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Common Mode Interface Chokes •

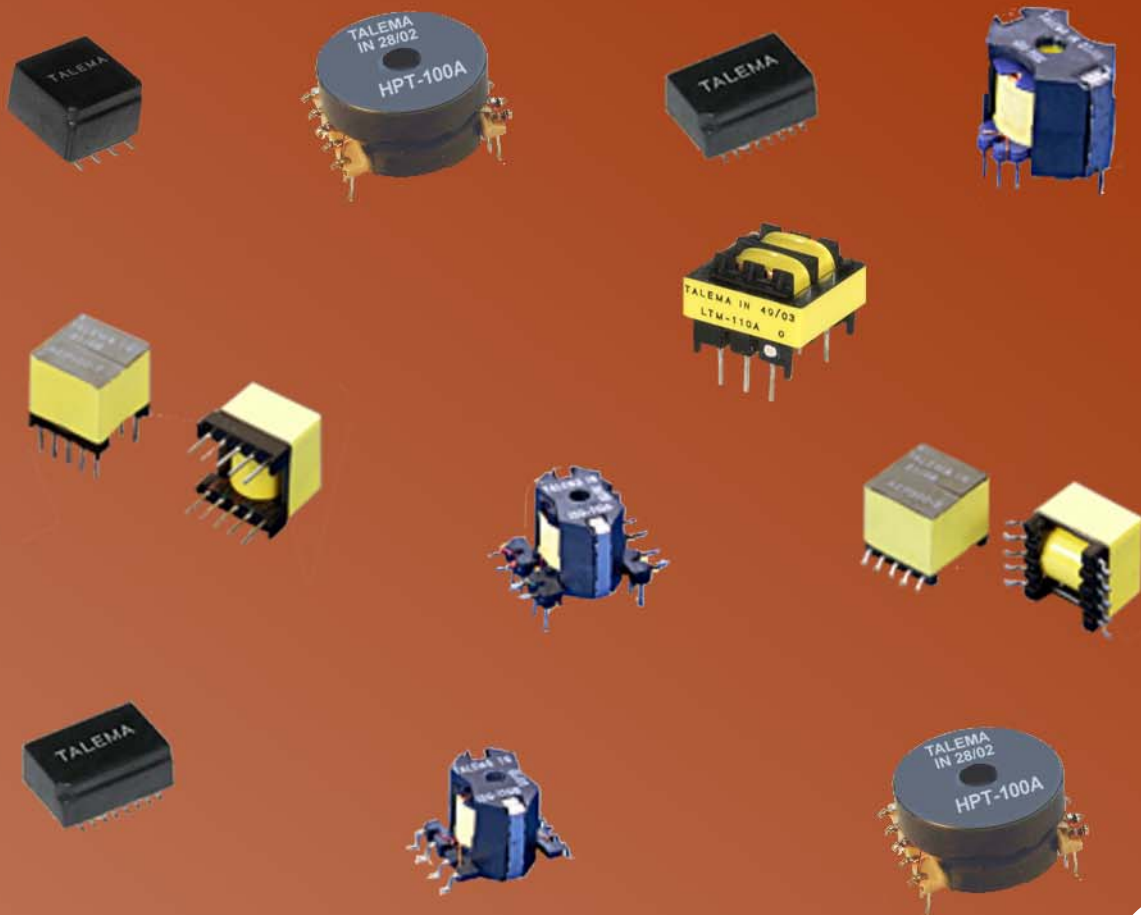
Line Interface 56kbps Modem Transformer •

Inductors and Transformers for xDSL Applications •

ADSL, HDSL, SDSL, VDSL and Fibre Channel Interface Transformers

SECTION 11

## *Transformers for Broadband Access and Fibre Channel Interface*



### Sales & Marketing, Design and Manufacturing Facilities

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THE TALEMA GROUP • Magnetic Components for ISDN / xDSL / LAN Data Communications



## TALEMA PROFILE

Founded in 1975, The TALEMA International Group has established itself as a world leader in the manufacture of toroidal transformers and related magnetic components. Our strong technical engineering expertise has contributed to the growth of our current workforce to over 1,200 employees in manufacturing locations in the Czech Republic and India.

Over the years The Talema Group has succeeded in designing, producing and delivering in excess of 50 million transformers to its customers. The recent incorporation of xDSL technology into our extensive range of Telecom and LAN magnetics offerings, such as ISDN, 10Base-T, Ethernet transformers for 100/1000Base-T, has broadened our market offering to an even higher level.

## CONTENTS

### Components for Broadcom Access

#### ADSL

- IC-ADSL Transformer Selection Guide
- AEP Series - EP13 Style ADSL Transformers
- EP-13 Transformers for Alcatel Chip Sets
- PT-23 Transformers for Alcatel Chip Sets
- EP-13 Transformers for Analog Devices Chip Sets
- EP-13 Transformers for Centillium Chip Sets
- EP-13 Transformers for Conexant Chip Sets
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- EP-13 Transformers for Globespan Chip Sets
- EP-13 Transformers for ITEX Chip Sets
- EP-13 Transformers for Legerity (AMD) Chip Sets
- EP-13 Transformers for Linear Technology Chip Sets
- EP-13 Transformers for Lucent Chip Sets
- EP-13 Transformers for Motorola Chip Sets
- EP-13 Transformers for Texas Instruments Chip Sets

#### HDSL

- PT-23 Transformers for Level One and Rockwell (Brooktree) Chip Sets

#### SDSL/SHDSL

- EP-13 Transformers matched to Infineons Chip Sets

#### VDSL

- SMD filter for conversion of 2 wire circuit to a 4 wire circuit

#### Fibre Channel Transformers

- FCJ Series - Dual Fibre Channel Transformers for 75 ohm Coaxial & 150 ohm STP Cable
- TCJ Series - 150 Ohm Twinax Cable Dual Gigabit Transformers

#### Modem Transformers

- LTM-110A - Line Interface 56kbps

#### Common Mode EMI Noise Suppression Chokes

- Quick Reference Guide to Common Mode Interface Chokes

#### Tape and Reel Packaging and Dimensions

#### Authorized Talema Sales Representatives

## QUALITY

The TALEMA Group has a total commitment to quality and employs Lean Six Sigma training for engineering, production and administrative staff to help achieve a goal of zero defects. All facilities maintain very stringent Quality Control and Quality Assurance procedures and are certified to and manufacture in accordance with ISO-9001:2000, TS-16949 :2002 and meet a broad range of International Standards including UL, VDE, IEC, and EN.

Performance has been proven in the many design in's of our products. The fact that we maintain a ship-to-stock vendor rating with over 200 national and international companies is, to us, the best testimonial of our commitment to quality.

## ENVIRONMENT

All TALEMA International Group manufacturing facilities are RoHS compliant and all chokes, inductors and HF components are produced in an Environment Management System (EMS) facility which is certified to ISO-14001:2004.



Catalog  
Page Nr.

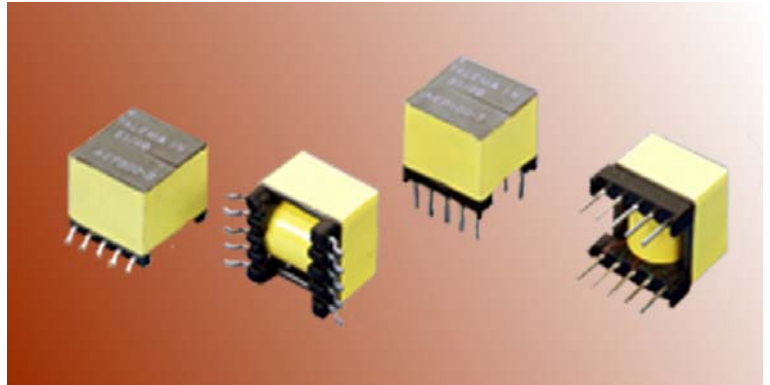
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Visit our web site for detailed electrical and mechanical specifications for Talema's extensive line of magnetic components for LAN, Ethernet, Broadband & Telecom Applications - <http://www.talema-nuvotem.com>

## AEP Series • ADSL Transformers

### Features

- complies with ANSI and ETSI requirements
- very low THD
- 1500V minimum isolation
- all materials approved to UL94V-0
- excellent quality at competitive price due to high volume production
- manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- fully RoHS compliant and meets lead free reflow level J-STD-020C



Talema has designed a cost effective range of transformers and inductors for ADSL applications. The units are available in the most popular small footprints in both thru hole and surface mount configurations . The transformers are matched to all leading chip sets and meet the requirements of ANSI and ETSI standards while offering very low THD, permitting maximum loop length.

### IC - ADSL Transformer Cross Reference Guide

IC Manufacturer	IC Part Number	Application	Turns Ratio Line : Chip	Isolation Voltage	Inductance Line Side	Talema Part Number
Alcatel	MTK20130/140/150	CO	2 : 1	1500	410µH	AEP210 / AE-230
	MTK20130/140/141/150/152	CPE	1 : 1	1500	480µH	AEP220
	MTK20131	CPE	1 : 1	2000	440µH	APT200
	MTK20450	CO/CPE	2 : 1	1500	410µH	AEP210 / AE-230
Analog Devices	AD20MSP910/918	CO/CPE	1 : 1	1500	5.0mH	AEP100 / AEP140
	AD20MSP918	CO	1.27 : 1	1500	3.22mH	AEP110
	AD20MSP930	CO	1.11 : 1	1500	2.03mH	AEP120
	AD20MSP930	CPE	1.2 : 1	1500	2.42mH	AEP130
Centillium	CT-L21SC08/CT-L41SC04	CO	1 : 1	1500	462µH	AEP1000
	CT-L50SC04/CT-L50ST81	CO/CPE	1.8 : 1	1500	462µH	AEP1010
	CT-L10AT01-1T		1 : 1.1	1500	364µH	AEP1020
Conexant	328R58-001 / 328R57-001	CO/CPE	2 : 1	1500	800µH	AEP1100
Fujitsu	MB86670	CO	2 : 1	1500	2.0mH	AEP800
Globespan	G7000	CPE	1 : 1	1500	435µH	AEP500
	G7000	CO	1.4 : 1	1500	441µH	AEP510
	EL-1501	CPE	1 : 1	1500	407µH	AEP520 / AEP530
	EL-1501	CO	1 : 1.4	1500	483µH	AEP540
	G7266	CO	1.41 : 1	1500	474µH	AEP550
	G7266RT		2 : 1	1500	440µH	AEP560
ITEX	i80134 / i80234	CPE	1 : 1	1500	462µH	AEP700
Legerity (AMD)	AMDSL134	CO	2 : 1	1500	410µH	AEP900
	AMDSL134	CPE	1 : 1	1500	410µH	AEP910
Linear Tech	LT1497		1 : 1.1	1500	364µH	AEP1020
Lucent	Wildwire	CO	1 : 1	1500	490µH	AEP610
	Wildwire	CPE	1 : 1	1500	1.23mH	AEP600
Motorola	MC03AX1456RT	CPE	1 : 1.8	1500	3.96mH	AEP300 / AEP330
	MC03AX1456	CO/CPE	1.2 : 1	1500	3.96mH	AEP310
	MC143460 / MC143462		1.2 : 1	1500	3.96mH	AEP320
TI	TNET D4000R		1.423 : 1	1500	1.5mH	AEP400
	TNET D4000C/P		1.95 : 1	1500	1.5mH	AEP410
	TNET D3000C/P		1.423 : 1	1500	1.5mH	AEP400



