0	1.8	1.0	1500

Dielectric Strength is measured Pins (1,2,3) to Pins (10,11,12) and Pins (4,5,6) to Pins (7,8,9).

Primary Inductance, Leakage Inductance, and Interwinding Capacitance are measured at 100KHz, 0.02VAC.

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Fax: 852-2352-3706

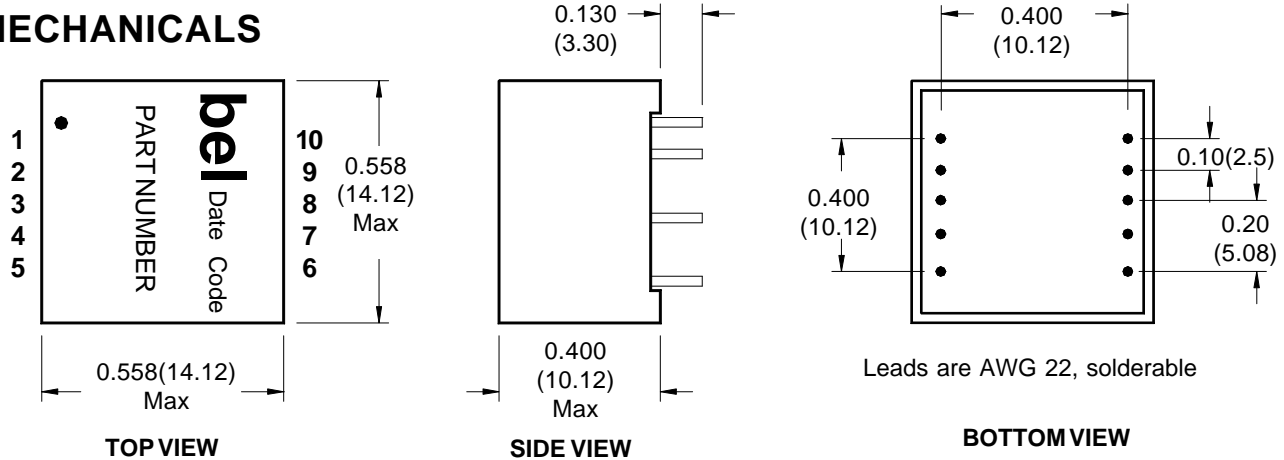
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# T1/CEPT/ISDN-PRI TRANSFORMERS ENHANCED 3000VRMS ISOLATION

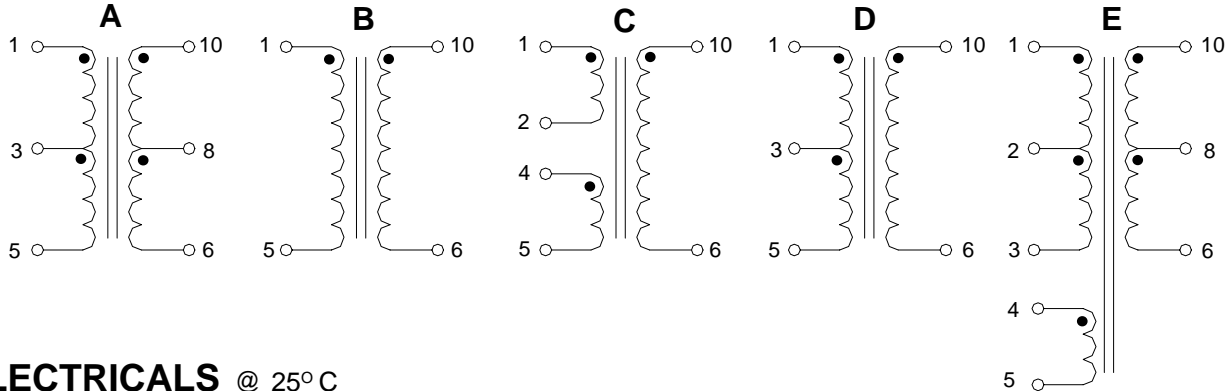
TM0005

## MECHANICALS



## SCHEMATICS

All dimensions are in inches(mm) +/- 0.01(0.25) unless otherwise specified.



## ELECTRICALS @ 25°C

Part Number	Turns Ratio +/- 2%	Primary Pins	OCL Primary (mH) Min	C <sub>ww</sub> (pF) Max	L <sub>L</sub> (μH) Max	DCR Pri (ohms) Max	DCR Sec (ohms) Max	Schem.
0553-6500-19	1:1	1-5	1.20	30	0.50	0.70	0.70	B
0553-6500-20	1CT:2CT	1-5	1.20	30	0.30-0.50	0.70	1.10	A
0553-6500-21	1:1.36CT	10-6	1.20	35	0.60	0.70	0.90	D
0553-6500-22	1:1:2	1-5(2,4 sh)	0.80	25	0.50	0.70	0.70	C
0553-6500-23	1:1:1.58	1-5 (2,4 sh)	0.80	18	0.70	0.70	0.50	C
Extended Temperature Units, -40°C to 85°C								
0553-6500-17	1:1:1.26	10-6	1.50	35	0.60	0.70	1.10	D
0553-6500-18	1CT:2CT	1-5	1.20	30	0.55	0.70	1.10	A
0553-6500-24	1CT:3CT:1	1-3	0.60	30	0.80	0.70	1.70	E

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## T1 CARRIER INTERFACE TRANSFORMERS T1/CEPT Telecom Line Interface Applications

**TM0006**

Bel provides transformer magnetics in several package and schematic variations for T1/CEPT Telecom Line Interface Applications. Bel's high quality semi-automated processes provide superior single small form, and standard dual transformers.

- \* 2000 Vrms Isolation.
- \* Primary Inductance is 1.20mH minimum.
- \* Primary DCR is 0.80 ohms maximum.
- \* Custom designs available upon request.

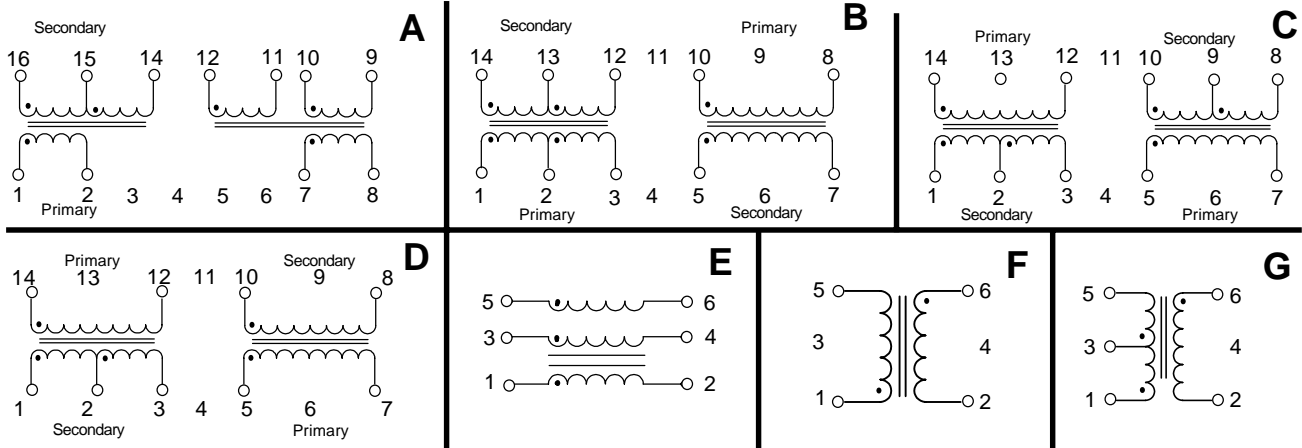
### ELECTRICALS @ 25° C

Part Number	Turns Ratio (+/- 5%)	Leakage Inductance $L_{\text{L}}$ (uH) Max	Coupling Capacitance $C_{\text{ww}}$ (pF) Max	Sec DCR (ohms) Max	#Pins on Package and Style	Schem.
A553-0013-00	1:1.385CT/1:1:1	0.80/0.50	35	0.80	16 Topper	A
A553-0013-01	1CT:2CT/1:1	0.80/0.50	35	1.8/0.80	14 Topper	B
A553-0013-03	1:1.385CT/1:1CT	0.80/0.50	35	0.80/0.80	14 Topper	C
A553-0013-05	Pins (1-2):(14:12) 1:1 (1-3):(14:12) 1.25:1 (5-7):(10:8) 1:2CT	0.50/0.50/0.80	50	0.80/0.80/1.8	14 Topper	C
A553-0013-06	1:2CT/1:2CT	0.80/0.80	35	1.8/1.8	14 Topper	C
A553-0013-07	1:1.15CT/1:2CT	0.50/0.80	35	0.80/1.8	14 Topper	C
A553-0013-08	1:1:1.266/1:2CT	0.80/0.80	35	0.80/1.8	14 Topper	C
0553-0013-IC	1:1:1	0.50	35	0.80	6 "T" Topper	E
0553-0013-AC	1:1	0.50	35	0.80	6 "T" Topper	F
0553-0013-BC	1CT:1	0.50	35	0.80	6 "T" Topper	G
0553-0013-HC	1CT:2CT	0.80	35	1.8	6 "T" Topper	K
0553-0013-1J	1:2CT/1:2CT	0.80/0.80	35	1.8/1.8	14 DIL	C
0553-0013-2J	1:2CT/1:1.36	0.80/0.80	35	1.8/0.80	14 DIL	D
0553-0013-4J	1CT:2CT/1:1	0.80/0.50	35	1.8/0.8	14 DIL	B
0553-0013-RC	1:1.15CT	0.50	35	0.80	6 "T" Topper	G
0553-0013-SC	1:1:1.266	0.80	35	0.80	6 "T" Topper	E
0553-1167-00	1:1:1.266/1:2CT	0.50/0.60	35/40	0.80/1.8	14 DIL	C

Schematic and Mechanical information for the above components are located on the facing page.