## AEP Series Electrical Specifications @ 25°C

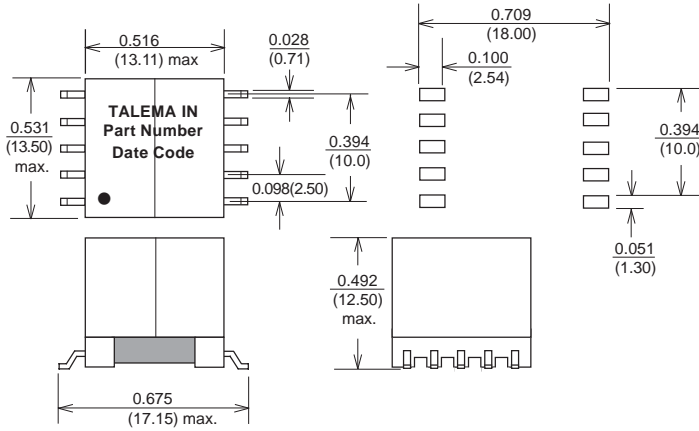
Operating Temperature -40° to +85°C

Part Number	Package	Schematic	Turns Ratio ±2% Line : IC	L <sub>P</sub>	L <sub>L</sub> (µH) Max	C <sub>WW</sub> (pF) Max	DCR (Ohms) Max Line / IC	THD (Linearity) Typical	Longitudinal Balance Min	Insertion Loss Max	Freq. Response Max	Isolation Voltage (Vrms)
AEP100-S AEP100-T	SMD TH	1	1 : 1	5.0mH ±10%	25	60	3.00/3.00	-80dB 30kHz	-46dB 10kHz-1.1MHz	0.5dB 300kHz	1.0dB 30kHz-1.1MHz	1500
AEP110-S AEP110-T	SMD TH	1	1.27 : 1	3.22mH ±10%	7.5	50	2.45/2.00	-80dB 30kHz	-50dB 30kHz-1.1MHz	0.5dB 100kHz	1.0dB 30kHz-1.1MHz	
AEP120-S AEP120-T	SMD TH	1	1.11 : 1	2.03mH Min	10	60	1.30/1.50	-80dB 30kHz	-50dB 30kHz-1.1MHz	0.5dB 100kHz	1.0dB 30kHz-1.1MHz	
AEP130-S AEP130-T	SMD TH	1	1.2 : 1	2.42mH Min	10	50	1.30/1.50	-80dB 30kHz	-50dB 30kHz-1.1MHz	0.5dB 100kHz	1.0dB 30kHz-1.1MHz	
AEP140-S AEP140-T	SMD TH	2	1 : 1	5.0mH ±10%	25	60	3.00/3.00	-80dB 30kHz	-40dB 30kHz-1.1MHz	0.5dB 100kHz	1.0dB 30kHz-1.1MHz	
AEP210-S AEP210-T	SMD TH	3	2 : 1	410µH ±10%	8	50	0.90/0.50	-72dB 20kHz	-40dB 30kHz-1.1MHz	1.0dB 100kHz, 1.1MHz	1.5dB 30kHz-1.1MHz	1500
AEP220-S AEP220-T	SMD TH	2	1 : 1	480µH ±10%	5	50	1.25/1.35	-72dB 10kHz	-40dB 30kHz-1.1MHz	1.0dB 100kHz, 1.1MHz	1.5dB 30kHz-1.1MHz	
AEP230-S AEP230-T	SMD TH	2	2 : 1	410µH ±10%	8	50	0.90/0.50	-72dB 20kHz	-40dB 30kHz-1.1MHz	1.0dB 100kHz, 1.1MHz	1.5dB 30kHz-1.1MHz	
AEP300-S AEP300-T	SMD TH	4	1 : 1.8	3.96mH ±5%	25	50	4.40/8.00	-80dB 30kHz	-40dB 25kHz-1MHz	0.5dB 100kHz	0.5dB 30kHz-1.1MHz	
AEP310-S AEP310-T	SMD TH	4	1.2 : 1	3.96mH ±5%	15	50	4.20/3.80	-80dB 100kHz	-40dB 25kHz-1MHz	0.5dB 100kHz	0.5dB 30kHz-1.1MHz	
AEP320-S AEP320-T	SMD TH	5	1.2 : 1	3.96mH ±5%	15	50	2.90/2.50	-80dB 100kHz	-40dB 25kHz-1MHz	0.5dB 100kHz	0.5dB 30kHz-1.1MHz	1500
AEP330-S AEP330-T	SMD TH	5	1 : 1.8	3.96mH ±5%	25	60	4.40/8.00	-80dB 30kHz	-40dB 25kHz-1MHz	0.5dB 100kHz	0.5dB 30kHz-1.1MHz	
AEP400-S AEP400-T	SMD TH	8	1.423 : 1	1.5mH ±6%	18	40	1.75/0.80	-80dB 100kHz	-50dB 30kHz-1.1MHz	0.5dB 300kHz	0.5dB 30kHz-1.1MHz	
AEP410-S AEP410-T	SMD TH	8	1.95 : 1	1.5mH ±6%	12	45	1.55/0.90	-80dB 100kHz	-50dB 30kHz-1.1MHz	0.5dB 300kHz	0.5dB 30kHz-1.1MHz	
AEP500-S	SMD	3	2 : 1	435µH ±6%	10	40	1.30/1.50	-80dB 100kHz	-40dB 25kHz-1.1MHz	0.5dB 722kHz	0.5dB 30kHz-1.1MHz	
AEP510-T AEP510-S	TH SMD	3	1.4 : 1	441µH ±6%	6	40	1.05/0.85	-70dB 200kHz	-60dB 20kHz-1.1MHz	0.5dB 722kHz	1.0dB 150kHz-1.5MHz	1500
AEP520-T AEP520-S	TH SMD	2	1 : 1	407µH ±6%	10	40	1.40/1.20	-85dB 100kHz	-50dB 30kHz-1.1MHz	0.5dB 722kHz	3.0dB 30kHz-2.0MHz	
AEP530-T AEP530-S	TH SMD	7 3	1 : 1	407µH ±6%	10	40	1.40/1.20	-85dB 100kHz	-50dB 30kHz-1.1MHz	0.5dB 722kHz	3.0dB 30kHz-2.0MHz	
AEP540-T AEP540-S	TH SMD	2	1 : 1.4	483µH ±10%	10	50	1.30/2.45	-85dB 100kHz	-50dB 30kHz-1.1MHz	0.5dB 722kHz	3.0dB 30kHz-2.0MHz	
AEP550-T AEP550-S	TH SMD	6	1.41 : 1	474µH ±10%	12	40	1.10/0.85	-80dB 100kHz	-50dB 30kHz-1.1MHz	1.0dB 722kHz	0.5dB 100kHz-1.1MHz	
AEP560-S	SMD	6	2 : 1	440µH ±5%	6	40	1.90/0.95	-80dB 100kHz	-50dB 30kHz-1.1MHz	1.0dB 722kHz	0.5dB 100kHz-1.1MHz	1500
AEP600-T	TH	3	1 : 1	1.23mH ±6%	10	40	1.40/1.60	-80dB 100kHz	-50dB 30kHz-1.1MHz	0.5dB 300kHz	0.5dB 30kHz-1.1MHz	
AEP610-T	TH	3	1 : 1	490µH ±6%	10	40	1.35/1.50	-80dB 100kHz	-50dB 30kHz-1.1MHz	0.5dB 300kHz	0.5dB 30kHz-1.1MHz	
AEP700-T AEP700-S	TH SMD	2 3	1 : 1	462µH ±6%	10	50	1.35/1.55	-80dB 30kHz	-40dB 20kHz-1.1MHz	0.5dB 772kHz	1.25dB 30kHz-1.1MHz	
AEP800-T AEP800-S	TH SMD	9	2 : 1	2.0mH ±6%	12	60	2.50/1.30	-80dB 100kHz	-40dB 30kHz-1.1MHz	0.5dB 100kHz	0.5dB 30kHz-1.1MHz	
AEP900-T AEP900-S	TH SMD	3	2 : 1	410µH ±10%	8	60	0.90/0.50	-80dB 100kHz	-40dB 25kHz-1MHz	0.5dB 100kHz	1.0dB 30kHz-1.1MHz	1500
AEP910-T AEP910-S	TH SMD	3	1 : 1	410µH ±10%	8	60	0.90/1.00	-80dB 100kHz	-40dB 25kHz-1MHz	0.5dB 100kHz	1.0dB 30kHz-1.1MHz	
AEP1000-T AEP1000-S	TH SMD	2	1 : 1	462µH ±10%	5	60	1.30/1.30	-67dB 10kHz	-50dB 10kHz-1.1MHz	0.5dB 100kHz	1.0dB 30kHz-1.1MHz	1500
AEP1010-T AEP1010-S	TH SMD	2	1.8 : 1	462µH ±10%	10	70	1.39/0.90	-67dB 10kHz	-50dB 10kHz-1.1MHz	0.5dB 100kHz	1.0dB 30kHz-1.1MHz	
AEP1020-S	SMD	10	1 : 1.1	364µH ±5%	11	60	2.10/2.20	-67dB 10kHz	-45dB 20kHz-1.1MHz	1.5dB 500kHz	1.0dB 40kHz-1.1MHz	
AEP1100-T AEP1100-S	TH SMD	6 5	2 : 1	800µH ±10%	10	50	1.48/0.77	-80dB 100kHz	-40dB 25kHz-1MHz	0.5dB 100kHz	1.0dB 30kHz-1.1MHz	1500

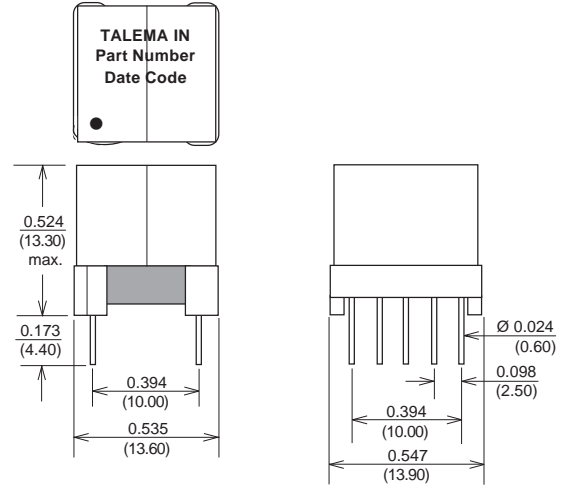
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## Packaging and Dimensions • EP13 Style ADSL Transformers

### SMD Package "S"



### TH Package "T"

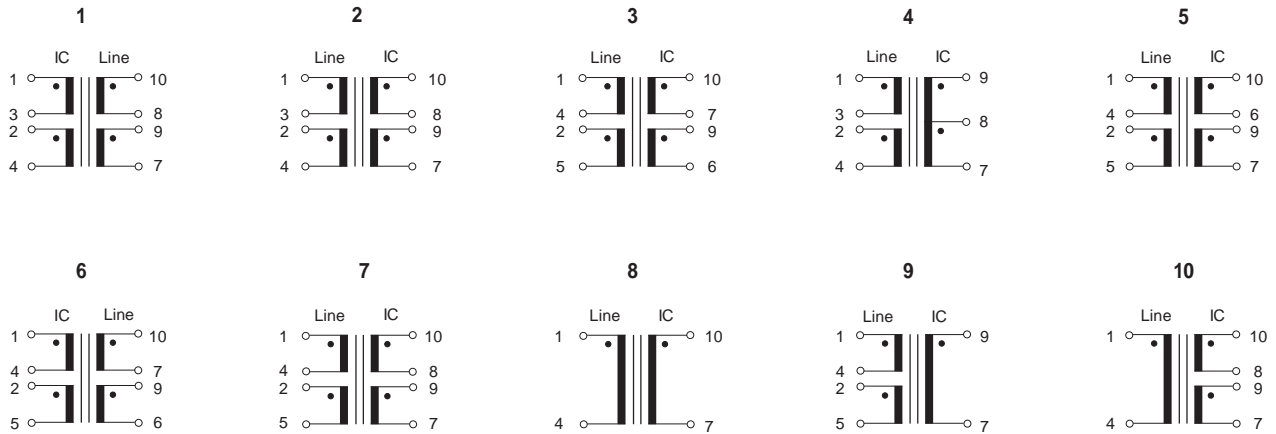


Note: Pin #3 will be removed on the following parts:  
 AEP330-S & T  
 AEP550-S & T  
 AEP1020-S  
 AEP1100-S & T