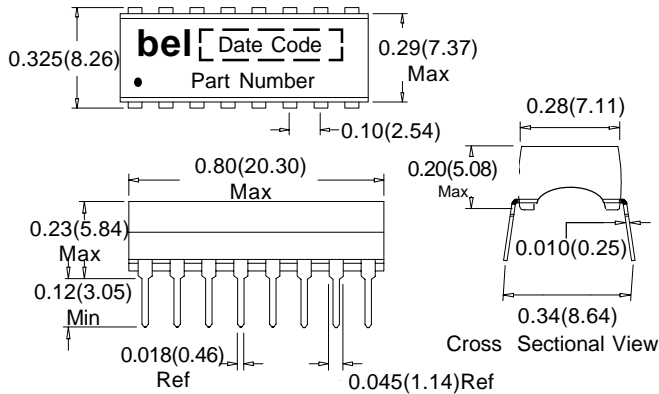
# T1 CARRIER INTERFACE TRANSFORMERS

## SCHEMATICS



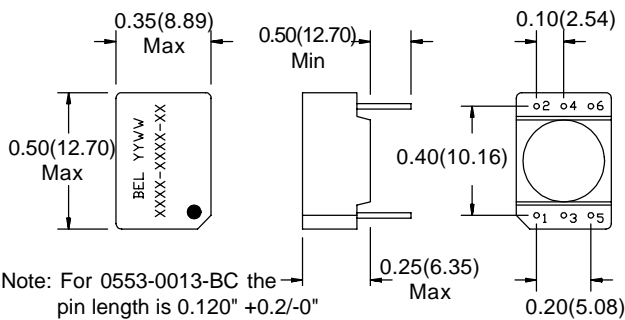
## MECHANICALS

### Package Style (14/16 Pins)



Note: For 14 Pin package, external package dimensions and pin distances are identical. There are only seven pins per side.

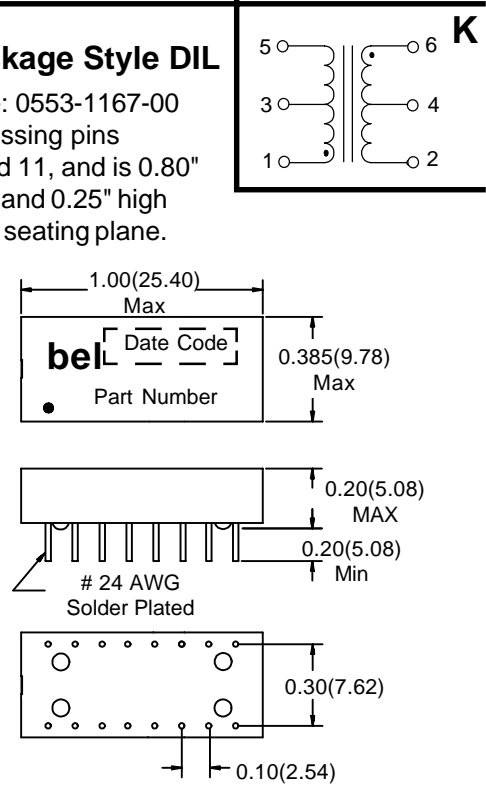
### Package Style "T"



Note: For 0553-0013-BC the pin length is 0.120" +0.2/-0"

### Package Style DIL

Note: 0553-1167-00 is missing pins 4 and 11, and is 0.80" long and 0.25" high from seating plane.



Dimensions are in inches(mm). Dimension Tolerance is +/- 0.02(0.51) unless otherwise specified.

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## SURFACE MOUNT T1 CARRIER INTERFACE TRANSFORMERS T1/CEPT Telecom Line Interface Applications

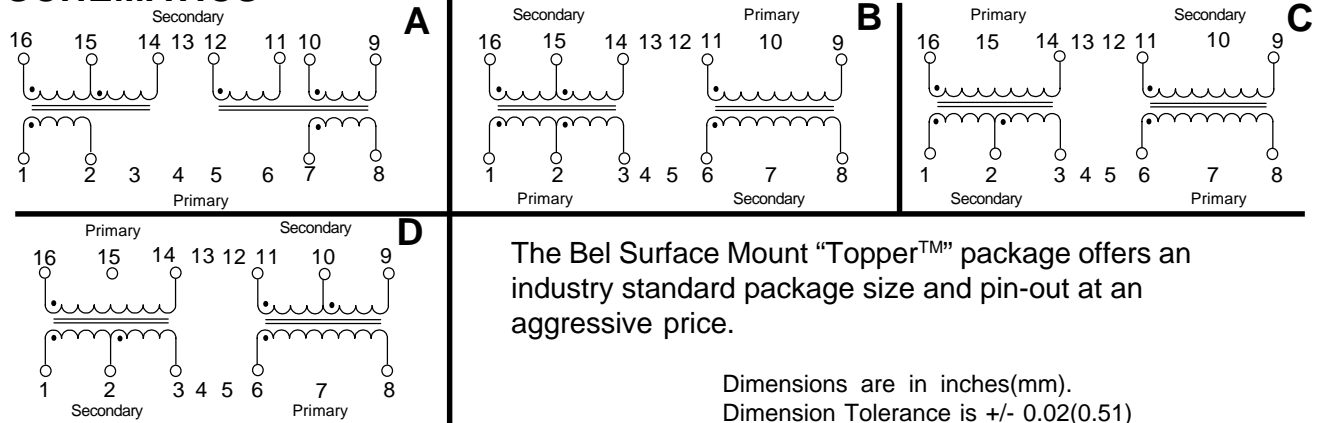
TM0007

Bel offers a new cost effective package on our standard T1/CEPT Telecom Interface Line Transformers. This sixteen lead, surface mount package, provides a superior, cost effective, quality product.

### ELECTRICALS @ 25°C

Part Number	Turns Ratio T1/T2	Leakage Inductance $L_L$ ( $\mu$ H) Max	DCR (ohms) Max	Schematic
S553-0013-00	1:1.385CT/1:1:1	0.80/0.50	0.80	A
S553-0013-01	1CT:2CT/1:1	0.80/0.50	1.80/0.80	B
S553-0013-02	1:2CT/1:1.36	0.80/0.80	1.80/0.80	C
S553-0013-03	1:2CT/1:2CT	0.80/0.80	0.80/1.80	D
S553-0013-06	1:1.15CT/1:2CT	0.50/0.80	0.80/1.80	D
S553-0013-07	1:1:1.266/1:2CT	0.80/0.80	0.80/1.80	D

### SCHEMATICS

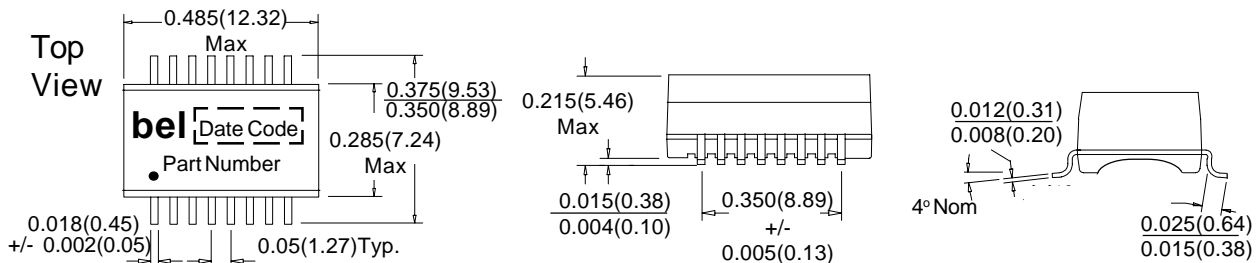


The Bel Surface Mount "Topper™" package offers an industry standard package size and pin-out at an aggressive price.

Dimensions are in inches(mm).  
Dimension Tolerance is +/- 0.02(0.51)  
unless otherwise specified.

### MECHANICALS

Package Style SMT



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**SURFACE MOUNT T1 CARRIER  
INTERFACE TRANSFORMERS**  
T1/CEPT Telecom Line Interface Applications

TM0008

Bel offers a new cost effective package on our standard T1/CEPT Telecom Interface Line Transformers. This sixteen lead, "Topper™", surface mount package, provides a superior, cost effective, quality product.

- \* High Pot 2000 Vrms measured for one minute.
- \* Primary Inductance (OCL) is 1.20 Milihenries minimum.
- \* Primary DCR is 0.80 ohms maximum.

**ELECTRICALS @ 25° C**

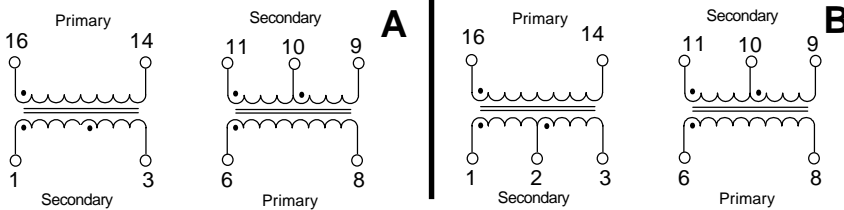
Part Number	Turns Ratio T1/T2	Leakage Inductance L <sub>L</sub> (μH) Max	DCR (ohms) Max	Coupling Capacitance (pF) Max	Schematic
S553-0013-04	1:1.7/1:2CT	0.50/0.80	0.80/1.80	35	A
S553-0013-05	1:1/1:1.25/1:2CT	0.50/0.50/0.80	0.80/1.10/1.80	50	B

\* Coupling Capacitance (C<sub>ww</sub>) is 35 PicoFarads maximum.

\* Custom designs available.

Turns ratio of S553-0013-05 ia (1-2):(16-14)/(1-3):(16-14)/(5-8):(9-11)

**SCHEMATICS**

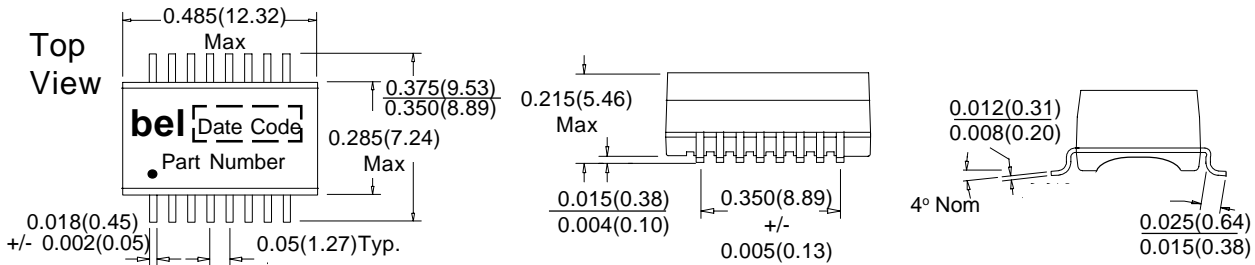


The Bel Surface Mount "Topper™" package offers an industry standard package size and pin-out at an aggressive price.

Dimensions are in inches(mm).  
Dimension Tolerance is +/- 0.02(0.51) unless otherwise specified.

**MECHANICALS**

Package Style SMT



**Corporate Office**  
Bel Fuse Inc.  
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Internet: http://www.belfuse.com

**Far East Office**  
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Preston Technology Management Centre  
Marsh Lane, Preston PR1 8UD  
Lancashire, U.K.  
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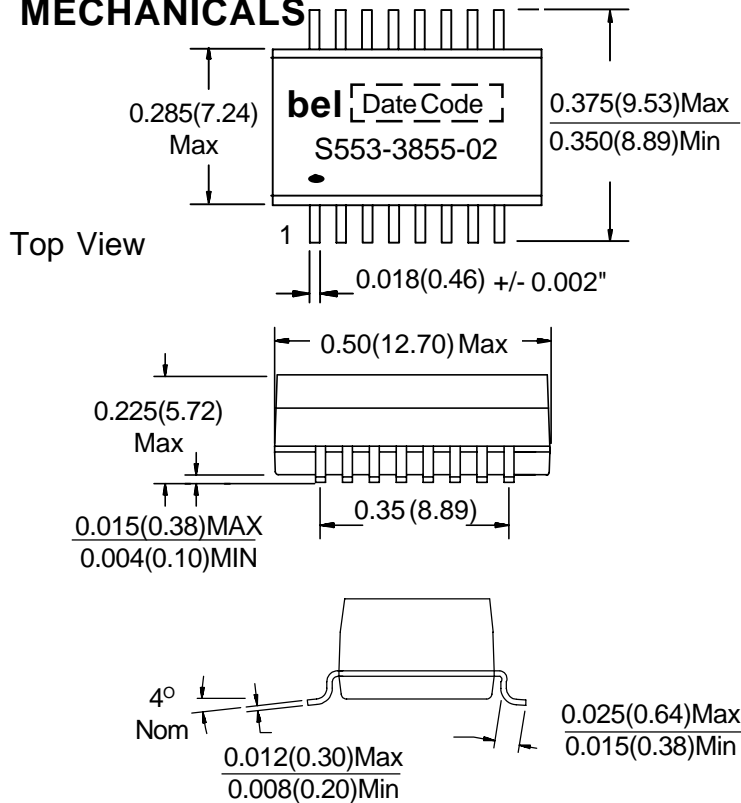
## T1/CEPT/ISDN-PRI TRANSFORMER S553-3855-02

TM0009

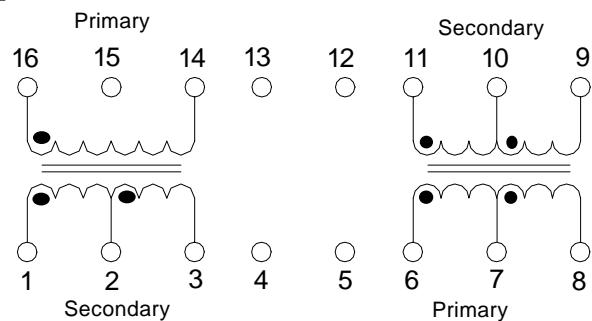
Bel introduces a new "pick and place" compatible, small footprint, surface mount impedance matching transformer for ISDN-PRI/T1/CEPT applications.

- \* Pick and Place Compatible.
- \* Small form factor to maximize board space.

### MECHANICALS



### SCHEMATIC



Dimensions in inches (mm)  
Dimension tolerance +/- 0.01(0.25)  
unless otherwise stated

### ELECTRICALS @ 25° C

Part Number	Turns Ratio		Primary Inductance OCL (mH) Min	Leakage Inductance L <sub>L</sub> (mH) Max		Interwinding Capacitance C <sub>ww</sub> (pF) Max	DC Resistance DCR Pri (ohm) Max	DC Resistance DCR Sec (ohm) Max		Hipot (Vrms) Min
	Pins (16-14):(1-3)	Pins (6-8):(11-9)		Pins (16-14)*	Pins (6-8)**			Pins (1-3)	Pins (11-9)	
S553-3855-02	1:1.15CT	1CT:2CT	1.20	0.6	0.8	30	0.70	0.70	1.00	1500

\* Leakage Inductance is measured with Pins (1-3) shorted.  
\*\* Leakage Inductance is measured with Pins (11-9) shorted.

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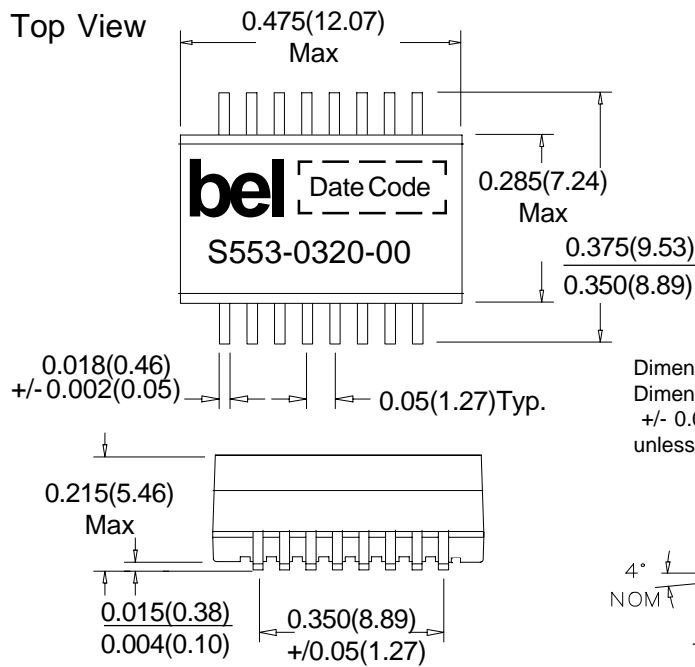
**T1 SURFACE MOUNT TRANSFORMER**  
S553-0320-00

TM0010

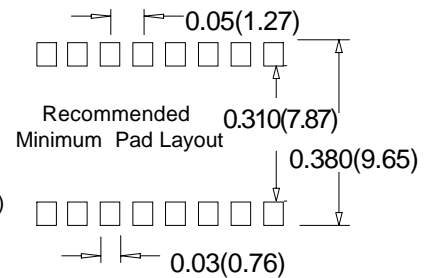
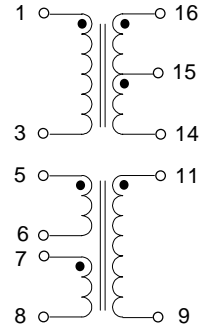
Bel introduces a T1 transformer designed to support the industry's aggressive price requirements, while remaining fit and function compatible to the industry standards. Carefully controlled internal construction provides minimal insertion and return loss.

\* Input to Output Isolation Voltage is 2000 Vrms, measured for 1 second.

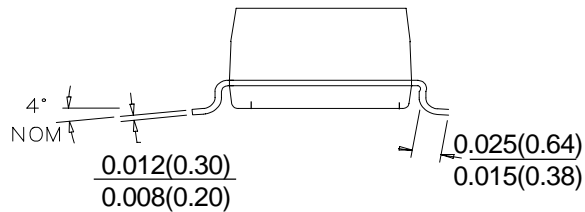
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Dimensions in inches (mm)  
Dimension tolerance  
+/- 0.01(0.25)  
unless otherwise stated



**ELECTRICALS @ 25° C**

Part Number	Turns Ratio (+/- 5%)	Primary Inductance OCL (mH) min	Leakage Inductance L <sub>L</sub> (nH) Max	Leakage Inductance L <sub>L</sub> (nH) Max	Coupling Capacitance C <sub>ww</sub> (pF) Max
		1:2 2:2:1	Pins (1-3) to Pins (5-6)	Pins (1-3) tie Pins (16,15,14)	Pins (5-6) tie Pins (11,9)
S553-0320-00		1.2	500	1000	35

Electricals measured at 100KHz, 20mV.

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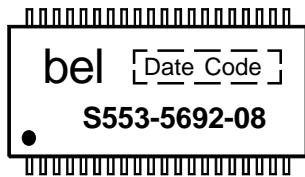
## TRANSFORMER MODULE S553-5692-08

TM0011

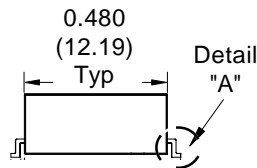
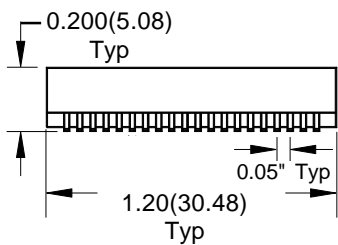
Bel now provides a one component, surface mount transformer module. The compact packaging allows for a "single component" solution which provides cost reduction and placement ease.

\* 1500 Vrms Isolation.

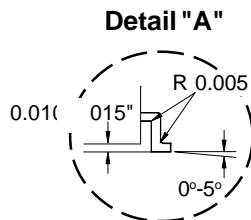
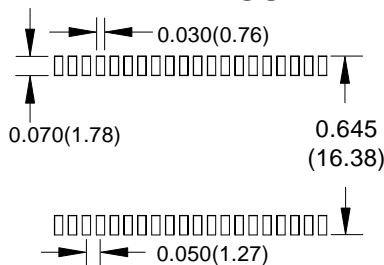
### MECHANICALS



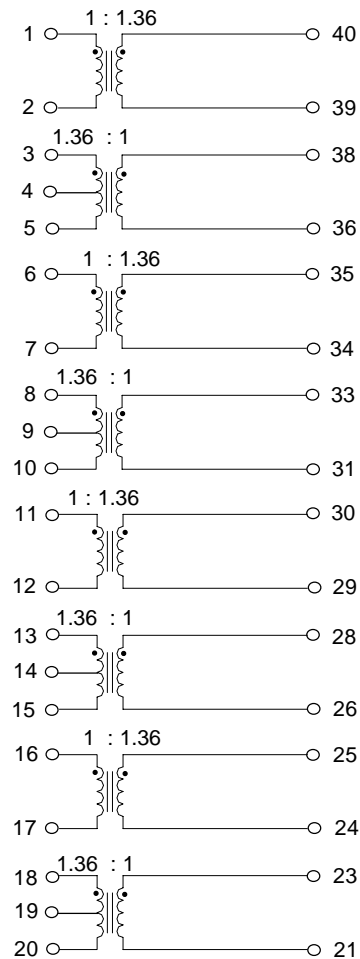
All dimensions are in inches(mm).  
Dimension tolerance is +/- 0.01(0.25) unless otherwise specified.



### RECOMMENDED PCB PAD LAYOUT



### SCHEMATIC



### ELECTRICALS at 25°C

Part Number	Turns Ratio +/- 2%		Primary Inductance OCL (mH) Min	DC Resistance (Ω)		Leakage Inductance L <sub>L</sub> (μH) Max	Interwinding Capacitance C <sub>ww</sub> (pF)	Isolation Voltage (Vrms)
	Primary	Secondary		Primary	Secondary			
S553-5692-08	1: 1.36	1.36 :1	1.25	1.9	2.8	0.8	35	1500

Leakage Inductance measured at 100kHz.