Dimensions: Inches (Millimeters)  
 Tolerance:  $\pm 0.010$  (0.25)

Weight: 6.8 grams

### Schematics



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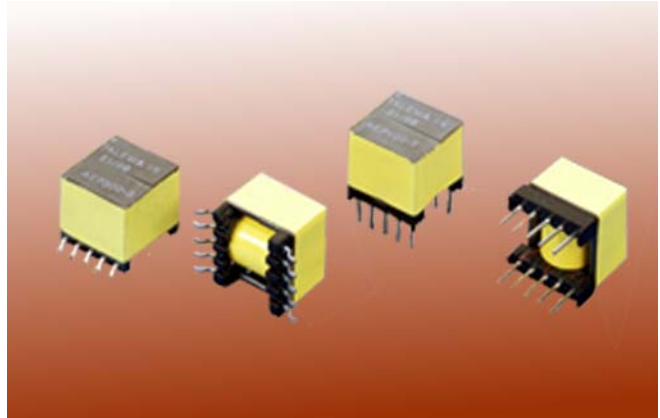
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## ADSL Transformers for Alcatel Chipsets

### Features

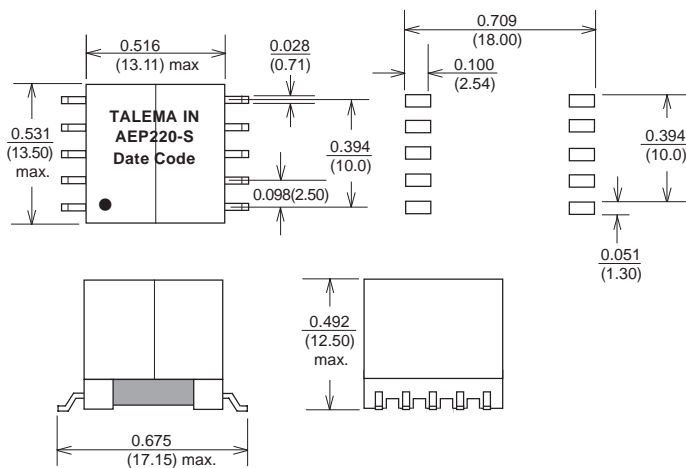
- complies with ANSI and ETSI requirements
- matched to Alcatel's MTK-20130, MTK-20131, MTK-20140, MTK-20141, MTK-20150, MTK-20152 & MTK-20450 chipsets
- very low THD
- 1500V minimum isolation
- all materials approved to UL94V-0
- excellent quality at competitive price due to high volume production
- manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- fully RoHS compliant and meets lead free reflow level J-STD-020C



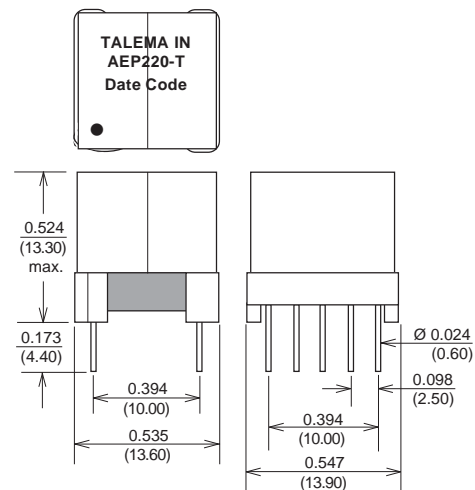
### Electrical Specifications @ 25°C • Operating Temperature -40° to +85°C

Part Number	Package	IC	Driver	Turns Ratio ±2% Line : IC	L <sub>P</sub> (μH) ±10%	L <sub>L</sub> (μH) Max	C <sub>WW</sub> (pF) Max	DCR (Ohms) Max Line / IC	THD (Linearity) Typical	Longitudinal Balance Min	Insertion Loss Max	Freq. Response Max	Isolation Voltage (Vrms)
AEP210-T AEP210-S	TH SMD	MTK20130/140/150 CO MTK20450 CO/CPE		2 : 1	410	8	50	0.90 / 0.50	-72dB 20kHz	-40dB 30kHz-1.1MHz	1.0dB 100kHz - 1.1MHz	1.5dB 30kHz - 1.1MHz	1500
AEP220-T AEP220-S	TH SMD	MTK20130/ 140/141/150/152 CPE		1 : 1	480	5	50	1.25 / 1.35	-72dB 10kHz	-40dB 30kHz-1.1MHz	1.0dB 100kHz - 1.1MHz	1.5dB 30kHz - 1.1MHz	1500
AEP230-T AEP230-S	TH SMD	MTK20130/140/150 CO MTK20450 CO/CPE		2 : 1	410	8	50	0.90 / 0.50	-72dB 20kHz	-40dB 30kHz-1.1MHz	1.0dB 100kHz - 1.1MHz	1.5dB 30kHz - 1.1MHz	1500

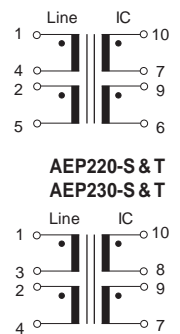
### Package "S"



### Package "T"



### Schematic



Dimensions: Inches(Millimeters)  
 Tolerance: ±0.010 (0.25)

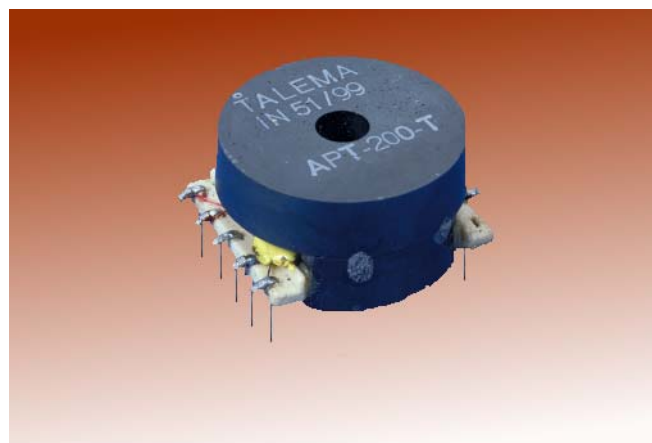
Weight: 6.8 grams



## ADSL Transformer for Alcatel Chip Sets

### Features

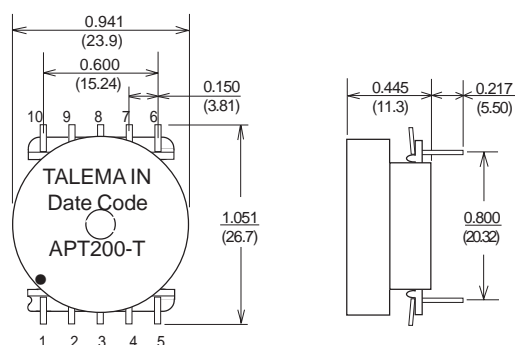
- complies with ANSI and ETSI requirements
- matched to Alcatel's MTK-20131 chipset
- very low THD
- 2000V minimum isolation
- all materials approved to UL94V-0
- excellent quality at competitive price due to high volume production
- manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- fully RoHS compliant



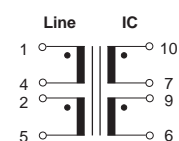
### Electrical Specifications @ 25°C • Operating Temperature -40° to +85°C

Part Number	IC Driver	Turns Ratio ±2% Line : IC	L <sub>p</sub> (μH) ±5%	L <sub>L</sub> (μH) Max	DCR (Ohms Max) Line / IC	THD (Linearity) Typical	Frequency Response Max	Isolation Voltage (Vrms)
APT200-T	MTK-20131 CPE	1:1	440	15	0.30 / 1.20	-70dB 40kHz	3dB 40kHz - 2MHz	2000

### Package and Outline



### Schematic



Dimensions: Inches (Millimeters)  
Tolerance: ±0.010 (0.25)

Weight: 18.0 grams

## Sales & Marketing, Design and Manufacturing Facilities

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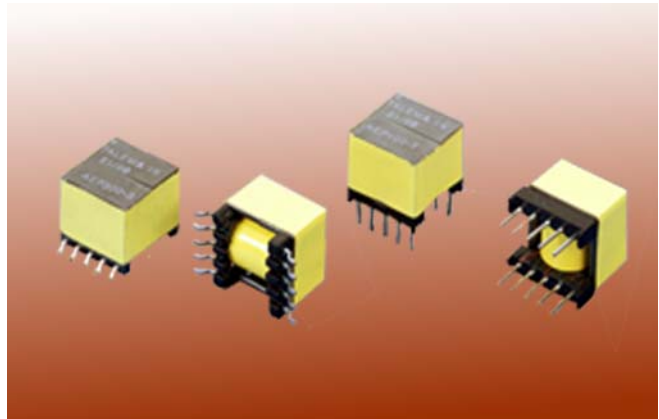
**India**  
TALEMA ELECTRONIC PVT. LTD.  
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Gins Towers  
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Salem - 636 004, Tamil Nadu  
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Web Site: [www.talemaindia.com](http://www.talemaindia.com)



## ADSL Transformers for Analog Devices Chipsets

### Features

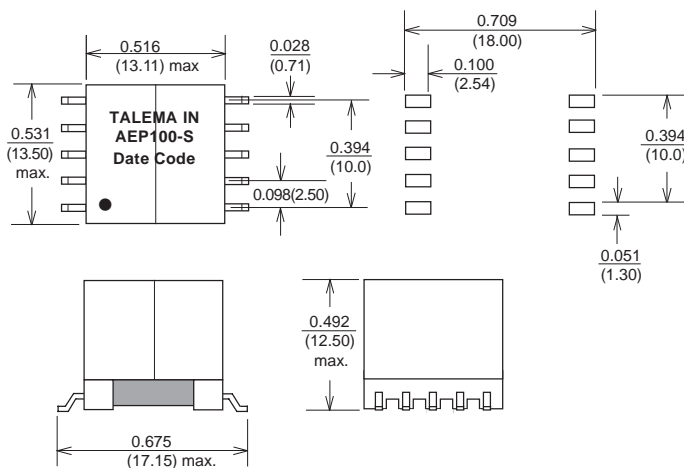
- complies with ANSI and ETSI requirements
- matched to Analog Devices AD20MSP910, AD20MSP918 and AD20MSP930 chipsets
- very low THD
- 1500V minimum isolation
- all materials approved to UL94V-0
- excellent quality at competitive price due to high volume production
- manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- fully RoHS compliant and meets lead free reflow level J-STD-020C



### Electrical Specifications @ 25°C • Operating Temperature -40° to +85°C

Part Number	Package	IC Driver	Turns Ratio $\pm 2\%$ Line : IC	$L_p$ (mH)	$L_L$ ( $\mu$ H) Max	$C_{wv}$ (pF) Max	DCR (Ohms) Max Line / IC	THD (Linearity) Typical	Longitudinal Balance Min	Insertion Loss Max	Frequency Response Max	Isolation Voltage (Vrms)
AEP100-T	TH	AD20MSP910 CO/CPE	1 : 1	5.0	25	60	3.00 / 3.00	-80dB 30kHz	-46dB 10kHz-1.1MHz	0.5dB 300kHz	1.0dB 30kHz -1.1MHz	1500
AEP100-S	SMD	AD20MSP918 CO/CPE	1 : 1	$5.0 \pm 10\%$	25	60	3.00 / 3.00	-80dB 30kHz	-46dB 10kHz-1.1MHz	0.5dB 300kHz	1.0dB 30kHz -1.1MHz	1500
AEP110-T	TH	AD20MSP918 CO	1.27 : 1	3.22	7.5	50	2.45 / 2.00	-80dB 30kHz	-50dB 30kHz-1.1MHz	0.5dB 100kHz	1.0dB 30kHz -1.1MHz	1500
AEP110-S	SMD	AD20MSP918 CO	1.27 : 1	$3.22 \pm 10\%$	7.5	50	2.45 / 2.00	-80dB 30kHz	-50dB 30kHz-1.1MHz	0.5dB 100kHz	1.0dB 30kHz -1.1MHz	1500
AEP120-T	TH	AD20MSP930 CO	1.11 : 1	2.03 Min.	10	60	1.30 / 1.50	-80dB 30kHz	-50dB 30kHz-1.1MHz	0.5dB 100kHz	1.0dB 30kHz -1.1MHz	1500
AEP120-S	SMD	AD20MSP930 CO	1.11 : 1	2.03 Min.	10	60	1.30 / 1.50	-80dB 30kHz	-50dB 30kHz-1.1MHz	0.5dB 100kHz	1.0dB 30kHz -1.1MHz	1500
AEP130-T	TH	AD20MSP930 CPE	1.2 : 1	2.42 Min.	10	50	1.30 / 1.50	-80dB 30kHz	-50dB 30kHz-1.1MHz	0.5dB 100kHz	1.0dB 30kHz -1.1MHz	1500
AEP130-S	SMD	AD20MSP930 CPE	1.2 : 1	2.42 Min.	10	50	1.30 / 1.50	-80dB 30kHz	-50dB 30kHz-1.1MHz	0.5dB 100kHz	1.0dB 30kHz -1.1MHz	1500
AEP140-T	TH	AD20MSP910 CO/CPE	1 : 1	5.0	25	60	3.0 / 3.0	-80dB 30kHz	-40dB 30kHz-1.1MHz	0.5dB 100kHz	1.0dB 30kHz -1.1MHz	1500
AEP140-S	SMD	AD20MSP918 CO/CPE	1 : 1	$5.0 \pm 10\%$	25	60	3.0 / 3.0	-80dB 30kHz	-40dB 30kHz-1.1MHz	0.5dB 100kHz	1.0dB 30kHz -1.1MHz	1500

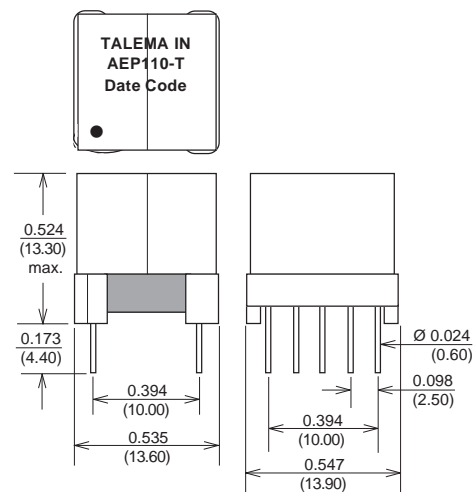
### Package "S"



Dimensions: Inches(Millimeters)  
Tolerance:  $\pm 0.010$  (0.25)

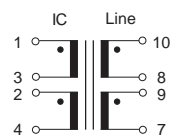
Weight: 6.8 grams

### Package "T"

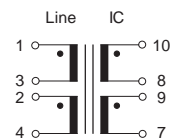


### Schematic

#### AEP100, AEP110 AEP120, AEP130



#### AEP140

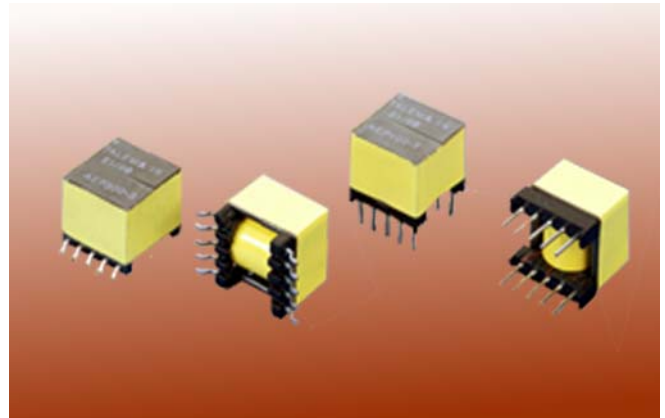




## ADSL Transformers for Centillium Chipsets

### Features

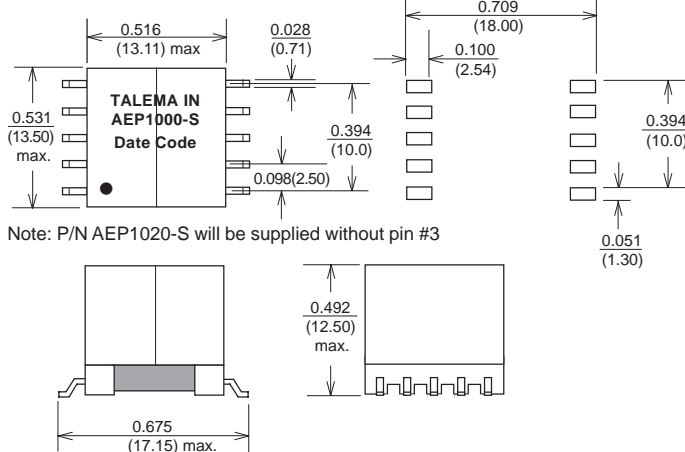
- complies with ANSI and ETSI requirements
- matched to Centillium CT-L21SC08, CT-L41SC04, CT-L50SC04, CT-L50ST81 & CR-L10AT01-1T chipsets
- very low THD
- 1500V minimum isolation
- all materials approved to UL-94V-0
- excellent quality at competitive price due to high volume production
- manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- fully RoHS compliant and meets lead free reflow level J-STD-020C



### Electrical Specifications @ 25°C • Operating Temperature -40° to +85°C

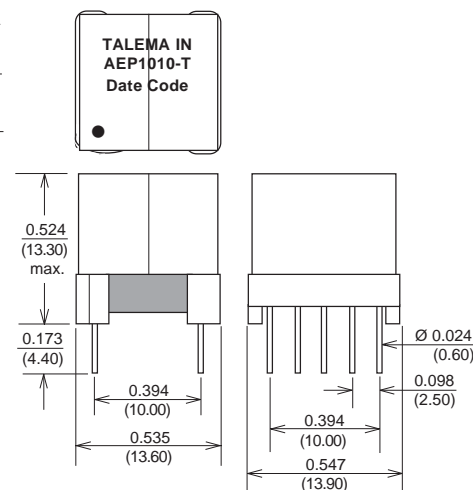
Part Number	Package	IC Driver	Turns Ratio ±2% Line : IC	L <sub>p</sub> (µH)	L <sub>L</sub> (µH) Max	C <sub>ww</sub> (pF) Max	DCR (Ohms) Max Line / IC	THD (Linearity) Typical	Longitudinal Balance Min	Insertion Loss Max	Freq. Response Max	Isolation Voltage (Vrms)
AEP1000-T AEP1000-S	TH SMD	CT-L21SC08 CO CT-L41SC04 CO	1 : 1	462 ±10%	5	60	1.30 / 1.30	-67dB 10kHz	-50dB 10kHz - 1.1MHz	0.5dB 100kHz	1.0dB 30kHz-1.1MHz	1500
AEP1010-T AEP1010-S	TH SMD	CT-L50SC04 CO/CPE CT-L50ST81 CO/CPE	1.8 : 1	462 ±10%	10	70	1.30 / 0.90	-67dB 10kHz	-50dB 10kHz - 1.1MHz	0.5dB 100kHz	1.0dB 30kHz-1.1MHz	1500
AEP1020-S	SMD	CT-L10AT01-1T	1 : 1.1	364 ±5%	11	60	2.10 / 2.20	-67dB 10kHz	-45dB 20kHz - 1.1MHz	1.5dB 50kHz	1.0dB 40kHz-1.1MHz	1500

#### Package "S"



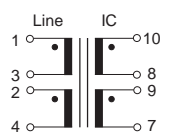
Note: P/N AEP1020-S will be supplied without pin #3

#### Package "T"

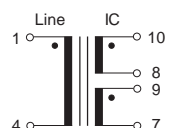


#### Schematic

AEP1000-S & T  
AEP1010-S & T



AEP-1020-S



Dimensions: Inches(Millimeters)  
Tolerance: ±0.010 (0.25)

Weight: 6.8 grams

## Sales & Marketing, Design and Manufacturing Facilities

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### India

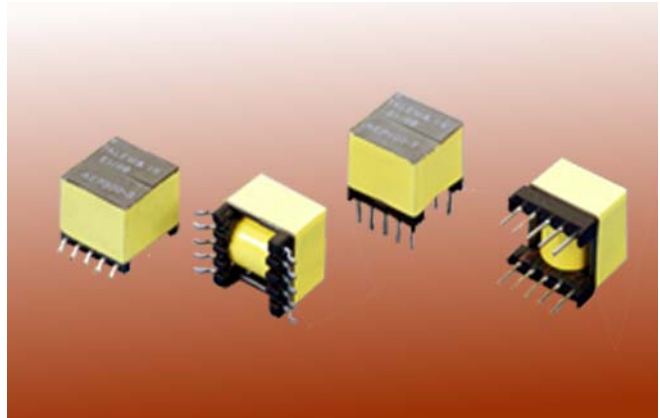
TALEMA ELECTRONIC PVT. LTD.  
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Tel: Int. + 91 427 - 244 1325  
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Web Site: [www.talemaindia.com](http://www.talemaindia.com)



## ADSL Transformers for Conexant Chipsets

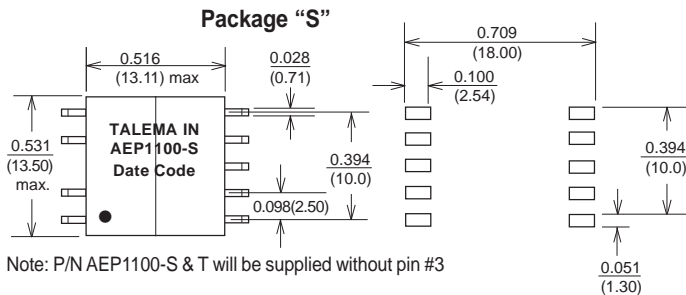
### Features

- complies with ANSI and ETSI requirements
- matched to Conexant's 328R58-001 & 328R57-001 chipsets
- very low THD
- 1500V minimum isolation
- all materials approved to UL94V-0
- excellent quality at competitive price due to high volume production
- manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- fully RoHS compliant and meets lead free reflow level J-STD-020C

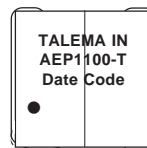


### Electrical Specifications @ 25°C • Operating Temperature -40° to +85°C

Part Number	Package	IC Driver	Turns Ratio ±2% Line : IC	L <sub>p</sub> (μH) ±10%	L <sub>L</sub> (μH) Max	C <sub>ww</sub> (pF) Max	DCR (Ohms) Max Line / IC	THD (Linearity) Typical	Longitudinal Balance Min	Insertion Loss Max	Frequency Response Max	Isolation Voltage (Vrms)
AEP1100-T	TH	328R58-001 CO/CPE	2 : 1	800	10	50	1.48 / 0.77	-80dB 100kHz	-40dB 25kHz-1MHz	0.5dB 100kHz	1.0dB 30kHz- 1.1MHz	1500
AEP1100-S	SMD	328R57-001 CO/CPE										