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# TRANSFORMER MODULE

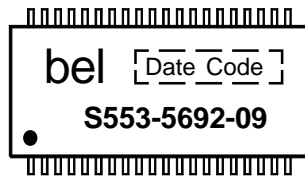
## S553-5692-09

TM0012

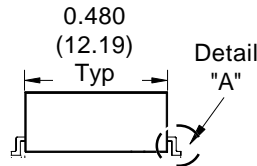
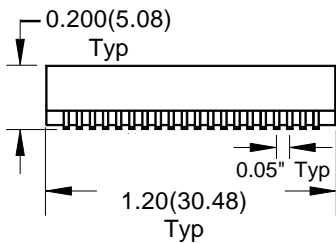
Bel now provides a one component, surface mount transformer module. The compact packaging allows for a "single component" solution which provides cost reduction and placement ease.

\* 1500 Vrms Isolation.

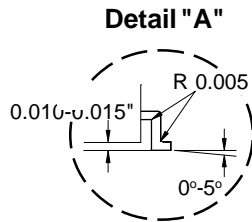
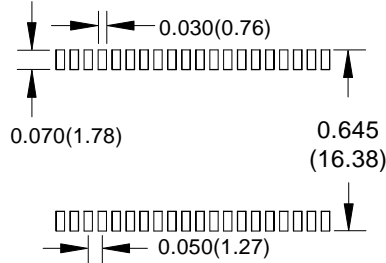
### MECHANICALS



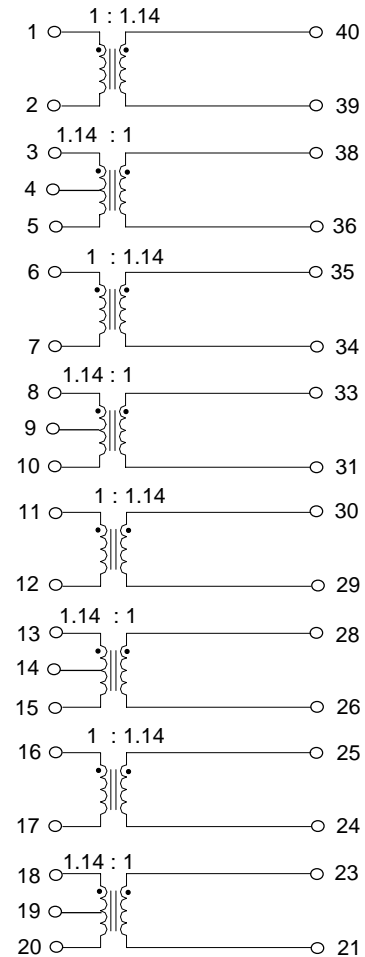
All dimensions are in inches(mm).  
Dimension tolerance is +/- 0.01(0.25) unless otherwise specified.



### RECOMMENDED PCB PAD LAYOUT



### SCHEMATIC



### ELECTRICALS @ 25° C

Part Number	Turns Ratio +/- 2%		Primary Inductance OCL (mH) Min	DC Resistance (Ω)		Leakage Inductance L <sub>L</sub> (μH) Max	Interwinding Capacitance C <sub>ww</sub> (pF)	Isolation Voltage (Vrms)
	Primary	Secondary		Primary	Secondary			
S553-5692-09	1:1.14	1.14:1	1.25	2.2	2.6	0.8	35	1500

Leakage Inductance measured at 100kHz.

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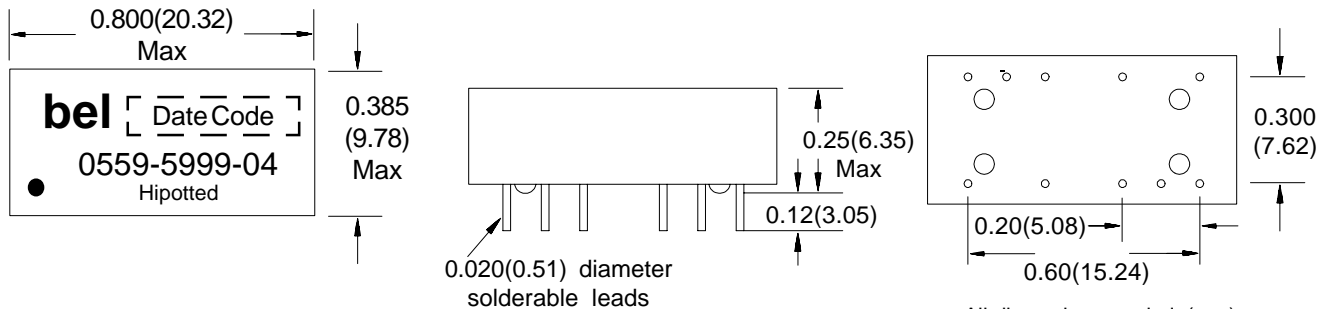
## T1 TRANSFORMER 0559-5999-04

TM0013

Bel introduces a new dual-in-line, T1 Transformer.

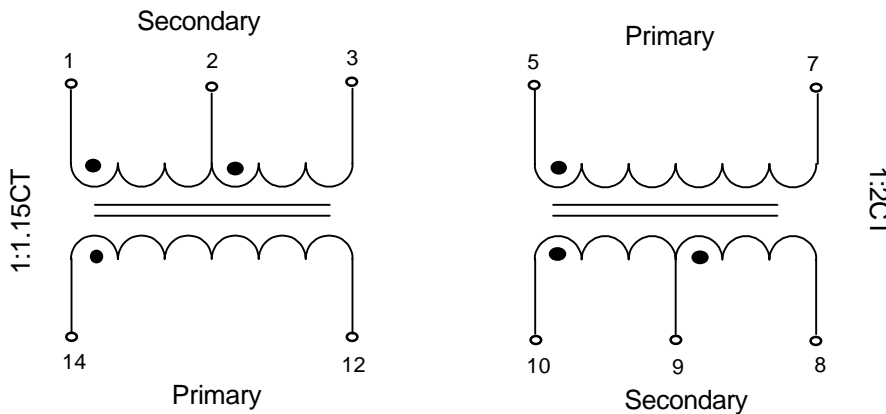
\* Isolation Voltage is 1500 Vrms

### MECHANICALS



All dimensions are in in(mm).  
Dimension tolerance is +/-0.02(0.51) unless otherwise specified.

### SCHEMATIC



### ELECTRICALS @ 25° C

Part Number	Primary Inductance OCL (mH) Min		Leakage Inductance $L_L$ ( $\mu$ H) Max		Coupling Capacitance $C_{wv}$ (pF) Max		DCR $\Omega$ (ohms) Max	
	Pins (5-7)	Pins (14-12)	Pins (5-7)	Pins (14-12)	Pins (14-1)	Pins (5-10)	Pins (5-7) to (14-12)	Pins (1-3) to (8-10)
0559-5999-04	1.2	1.5	0.5	0.6	35	40	0.7	1.1

Primary Inductance and Leakage Inductance measured at 100KHz, 20mV.

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Lancashire, U.K.  
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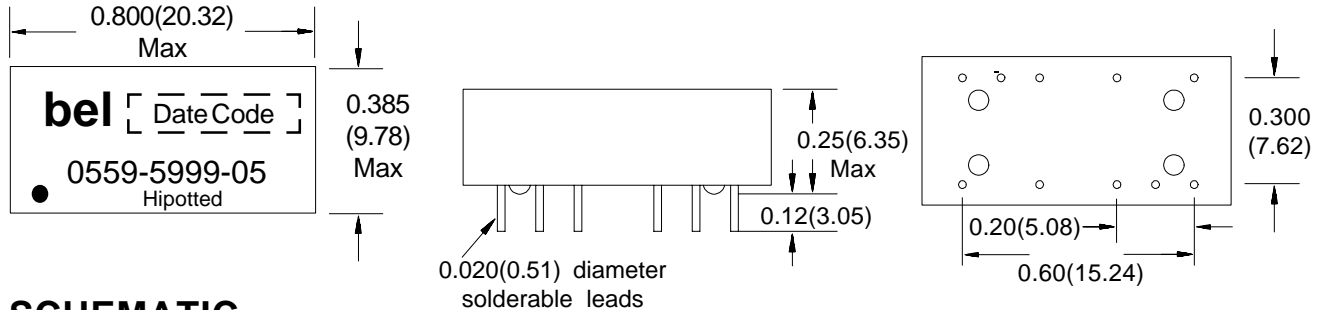
**T1 TRANSFORMER**  
0559-5999-05

TM0014

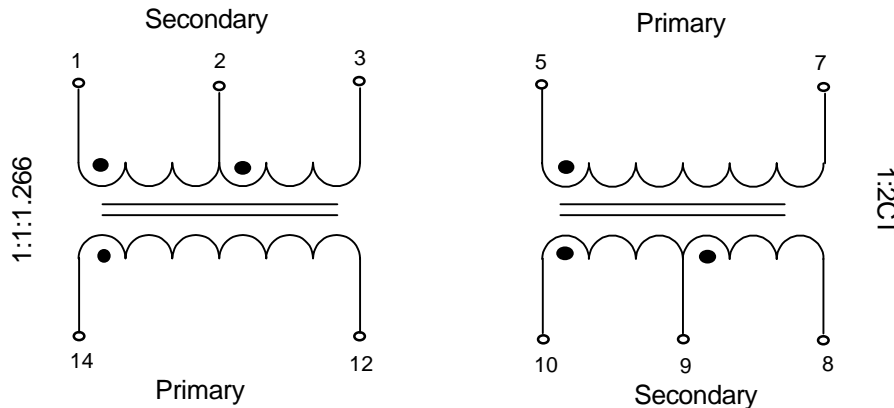
Bel introduces a new dual-in-line, T1 Transformer.

\* Isolation Voltage is 1500 Vrms

**MECHANICALS**



**SCHEMATIC**



All dimensions are in in(mm).  
Dimension tolerance is +/-0.02(0.51) unless otherwise specified.

Note: Pins (14-12) to Pins (1-3) is a 1:1.266 and Pins (14-12) to Pins (2-3) is a 1:1

**ELECTRICALS @ 25° C**

Part Number	Primary Inductance OCL (mH) Min		Leakage Inductance $L_L$ ( $\mu$ H) Max		Coupling Capacitance $C_{wv}$ (pF) Max		DCR $\Omega$ (ohms) Max	
	Pins (5-7)	Pins (14-12)	Pins (5-7)	Pins (14-12)	Pins (14-1)	Pins (5-10)	Pins (5-7) to (14-12)	Pins (1-3) to (8-10)
0559-5999-05	1.2	1.5	0.4	0.5	35	40	0.7	1.1

Primary Inductance and Leakage Inductance measured at 100KHz, 20mV.