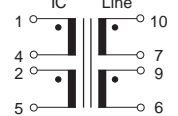


### Package "T"

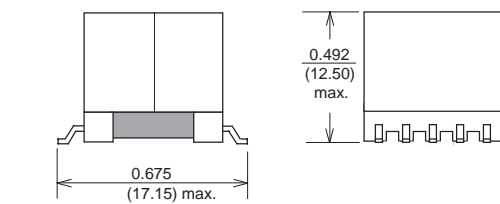
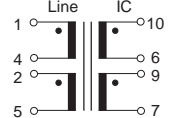


### Schematic

#### AEP1100-T

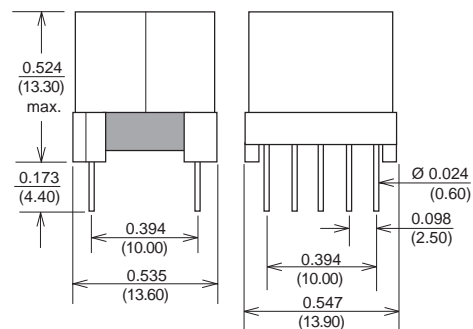


#### AEP1100-S



Dimensions: Inches(Millimeters)  
Tolerance: ±0.010 (0.25)

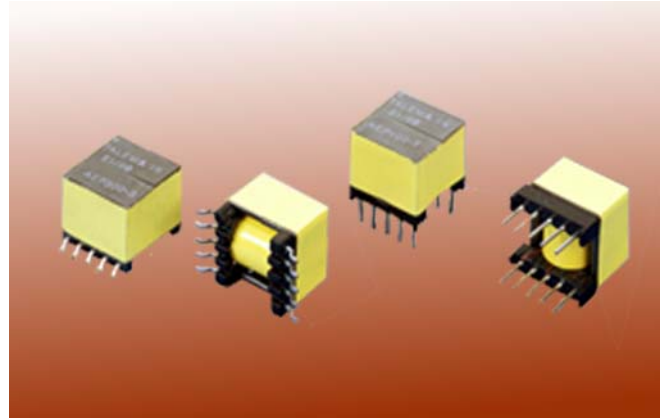
Weight: 6.8 grams



## ADSL Transformers for Fujitsu Chipsets

### Features

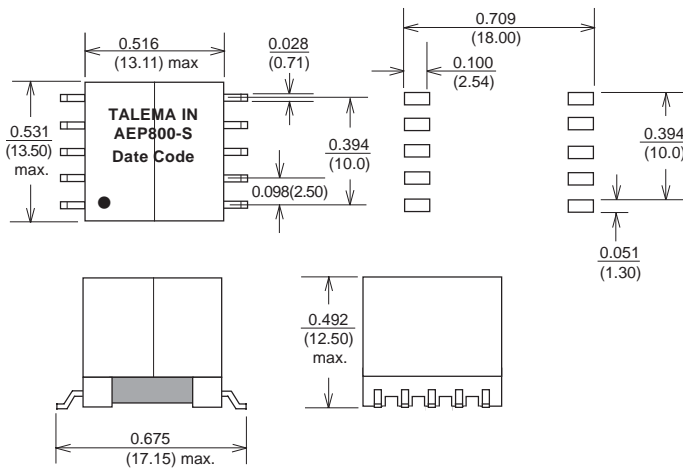
- complies with ANSI and ETSI requirements
- matched to Fujitsu's Keywave MB86670 chipsets
- very low THD
- 1500V minimum isolation
- all materials approved to UL94V-0
- excellent quality at competitive price due to high volume production
- manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- fully RoHS compliant and meets lead free reflow level J-STD-020C



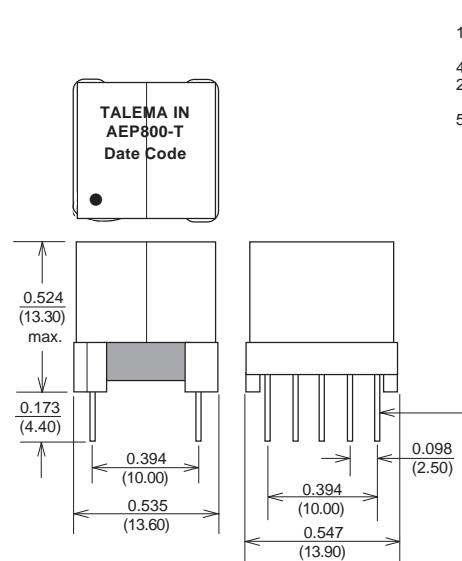
### Electrical Specifications @ 25°C • Operating Temperature -40° to +85°C

Part Number	Package	IC Driver	Turns Ratio ±2% Line : IC	L <sub>p</sub> (mH) ±6%	L <sub>L</sub> (µH) Max	C <sub>ww</sub> (pF) Max	DCR (Ohms) Max Line / IC	THD (Linearity) Typical	Longitudinal Balance Min	Insertion Loss Max	Frequency Response Max	Isolation Voltage (Vrms)
AEP800-T	TH	MB86670	2 : 1	2.0	12	60	2.50 / 1.30	-80dB 100kHz	-40dB 30kHz-1.1MHz	0.5dB 100kHz	0.5dB 30kHz-1.1MHz	1500
AEP800-S	SMD	CO										

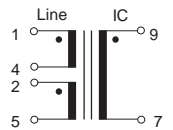
#### Package "S"



#### Package "T"



#### Schematic



Dimensions: Inches(Millimeters)  
Tolerance: ±0.010 (0.25)

Weight: 6.8 grams

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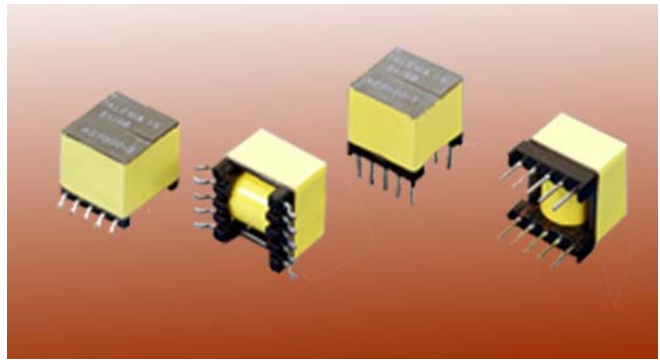
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Web Site: [www.talemaindia.com](http://www.talemaindia.com)



## ADSL Transformers for Globespan Chipsets

### Features

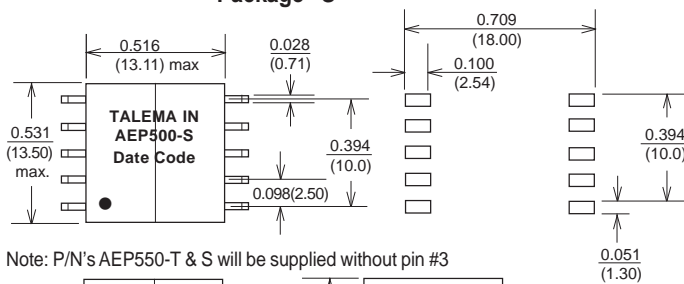
- complies with ANSI and ETSI requirements
- matched to Globespan's DMT G7000, EL-1501, G7266 and G7266RT chipsets
- very low THD
- 1500V minimum isolation
- all materials approved to UL94V-0
- manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- fully RoHS compliant and meets lead free reflow level J-STD-020C



### Electrical Specifications @ 25°C • Operating Temperature -40° to +85°C

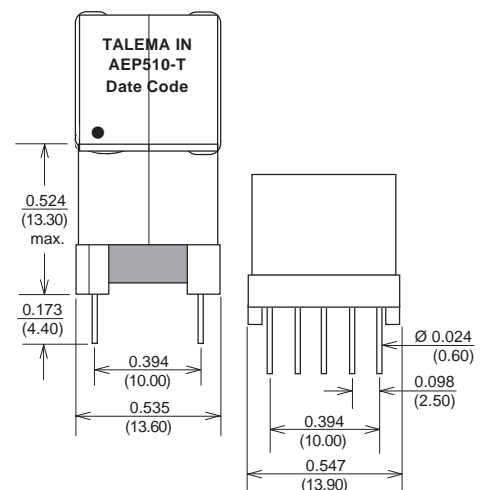
Part Number	Package	IC Driver	Turns Ratio $\pm 2\%$ Line : IC	$L_p$ ( $\mu H$ )	$L_L$ ( $\mu H$ ) Max	$C_{ww}$ (pF) Max	DCR (Ohms) Max Line / IC	THD (Linearity) Typical	Longitudinal Balance Min	Insertion Loss Max	Freq. Response Max	Isolation Voltage (Vrms)
AEP500-S	SMD	G7000 CPE	2 : 1	435 $\pm 6\%$	10	40	1.30 / 1.50	-80dB 100kHz	-40dB 20kHz-1.1MHz	0.5dB 722kHz	0.5dB 30kHz-1.1MHz	1500
AEP510-T AEP510-S	TH SMD	G7000 CO	1.4 : 1	441 $\pm 6\%$	6	40	1.05 / 0.85	-70dB 200kHz	-60dB 20kHz-1.1MHz	0.5dB 722kHz	1.0dB 150kHz-1.5MHz	1500
AEP520-T AEP520-S	TH SMD	EL-1501 CPE	1 : 1	407 $\pm 6\%$	10	40	1.40 / 1.20	-85dB 100kHz	-50dB 30kHz-1.1MHz	0.5dB 722kHz	3.0dB 30kHz-2.0MHz	1500
AEP530-T AEP530-S	TH SMD	EL-1501 CPE	1 : 1	407 $\pm 6\%$	10	40	1.40 / 1.20	-85dB 100kHz	-50dB 30kHz-1.1MHz	0.5dB 722kHz	3.0dB 30kHz-2.0MHz	1500
AEP540-T AEP540-S	TH SMD	EL-1501 CO	1 : 1.4	483 $\pm 10\%$	10	50	1.30 / 2.45	-85dB 100kHz	-50dB 30kHz-1.1MHz	0.5dB 722kHz	3.0dB 30kHz-2.0MHz	1500
AEP550-T AEP550-S	TH SMD	G7266 CO	1.41 : 1	474 $\pm 10\%$	12	40	1.10 / 0.85	-80dB 100kHz	-50dB 30kHz-1.1MHz	1.0dB 722kHz	0.5dB 100kHz-1.1MHz	1500
AEP560-S	SMD	G7266RT	2 : 1	440 $\pm 5\%$	6	40	1.90 / 0.95	-80dB 100kHz	-50dB 30kHz-1.1MHz	1.0dB 722kHz	0.5dB 100kHz-1.1MHz	1500
AEP570-S	SMD	Nova	2 : 1	100 $\pm 5\%$	12	50	1.04 / 0.48	-90dB 50kHz	50dB 20kHz-1.1MHz	1.0dB 500kHz	0.5dB 100kHz-1.1MHz	1500

#### Package "S"

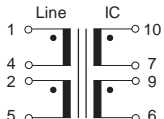


Note: P/N's AEP550-T & S will be supplied without pin #3

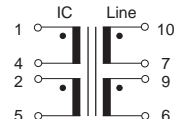
#### Package "T"