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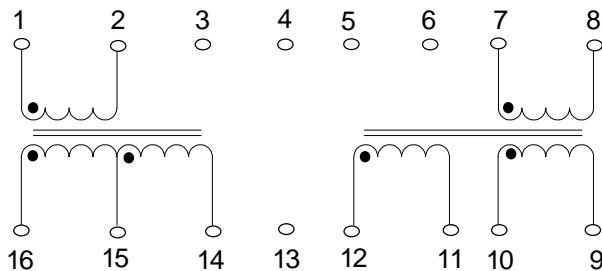
## T1 TRANSFORMER 0553-5841-00

TM0015

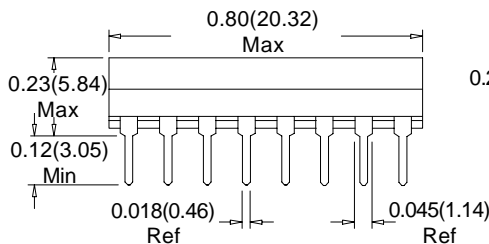
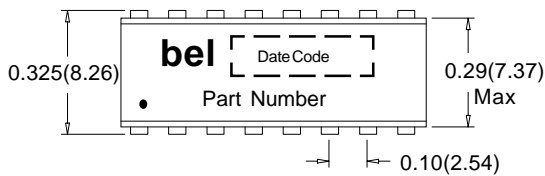
Bel offers a new T1 transformer. Precision winding in combination with semi-automated manufacturing processes provide a quality product.

- \* 1000 Vrms Isolation.
- \* Operating Temperature Range 0°C to 70°C.
- \* Able to withstand aqueous washes.

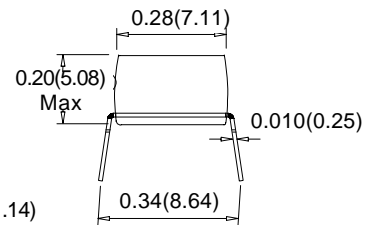
### SCHEMATIC



### MECHANICALS



### Cross Sectional Views



Dimensions are in inches(mm). Dimension tolerance is equal to +/- 0.01(0.25) unless otherwise stated.

### ELECTRICALS @ 25° C.

Part Number	Turns Ratio (+/- 5%)		Inductance OCL (mH) Min	Leakage Inductance $L_L$ (nH) Max		DCR (mohms) Max		Coupling Capacitance $C_{ww}$ (pF) Max
	Pins (1-2):(16-14)	Pins (7-8):(12-11):(10-9)		Pins (1-2) tie and Pins (7-8)	Pins (14,15,16)	Pins (7-8) tie and Pins (9,10,11,12)	Pins (1-2) and Pins (7-8)	
0553-5841-00	1 : $\sqrt{2}$ CT	1 : 1 : 1	1.2	800	500	800	1100	35

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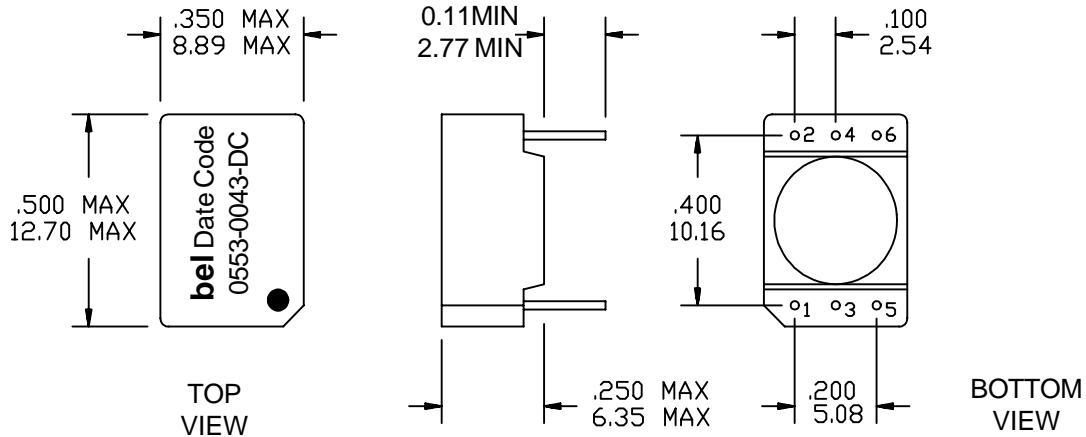
**ISDN TRANSFORMER  
0553-0043-DC**

TM0016

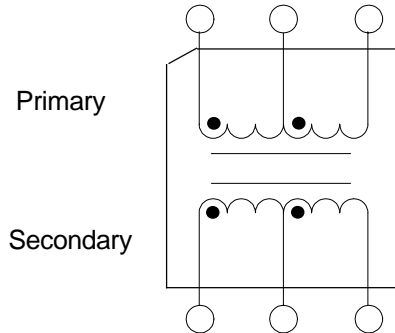
Bel provides a new transformer to be used with the Echelon Lontalk applications.

- \* Primary Inductance is 3.5 mH minimum.
- \* Isolation Voltage - 1500Vrms.

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**SCHEMATIC**



Dimensions in inches  
(mm)  
Dimension tolerance +/- 0.01(0.25)  
unless otherwise stated

**ELECTRICALS**

Part Number	Primary Inductance OCL (μH) Min	Turns Ratio	DCR ohms (max)	
	Pins (1-5)	Pins (1-5):(2-6)	Pins (1-5)	Pins (2-6)
0553-0043-DC	3.5	1CT:1CT	0.5	0.5

Electricals @ 25° C.  
Primary Inductance is measured at 20 mV @ 10 KHz..

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## T1/CEPT/ISDN-PRI TRANSFORMER 0553-0013-13

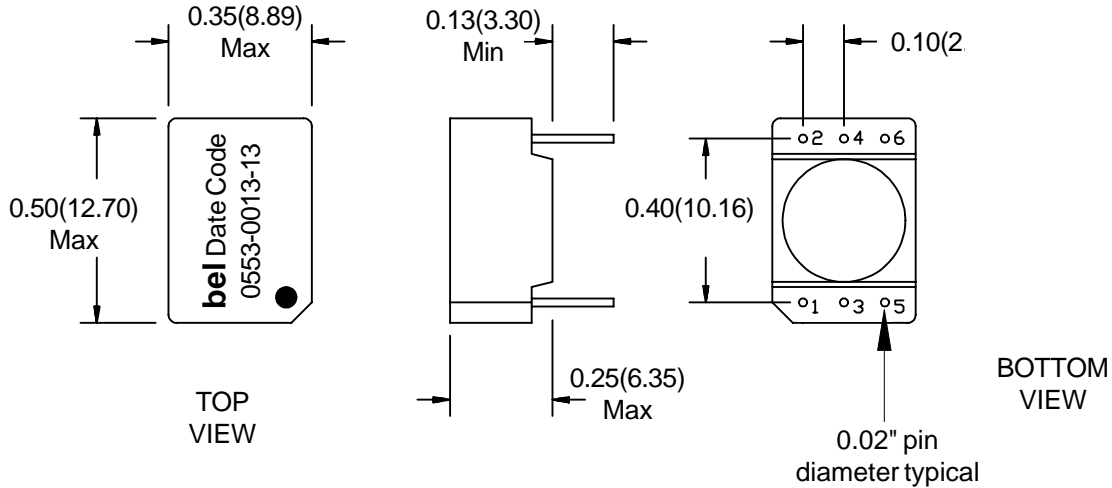
TM0017

Bel provides a new transformer to be used in multiple T1/CEPT/ISDN-Pri applications.

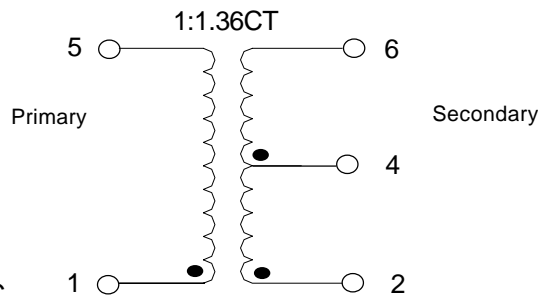
\* Primary Inductance is 1.2 mH minimum.

\* Isolation Voltage - 1500Vrms.

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**SCHEMATIC**



Dimensions in inches(mm)  
 Dimension tolerance +/- 0.01(0.25)  
 unless otherwise stated

**ELECTRICALS @ 25° C.**

Part Number	Primary Inductance OCL (mH) Min	Turns Ratio +/- 5%	Coupling Capacitance (pF) Max	Leakage Inductance L <sub>l</sub> (μH) Max	DCR (ohms) Max	
		Pins (1-5):(2-6)			Pins (1-5)	Pins (2-6)
0553-0013-13	1.20	1:1.36CT	35	0.80	0.7	0.9

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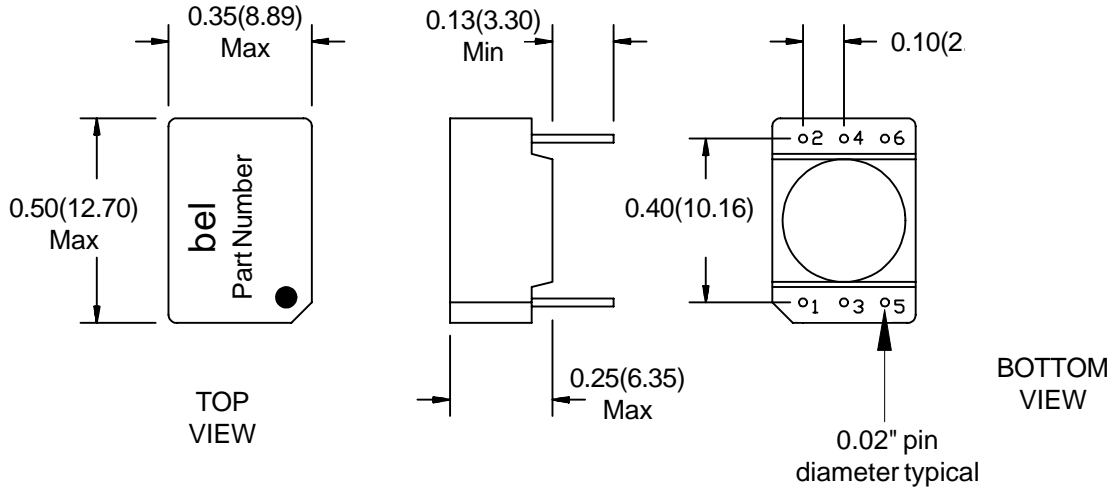
**T1/CEPT/ISDN-PRI TRANSFORMER**  
**0553-0013-14**

TM0018

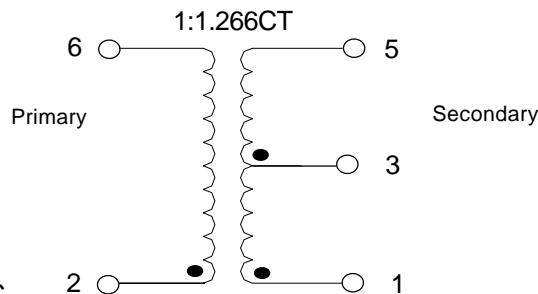
Bel provides a new transformer to be used in multiple T1/CEPT/ISDN-Pri applications.

- \* Primary Inductance is 1.5 mH minimum.
- \* Isolation Voltage - 1500Vrms.

**M  
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S**



**SCHEMATIC**



Dimensions in inches(mm)  
 Dimension tolerance +/- 0.01(0.25)  
 unless otherwise stated

**ELECTRICALS @ 25° C.**

Part Number	Primary Inductance OCL (mH) Min	Turns Ratio +/- 5% Pins (2-6):(1-5)	Coupling Capacitance (pF) Max	Leakage Inductance L <sub>l</sub> (μH) Max	DCR (ohms) Max	
					Pins (1-5)	Pins (2-6)
0553-0013-14	1.50	1:1.266CT	18	0.80	0.80	0.92

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## ISDN TRANSFORMER 0554-3855-00

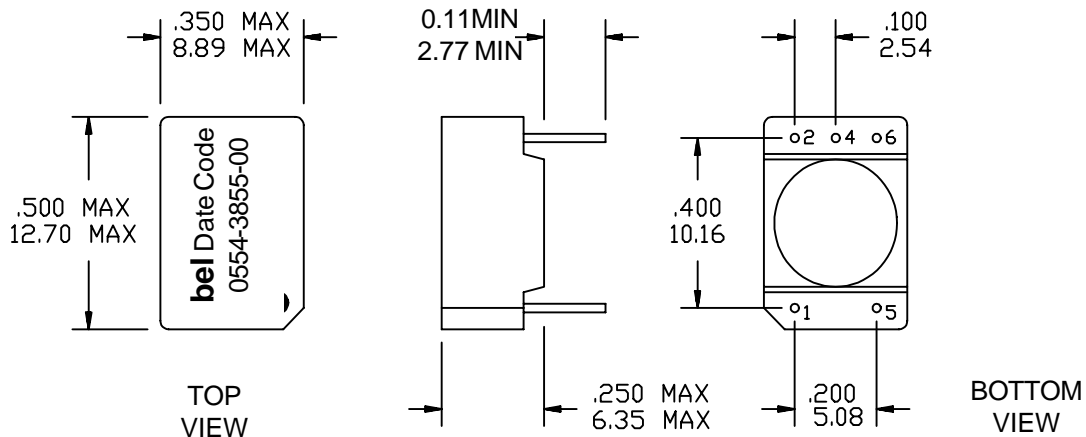
TM0019

Bel provides a new transformer.

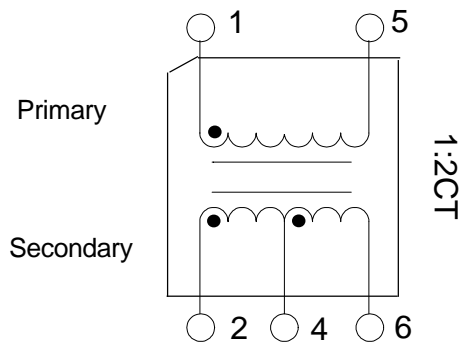
\* Primary Inductance is 19 $\mu$ H minimum.

\* Isolation Voltage - 3000Vrms.

MECHANICALS



### SCHEMATIC



Dimensions in  $\frac{\text{inches}}{\text{(mm)}}$   
Dimension tolerance +/- 0.01(0.25) unless otherwise stated

### ELECTRICALS

Part Number	Primary Inductance OCL ( $\mu$ H) Min	Turns Ratio	DCR ohms (max)	Leakage Inductance ( $\mu$ H) Max	Coupling Capacitance (pF) Max	Isolation Voltage (Vrms) 1 Min
	Pins (1-5)	Pins (1-5):(2-6)	Pins (1-5)=(2-4)=(4-6)			
0554-3855-00	19	1:2CT	0.20	60	60	3000

Electricals @ 25° C. Primary Inductance is measured at 20 mVrms @ 100 KHz.  
Leakage Inductance and Coupling Capacitance is measured at 100KHz, 10mVrms.

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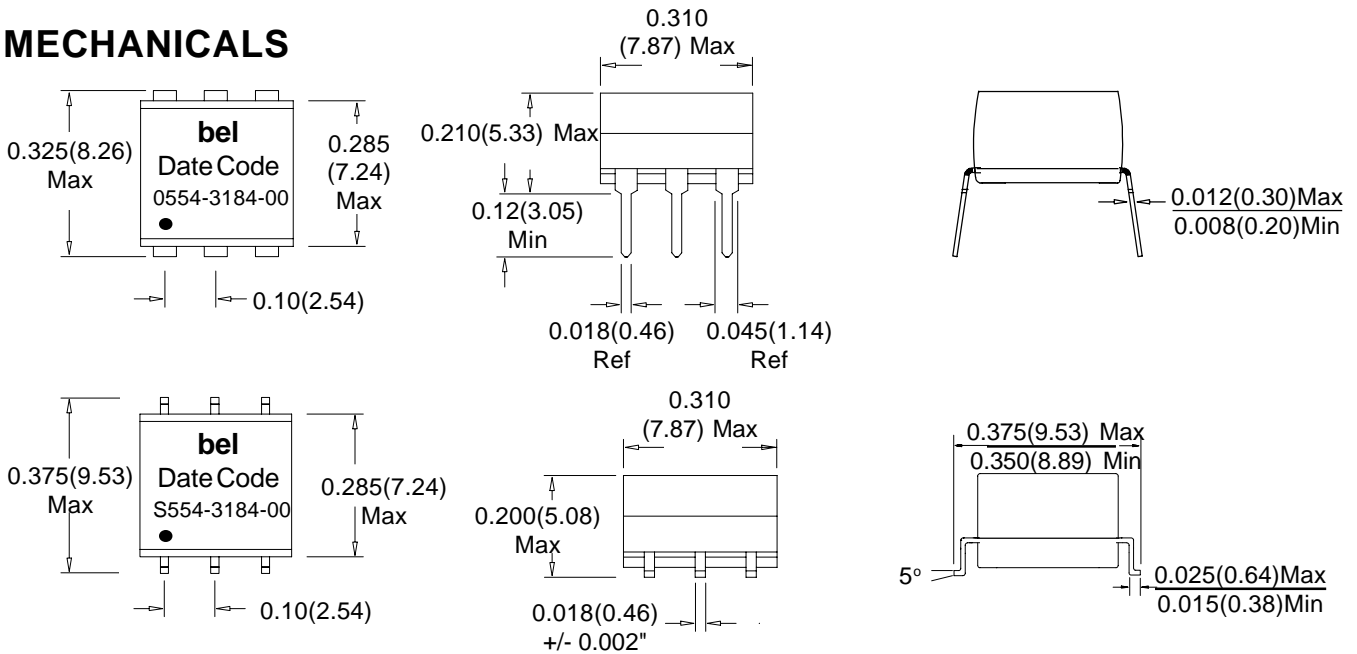
# T3/DS3/E3/STS-1 TRANSFORMERS

TM0020

Bel provides a small footprint transformer for use in multiple applications. It is available in both through hole and "pick and place compatible" SMD packaging.

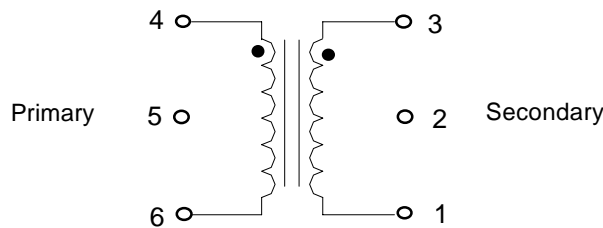
\* High Reliability and Low Cost

## MECHANICALS



Dimensions are in inches (mm).  
Dimension tolerance +/- 0.01(0.25) unless otherwise stated.

## SCHEMATIC



## ELECTRICALS @ 25° C

Part Number	Turns Ratio +/- 5%	Primary Pins	Inductance OCL (μH) Min	Leakage Inductance L <sub>L</sub> (μH) Max	Bandwidth (dB) Typ	Hipot (Vrms) @ 1 Sec
					200kHz-340MHz	
0554-3184-00	1:1	4-6	40	0.08	3	1500
S554-3184-00						

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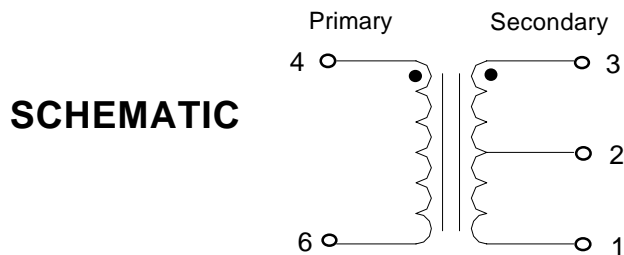
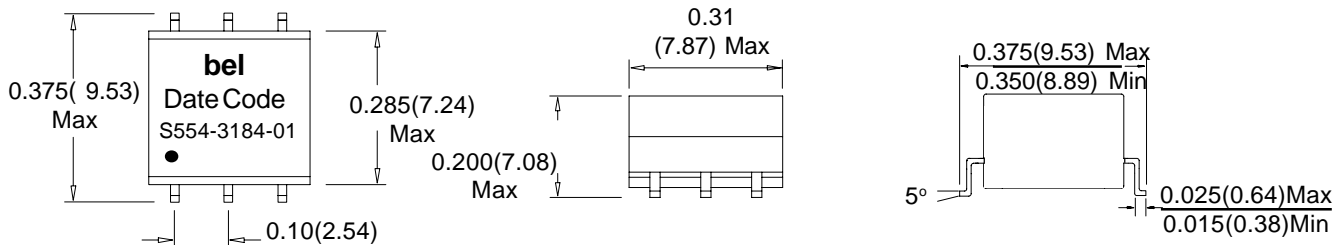
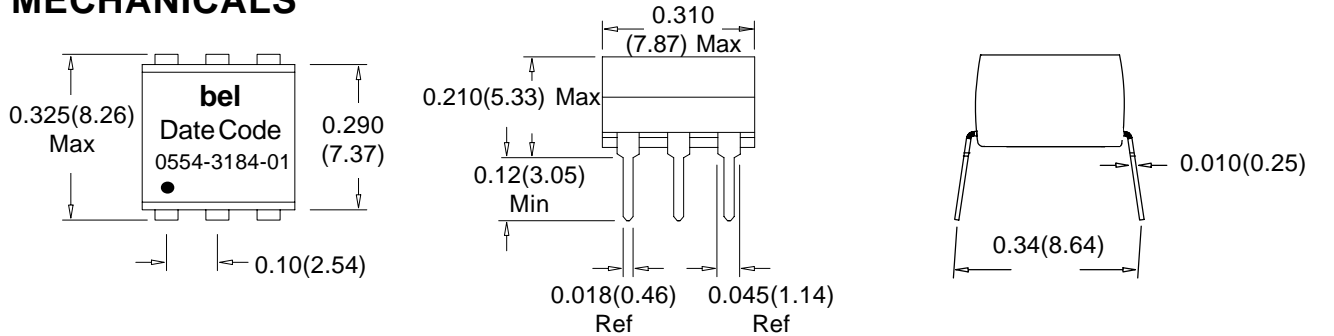
## DS3/T3/E3/STS-1 TRANSFORMERS 0554-3184-01 and S554-3184-01

TM0021

Bel introduces two new "pick and place" compatible, small footprint, transformers designed to be used in multiple applications.