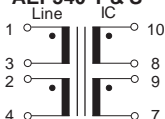
**AEP500-S**  
**AEP510-T & S**  
**AEP530-S**  
**AEP570-S**



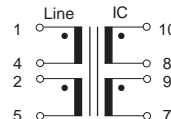
**AEP550-T & S**  
**AEP560-S**



**AEP520-T & S**  
**AEP540-T & S**



**AEP530-T**



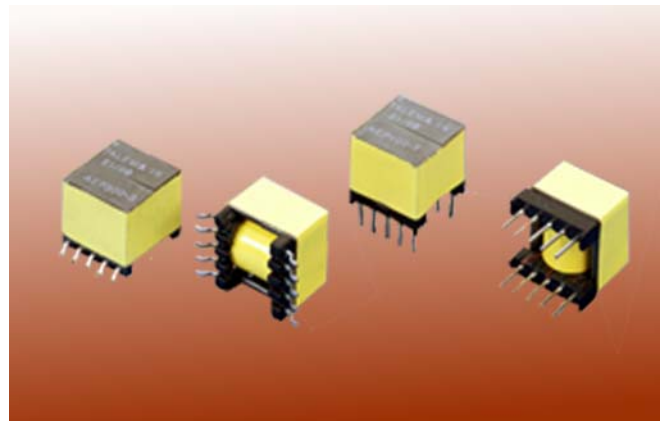
Dimensions: Inches (Millimeters)  
Tolerance:  $\pm 0.010$  (0.25)

Weight: 6.8 grams

## ADSL Transformers for ITEX Chipsets

### Features

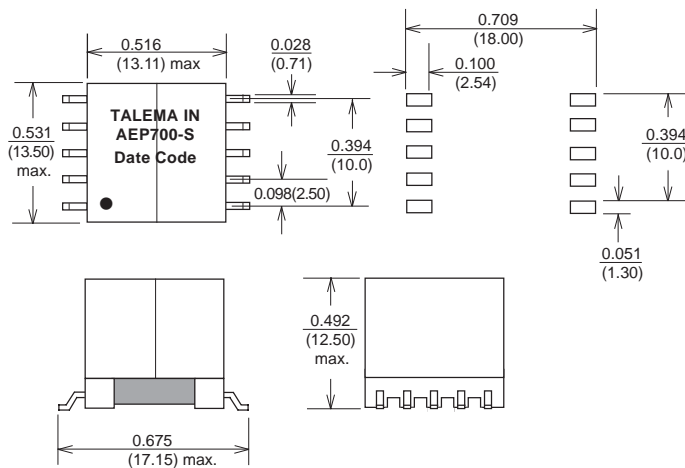
- complies with ANSI and ETSI requirements
- matched to ITEX's i80134 & i80234 chipsets
- very low THD
- 1500V minimum isolation
- all materials approved to UL94V-0
- excellent quality at competitive price due to high volume production
- manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- fully RoHS compliant and meets lead free reflow level J-STD-020C



### Electrical Specifications @ 25°C • Operating Temperature -40° to +85°C

Part Number	Package	IC Driver	Turns Ratio ±2% Line : IC	L <sub>P</sub> (μH) ±6%	L <sub>L</sub> (μH) Max	C <sub>ww</sub> (pF) Max	DCR (Ohms) Max Line / IC	THD (Linearity) Typical	Longitudinal Balance Min	Insertion Loss Max	Freq. Response Max	Isolation Voltage (Vrms)
AEP700-T	TH	i80134 CPE	1 : 1	462	10	50	1.35 / 1.55	-80dB 30kHz	-40dB 20kHz-1.1MHz	0.5dB 772kHz	1.25dB 30kHz-1.1MHz	1500
AEP700-S	SMD	i80234 CPE	1 : 1	462	10	50	1.35 / 1.55	-80dB 30kHz	-40dB 20kHz-1.1MHz	0.5dB 772kHz	1.25dB 30kHz-1.1MHz	1500

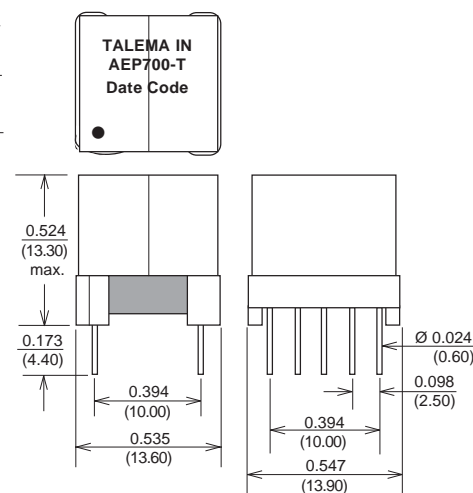
#### Package "S"



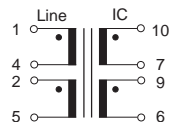
Dimensions: Inches(Millimeters)  
Tolerance: ±0.010 (0.25)

Weight: 6.8 grams

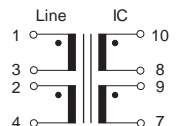
#### Package "T"



#### Schematic AEP700-S



#### AEP700T



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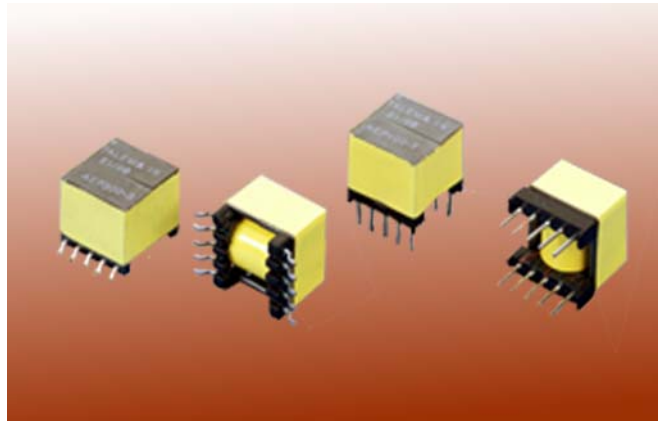
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## ADSL Transformers for Legerity (AMD) Chipsets

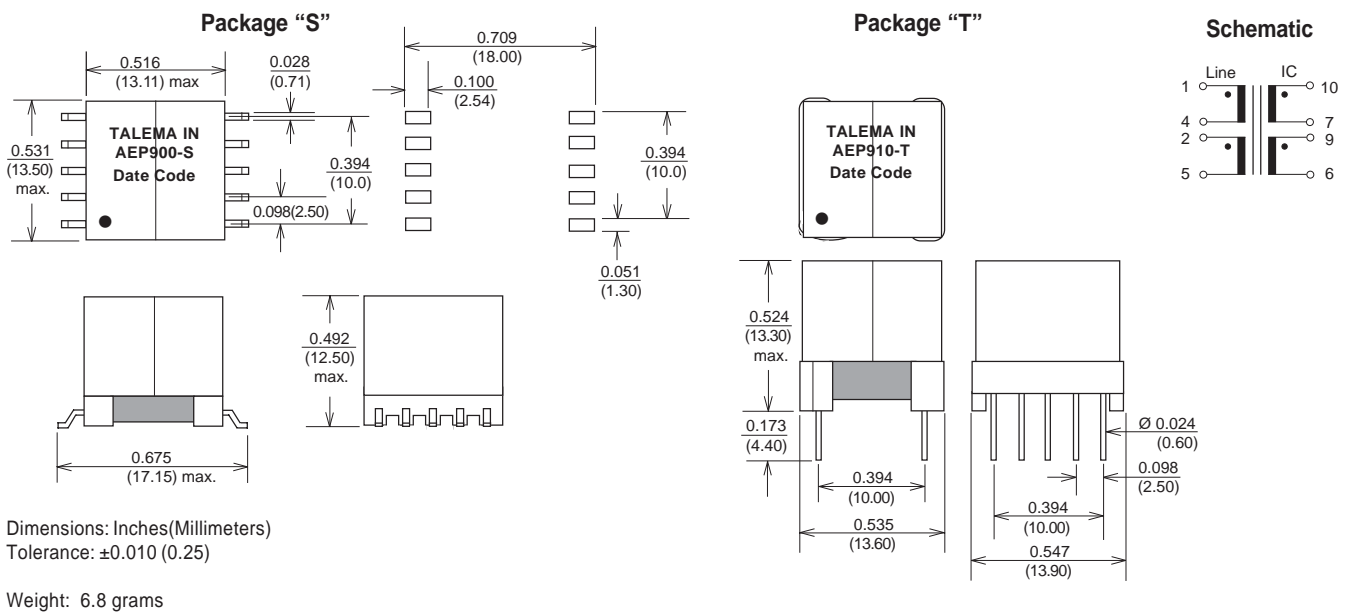
### Features

- complies with ANSI and ETSI requirements
- matched to Legerity's AMDSL134 chipsets
- very low THD
- 1500V minimum isolation
- all materials approved to UL94V-0
- excellent quality at competitive price due to high volume production
- manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- fully RoHS compliant and meets lead free reflow level J-STD-020C



### Electrical Specifications @ 25°C • Operating Temperature -40° to +85°C

Part Number	Package	IC Driver	Turns Ratio ±2% Line : IC	L <sub>P</sub> (μH) ±10%	L <sub>L</sub> (μH) Max	C <sub>ww</sub> (pF) Max	DCR (Ohms) Max Line / IC	THD (Linearity) Typical 100kHz	Longitudinal Balance Min 25kHz - 1MHz	Insertion Loss Max 100kHz	Freq. Response Max 30kHz-1.1MHz	Isolation Voltage (Vrms)
AEP900-T AEP900-S	TH SMD	AMDSL134 CO	2 : 1	410	8	60	0.90 / 0.50	-80dB 100kHz	-40dB 25kHz - 1MHz	0.5dB 100kHz	1.0dB 30kHz-1.1MHz	1500
AEP910-T AEP910-S	TH SMD	AMDSL134 CPE	1 : 1	410	8	60	0.90 / 1.00	-80dB 100kHz	-40dB 25kHz - 1MHz	0.5dB 100kHz	1.0dB 30kHz-1.1MHz	1500

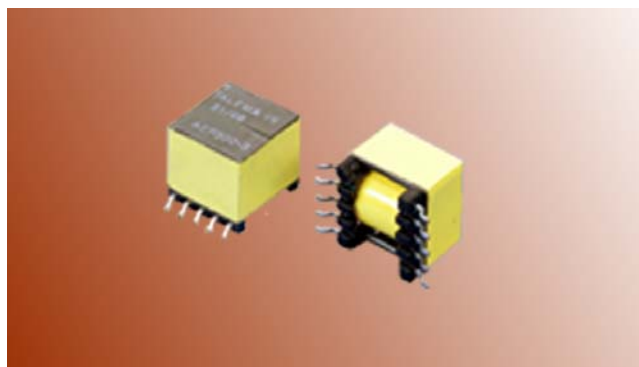




## ADSL Transformers for Linear Technology's Chipsets

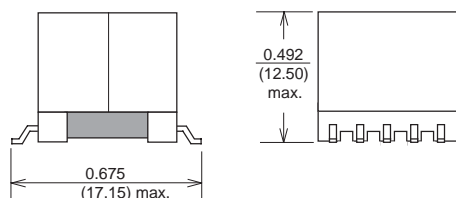
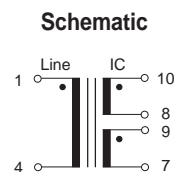
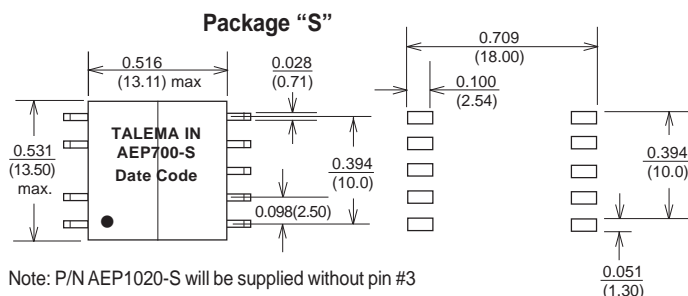
### Features

- complies with ANSI and ETSI requirements
- matched to Linear Technology's LT1497 chipsets
- very low THD
- 1500V minimum isolation
- all materials approved to UL94V-0
- excellent quality at competitive price due to high volume production
- manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- fully RoHS compliant and meets lead free reflow level J-STD-020C



### Electrical Specifications @ 25°C • Operating Temperature -40° to +85°C

Part Number	Package	IC Driver	Turns Ratio ±2% Line : IC	L <sub>P</sub> (µH) ±5%	L <sub>L</sub> (µH) Max	C <sub>WV</sub> (pF) Max	DCR (Ohms) Max Line / IC	THD (Linearity) Typical	Longitudinal Balance Min	Insertion Loss Max	Freq. Response Max	Isolation Voltage (Vrms)
AEP1020-S	SMD	LT1497	1 : 1.1	364	11	60	2.10 / 2.20	-67dB 10kHz	-45dB 20kHz-1.1MHz	1.5dB 50kHz	1.0dB 40kHz-1.1MHz	1500



Dimensions: Inches(Millimeters)  
Tolerance: ±0.010 (0.25)

Weight: 6.8 grams

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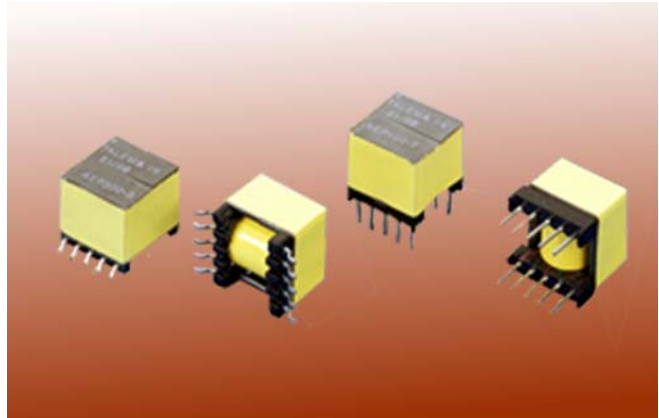
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## ADSL Transformers for Lucent Chipsets

### Features

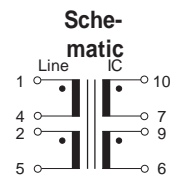
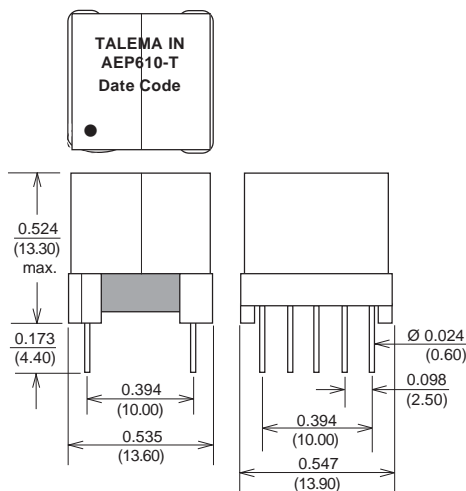
- complies with ANSI and ETSI requirements
- matched to Lucent's Wildwire chipsets
- very low THD
- 1500V minimum isolation
- all materials approved to UL94V-0
- excellent quality at competitive price due to high volume production
- manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- fully RoHS compliant and meets lead free reflow level J-STD-020C



### Electrical Specifications @ 25°C • Operating Temperature -40° to +85°C

Part Number	Package	IC Driver	Turns Ratio ±2% Line : IC	L <sub>p</sub> ±6%	L <sub>L</sub> (μH) Max	C <sub>ww</sub> (pF) Max	DCR (Ohms) Max Line / IC	THD (Linearity) Typical	Longitudinal Balance Min	Insertion Loss Max	Freq. Response Max	Isolation Voltage (Vrms)
AEP600-T	TH	Wildwire CPE	1 : 1	1.23mH	10	40	1.40 / 1.60	-80dB 100kHz	-50dB 30kHz - 1.1MHz	0.5dB 300kHz	0.5dB 30kHz-1.1MHz	1500
AEP610-T	TH	Wildwire CO	1 : 1	490μH	10	40	1.35 / 1.50	-80dB 100kHz	-50dB 30kHz - 1.1MHz	0.5dB 300kHz	0.5dB 30kHz-1.1MHz	1500

### Package "T"



Dimensions: Inches(Millimeters)  
Tolerance: ±0.010 (0.25)

Weight: 6.8 grams

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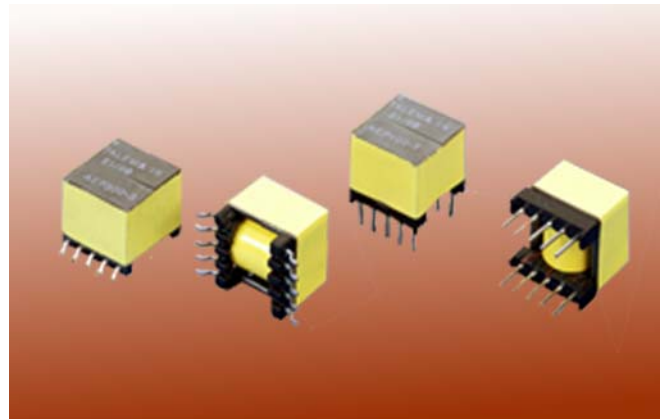
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## ADSL Transformers for Motorola's Chipsets

### Features

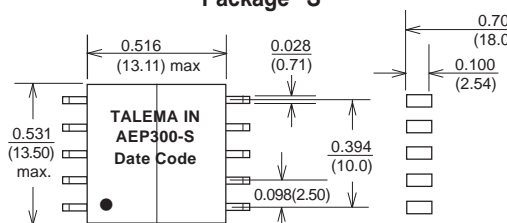
- complies with ANSI and ETSI requirements
- matched to Motorola's MC03AX1456RT, MC03AX1456, MC143460 & MC143462 chipsets
- very low THD
- 1500V minimum isolation
- all material approved to UL94V-0
- excellent quality at competitive price due to high volume production
- manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- fully RoHS compliant and meets lead free reflow level J-STD-020C



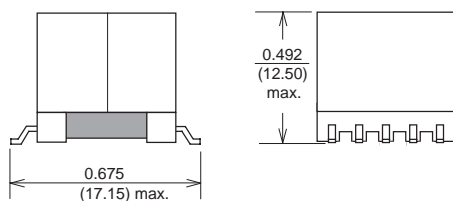
### Electrical Specifications @ 25°C • Operating Temperature -40° to +85°C

Part Number	Package	IC Driver	Turns Ratio ±2% Line : IC	L <sub>p</sub> (mH) ±5%	L <sub>L</sub> (µH) Max	C <sub>ww</sub> (pF) Max	DCR (Ohms) Max Line / IC	THD (Linearity) Typical	Longitudinal Balance Min	Insertion Loss Max	Freq. Response Max	Isolation Voltage (Vrms)
AEP300-T AEP300-S	TH SMD	MC03ZX1456RT CPE	1 : 1.8	3.96	25	50	4.40 / 8.00	-80dB 30kHz	-40dB 25kHz-1MHz	0.5dB 100kHz	0.5dB 30kHz-1.1MHz	1500
AEP310-T AEP310-S	TH SMD	MC03AX1456 CO & CPE	1.2 : 1	3.96	15	50	4.20 / 3.80	-80dB 100kHz	-40dB 25kHz-1MHz	0.5dB 100kHz	0.5dB 30kHz-1.1MHz	1500
AEP320-T AEP320-S	TH SMD	MC143460/462	1.2 : 1	3.96	15	50	2.90 / 2.50	-80dB 100kHz	-40dB 25kHz-1MHz	0.5dB 100kHz	0.5dB 30kHz-1.1MHz	1500
AEP330-T AEP330-S	TH SMD	MC0SAX1456RT CPE	1 : 1.8	3.96	25	60	4.40 / 8.00	-80dB 30kHz	-40dB 25kHz-1MHz	0.5dB 100kHz	0.5dB 30kHz-1.1MHz	1500

#### Package "S"



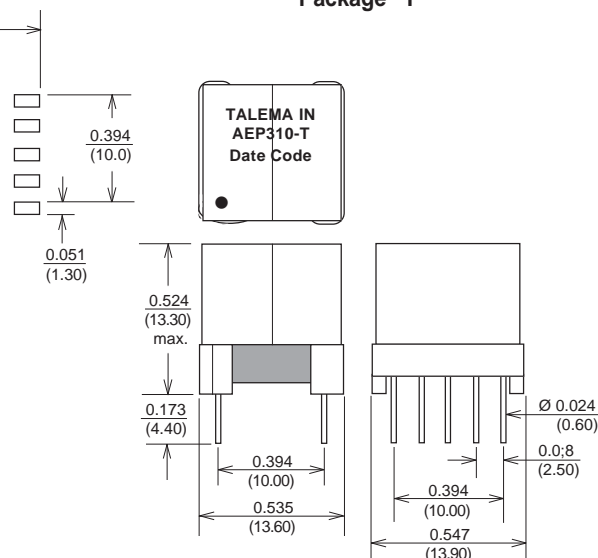
Note: P/N's AEP330-S & T will be supplied without pin #3



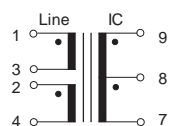
Dimensions: Inches(Millimeters)  
Tolerance: ±0.010 (0.25)

Weight: 6.8 grams

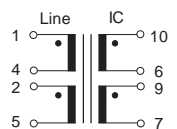
#### Package "T"