- \* 1500 Vrms isolation
- \* High Reliability and Low Cost

### MECHANICALS



Dimensions are in inches (mm).  
Dimension tolerance +/- 0.01(0.25) unless otherwise stated.

### ELECTRICALS @ 25° C

Part Number	Turns Ratio +/- 5%	Inductance OCL ( $\mu$ H) Min	Leakage Inductance $L_L$ ( $\mu$ H) Max	Bandwidth (dB) Typ	Hipot (Vrms) @1 sec
				250kHz-500MHz	
0554-3184-01	1:2CT	19	0.06	3	1500
S554-3184-01	1:2CT	19	0.06	3	1500

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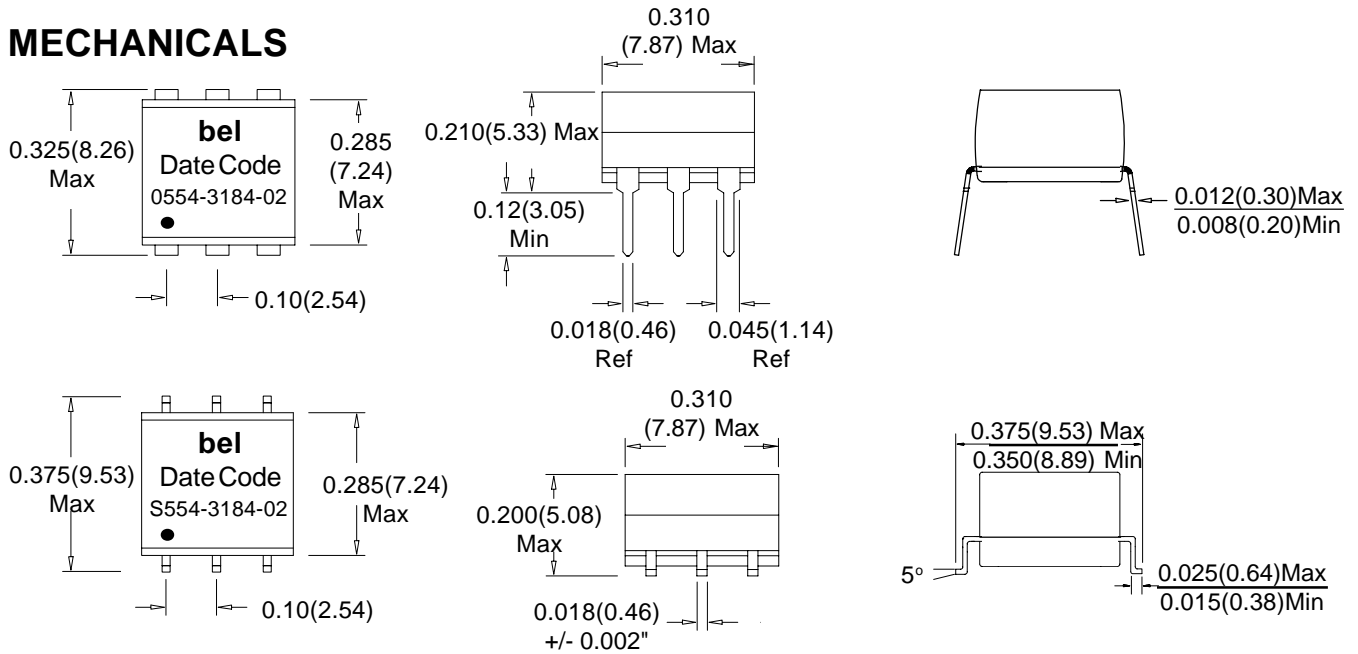
# ISDN TRANSFORMERS T3 Applications

TM0022

Bel provides a small footprint transformer for use in multiple applications. It is available in both through hole and "pick and place compatible" SMD packaging.

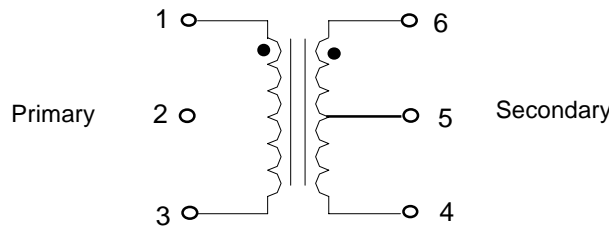
\* High Reliability and Low Cost

## MECHANICALS



Dimensions are in inches (mm).  
Dimension tolerance +/- 0.01(0.25) unless otherwise stated.

## SCHEMATIC



## ELECTRICALS @ 25° C

Part Number	Turns Ratio +/- 5%	Primary Pins	Inductance OCL ( $\mu$ H) Min	Leakage Inductance $L_L$ ( $\mu$ H) Max	DC Resistance DCR (ohms) Max		Interwinding Capacitance $C_{ww}$ (pF) Max	Hipot (Vrms) @ 1 Sec
					Pins (1-3)	Pins (4-6)		
0554-3184-02	1:2CT	1-3	40	0.12	0.2	0.3	10	1500
S554-3184-02								

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## PULSE TRANSFORMERS S553-3855-01

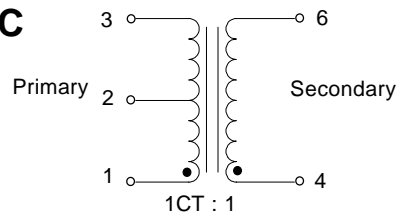
TM0023

Bel takes this opportunity to supply a new Pulse Transformer for Digital Data Service. Our manufacturing processes assure quality and reliability in every component.

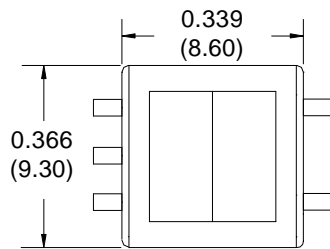
\* Designed to work compatibly with the Level One LXT441 Transceiver.

\* Designed for SW36 and DDS.

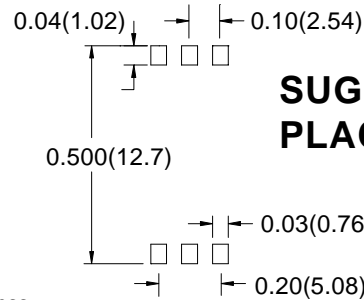
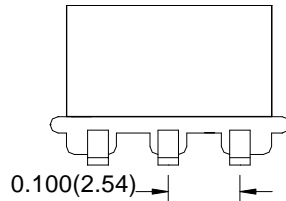
### SCHEMATIC



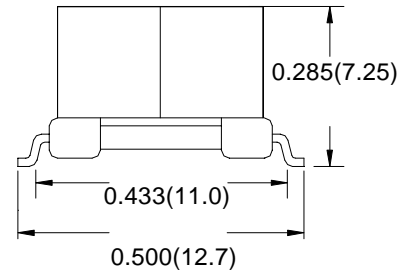
### MECHANICALS



All dimensions are in inches(mm). Dimension tolerance is +/- 0.01 unless otherwise stated.



### SUGGESTED PLACEMENT



### ELECTRICALS @ 25°C

Part Number	Turns Ratio +/- 2%	Primary Inductance (mH) Min	Leakage Inductance (μH) Max	Capacitance (pF) Max	DCR (ohms) +/- 10%	Return Loss (dB) Typ. vs. Line 2	Insertion Loss (dB) Typ.	Frequency Response (dB)
	Pins (3-1):(4-6)	Pins (3-1)	Pins (3-1)	Pins (3 to 4)	Pins (3-1) & Pins (4-6)	1kHz	10kHz	100Hz-112kHz
S553-3855-01	1CT:1	40	40	50	6	32	1.50	+/- 1.0

Part Number	Longitudinal Balance (dB) Typ.			DC Bias Current (mA) Min	Dielectric Strength (VAC)
	60Hz to 1000Hz	1000Hz to 4000Hz	15kHz to 2MHz		
S553-3855-01	60	40	40	50	1500

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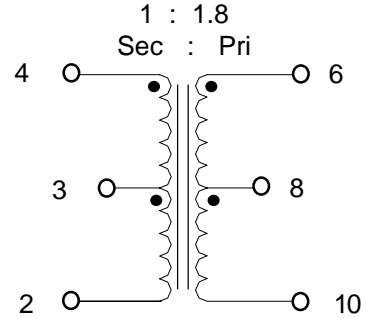
**TRANSFORMER**  
0557-0450-00

TM0024

Bel designs a transformer for multiple applications with a turns ratio of 1:1.8.

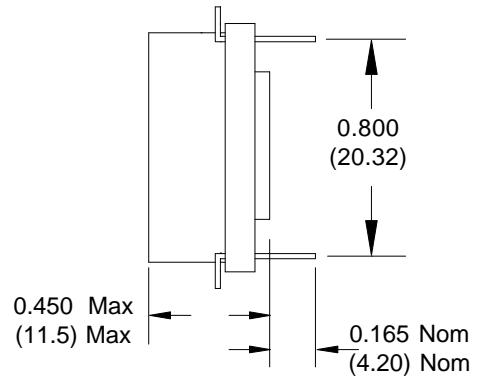
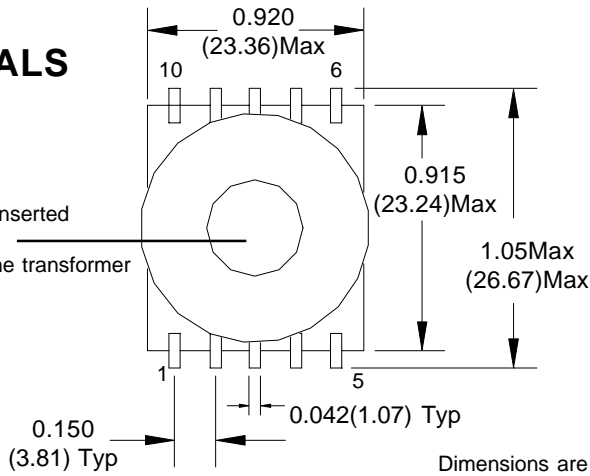
\* 2000 Vrms Isolation Voltage

**SCHEMATIC**



**MECHANICALS**

Phenolic add to be inserted and glued flush with top and bottom of the transformer core halves.



Dimensions are in inches (mm).  
Dimension tolerance +/- 0.01(0.25) unless otherwise stated.

**ELECTRICALS @ 25° C**

Part Number	Turns Ratio (+/- 2%)	Inductance (mH) +/- 3%	Leakage Inductance (µH) Max	Coupling Capacitance (pF) Max	DCR (Ω) Max		Hipot (Vrms)
					Pins (6-10)	Pins (4-2)	
0557-0450-00	1 : 1.8	2.81	200	40	5.2	3.0	2000

Leakage Inductance is measured with Pins (4-2) tied.  
Inductance, Leakage Inductance, and Coupling Capacitance tested at 10KHz, 0.1V.

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## T1/CEPT/ISDN-PRI TRANSFORMER 0553-6500-04

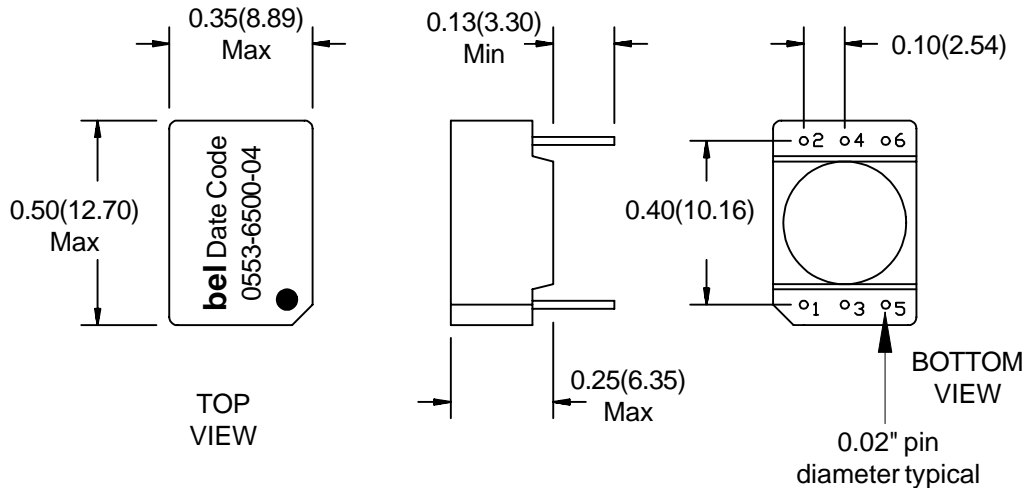
TM0045

Bel provides a new transformer to be used in multiple T1/CEPT/ISDN-Pri applications.

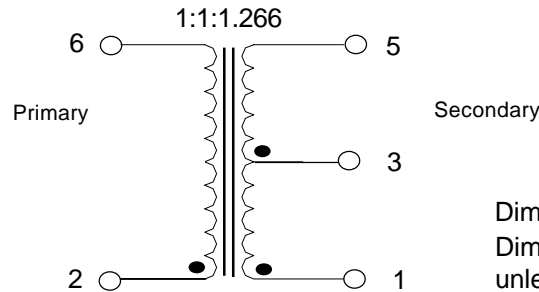
\* Primary Inductance is 1.5 mH minimum.

\* Isolation Voltage - 1500Vrms.

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**SCHEMATIC**



Dimensions in inches(mm)  
Dimension tolerance +/- 0.01(0.25) unless otherwise stated

**ELECTRICALS @ 25° C.**

Part Number	Primary Inductance OCL (mH) Min	Turns Ratio +/- 5%	Coupling Capacitance (pF) Max	Leakage Inductance L <sub>l</sub> (μH) Max	DCR (ohms) Max	
		Pins (2-6):(3-5):(1-5)			Pins (2-6)	Pins (1-5)
0553-6500-04	1.50	1:1:1.26	35	0.40	0.7	0.9

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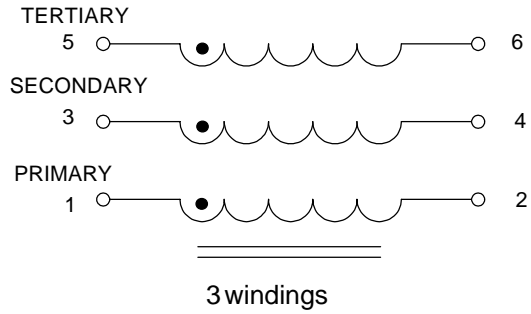
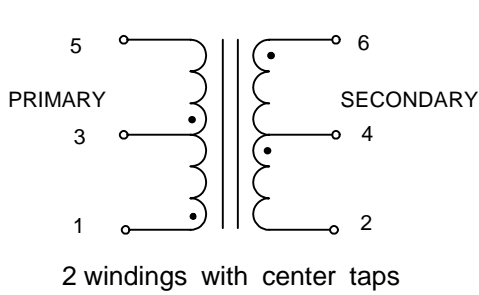
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# DATA COUPLING "T" CASE TRANSFORMERS

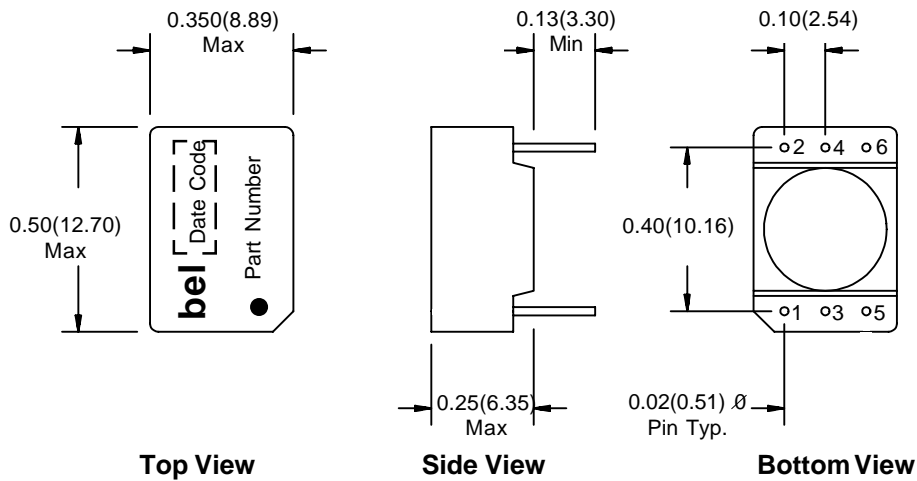
TM0051

## SCHEMATICS AND MECHANICALS

### SCHEMATICS



### MECHANICALS - T CASE PACKAGE STYLE



Dimensions are in inches (mm).  
Dimension Tolerance is  
+/- 0.01(0.25) unless  
otherwise specified.

## DATA COUPLING "T" CASE TRANSFORMERS

**TM0051**

The "T" case LAN networking transformers are designed to be used as small form, discreet components for isolation and impedance matching. Custom designs are also available upon request.

- \* 2000 Vrms Isolation.
- \* Discreet isolation protection and AUI applications.
- \* Will withstand aqueous washes.

### ELECTRICALS @ 25° C

Part Number	Turns Ratio (+/- 5%)	Inductance Lp (μH)Min	ET Constant (Vμs) Min	Rise Time (ns) Max	Coupling Capacitance C <sub>ww</sub> (pF) Max	Leakage Inductance L <sub>L</sub> (μH) Max	Pri DCR (ohms) Max	Sec DCR (ohms) Max	Tertiary DCR (ohms) Max
0553-0053-IC	1:1:1	5,000	25.0	10.5	60	1.3	3.9	3.9	3.9
0553-0023-IC	1:1:1	2,000	16.0	8.2	37	0.8	2.5	2.5	2.5
0553-0013-IC	1:1:1	1,000	11.0	8.0	30	0.7	2.0	2.0	2.0
0553-5006-IC	1:1:1	500	8.5	5.3	32	0.4	1.3	1.3	1.3
0553-2006-IC	1:1:1	200	5.0	4.2	18	0.3	0.9	0.9	0.9
0553-1006-IC	1:1:1	100	5.0	5.6	15	0.5	1.0	1.0	1.0
0553-0506-IC	1:1:1	500	5.2	5.6	18	0.5	1.3	1.3	1.3
0553-0206-IC	1:1:1	20	3.2	4.1	21	0.4	0.9	0.9	0.9
0553-0106-IC	1:1:1	10	3.7	5.1	22	0.5	0.9	0.9	0.9
0553-0053-PC	2:1:1	5,000	25.0	16.0	33	3.6	3.9	2.0	2.0
0553-0023-PC	2:1:1	2,000	16.0	11.0	19	1.8	2.5	1.4	1.4
0553-5006-PC	2:1:1	500	8.5	5.6	11	1.1	1.3	0.7	0.7
0553-2006-PC	2:1:1	200	5.0	3.2	8	0.8	0.9	0.5	0.5
0553-0206-PC	2:1:1	20	5.8	7.5	12	1.5	1.3	0.8	0.8
0553-2006-QC	3:1:1	200	5.0	3.6	7	1.1	0.9	0.4	0.4
0553-0206-QC	3:1:1	20	3.2	2.7	6	1.3	0.9	0.4	0.4
0553-0023-DC	1CT:1CT	2,000	16.0	8.2	37	0.8	2.5	2.5	--
0553-0013-DC	1CT:1CT	1,000	11.0	8.0	30	0.7	2.0	2.0	--
0553-5006-DC	1CT:1CT	500	8.5	5.3	32	0.4	1.3	1.3	--
0553-2006-DC	1CT:1CT	200	5.0	4.2	18	0.3	0.9	0.9	--
0553-0506-DC	1CT:1CT	50	5.2	5.6	18	0.5	1.3	1.3	--
0553-0206-DC	1CT:1CT	20	3.2	4.1	21	0.4	0.9	0.9	--
0553-0106-DC	1CT:1CT	10	3.7	5.1	22	0.5	0.9	0.9	--
0553-0023-OC	2CT:1CT	2,000	16.0	11.0	19	1.8	2.5	1.4	--
0553-5006-OC	2CT:1CT	500	8.5	5.6	12	1.2	1.4	0.8	--
0553-2006-OC	2CT:1CT	200	5.0	3.2	8	0.8	0.9	0.5	--
0553-0506-OC	2CT:1CT	50	5.2	5.2	12	1.3	1.3	0.7	--
0553-0206-OC	2CT:1CT	20	5.8	7.5	12	1.5	1.3	0.8	--
0553-0106-OC	2CT:1CT	10	3.7	4.5	9	1.5	0.9	0.5	--

Mechanical Diagrams and Schematics are located on the facing page.

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