#### Schematic AEP300-T & S AEP310-T & S



#### AEP320-T & S AEP330-T & S

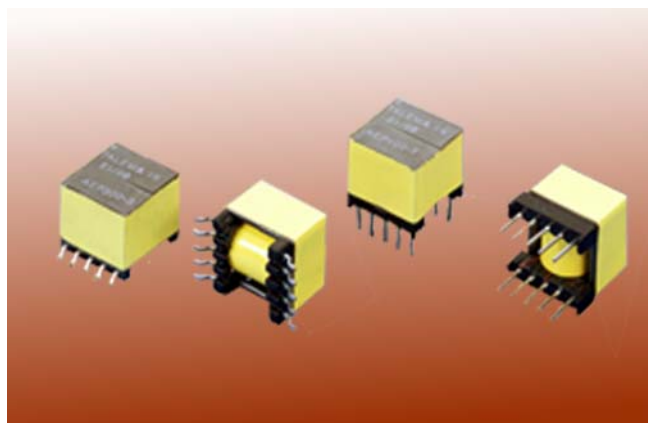




## ADSL Transformers for Texas Instrument's Chipsets

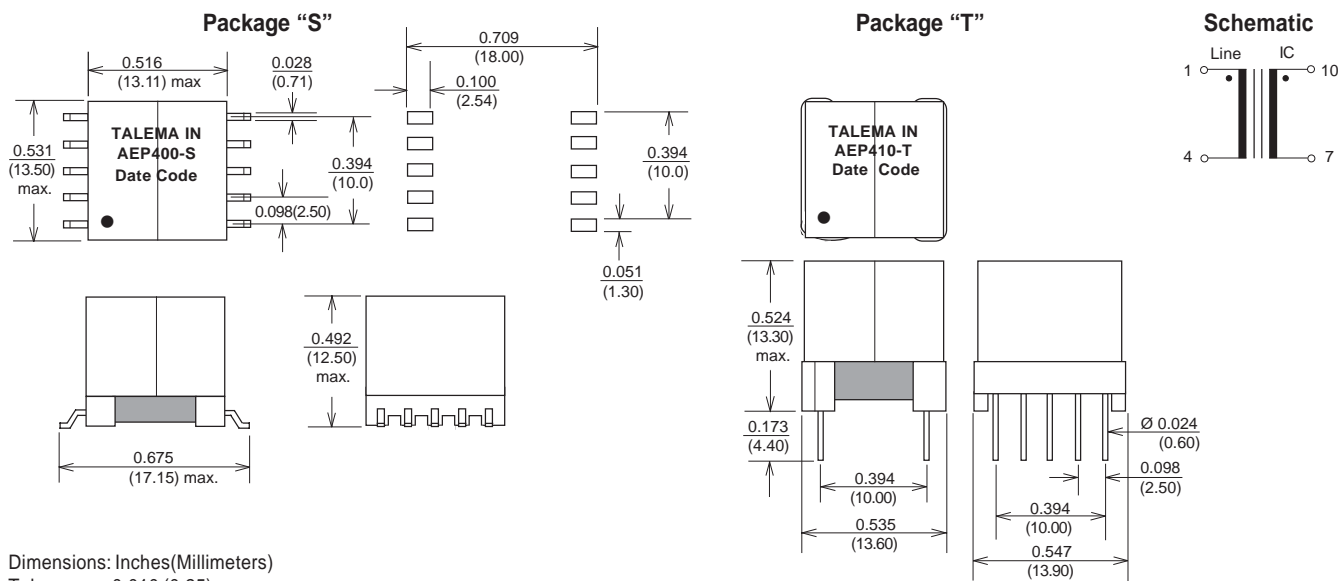
### Features

- complies with ANSI and ETSI requirements
- matched to TI's TNETD4000R, TNETD4000C/P and TNETD3000C/P chipsets
- very low THD
- 1500V minimum isolation
- all materials approved to UL94V-0
- excellent quality at competitive price due to high volume production
- manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- fully RoHS compliant and meets lead free reflow level J-STD-020C



### Electrical Specifications @ 25°C • Operating Temperature -40° to +85°C

Part Number	Package	IC Driver	Turns Ratio $\pm 2\%$ Line : IC	$L_p$ (mH) $\pm 6\%$	$L_L$ ( $\mu$ H) Max	$C_{WW}$ (pF) Max	DCR (Ohms) Max Line / IC	THD (Linearity) Typical	Longitudinal Balance Min	Insertion Loss Max	Freq. Response Max	Isolation Voltage (Vrms)
AEP400-T AEP400-S	TH SMD	TNETD4000R TNETD3000C/P	1.423 : 1	1.5	18	40	1.75 / 0.80	-80dB 100kHz	-50dB 30kHz-1.1MHz	0.5dB 300kHz	0.5dB 30kHz-1.1MHz	1500
AEP410-T AEP410-S	TH SMD	TNETD4000C/P	1.95 : 1	1.5	12	45	1.55 / 0.90	-80dB 100kHz	-50dB 30kHz-1.1MHz	0.5dB 300kHz	0.5dB 30kHz-1.1MHz	1500



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## HPT Series - HDSL Transformers

### Features

- complies with ANSI and ETSI requirements
- matched to all leading chip sets
- very low THD permits maximum loop lengths
- 1500V minimum isolation
- excellent quality at competitive price due to high volume production
- manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- fully RoHS compliant



### Transformer Selection Guide

Manufacturer	IC Type	Application	Transformer
Rockwell (Brooktree)	BT8921/BT8970	784Kbps	HPT-100A
	BT8921/BT8970	1168Kbps	HPT-110A
	BT8952	784Kbps	HPT-120A
	BT8952	1168Kbps	HPT-130A
	BT8960	416Kbps	HPT-140A
	BT8960	288Kbps	HPT-150A
Level One	SK70704/SK70706	784Kbps	HPT-170B
	SK70704/SK70721	1168Kbps	HPT-180C

### Typical Performance Data

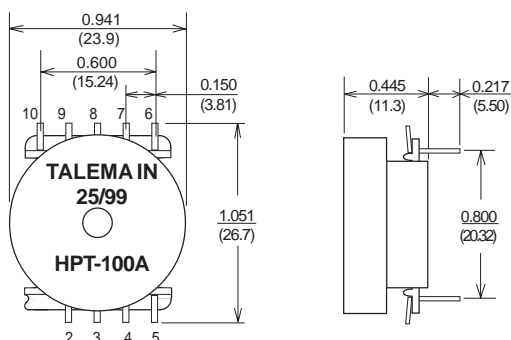
THD	-70dB max. 100kHz, 5Vpp
Longitudinal Balance	50dB min 40-300kHz
Return Loss	16.5dB min 40-300kHz
Matched to 135 Ohm Line Impedance	

### Electrical Specifications @ 25°C

Operating Temperature: -40° to +85°C

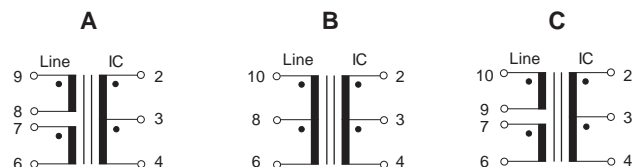
Part Number	Turns Ratio ±2% IC : Line	OCL (mH)	L <sub>L</sub> μH) Max.	DCR (Ohms) IC / Line	I <sub>DC</sub> (mA)	Isolation Voltage (Vrms Min.)	Schematic
HPT-100A	1ct:1:1	3.0±6%	20	2.3 / 2.3	70	1500	A
HPT-110A	1ct:1:1	2.0±6%	20	2.3 / 2.3	70	1500	A
HPT-120A	2ct:1:1	3.0±6%	20	4.6 / 2.3	160	1500	A
HPT-130A	2ct:1:1	2.0±6%	20	4.6 / 2.3	160	1500	A
HPT-140A	1ct:1:1	3.5±10%	40	2.3 / 2.3	70	1500	A
HPT-150A	1ct:1:1	5.0±10%	40	2.6 / 2.6	70	1500	A
HPT-160A	1ct:1:1	8.0±10%	40	2.6 / 2.6	70	1500	A
HPT-170B	1ct:1.8ct	2.75±6%	20	3.2 / 3.0	75	2000	B
HPT-180C	1ct:0.9:0.9	2.03±6%	20	2.0 / 2.0	75	2500	C

### Package and Outline



Note: Pin 1 has been removed for polarization reference

### Schematic

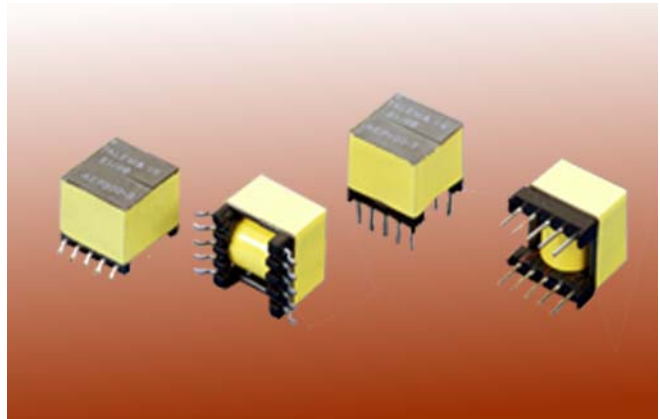




## SDSL /SHDSL Transformers for Infineon Chipsets

### Features

- complies with ANSI and ETSI requirements
- matched to Infineons PEB22622, PEF22623 & PEF24622 chipsets
- very low THD
- 2000V minimum isolation
- all materials approved to UL94V-0
- excellent quality at competitive price due to high volume production
- manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 approved Talema facility
- fully RoHS compliant and meets lead free reflow level J-STD-020C

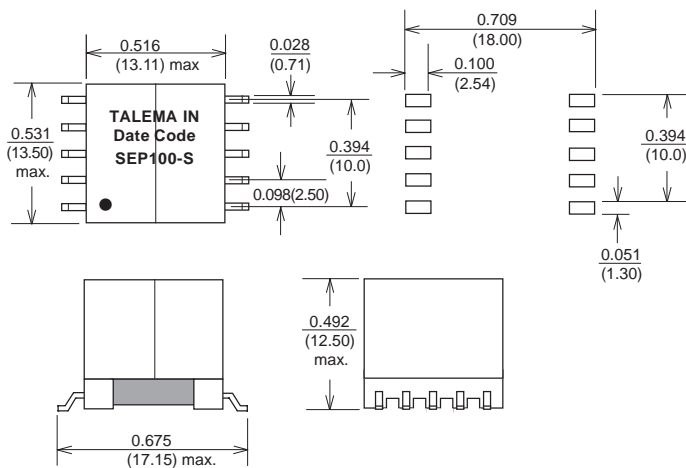


### Electrical Specifications @ 25°C • Operating Temperature -40° to +85°C

Part Number	Package	Turns Ratio ±2% Line : IC:Sense	L <sub>p</sub> (mH) ±10%	L <sub>L</sub> (µH) Max.	DCR (Ohms Max.) Line / IC	DCR (Ohms Max.) Sense Winding	Isolation Voltage (Vrms)
SEP100-T	TH	3.2 : 1 : 1	3.0	25	5.0 / 0.80	3.6	2000
SEP100-S	SMD						

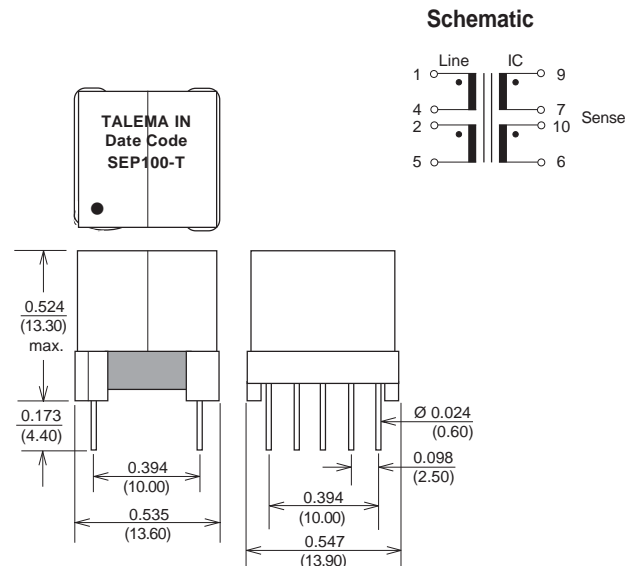
Package "S"

Package "T"



Dimensions: Inches(Millimeters)  
Tolerance: ±0.010 (0.25)

Weight: 6.8 grams



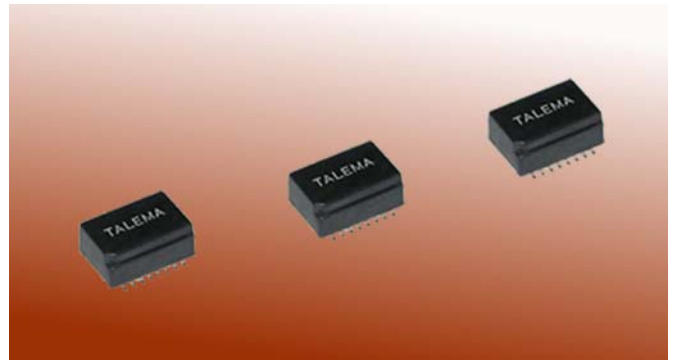
Schematic



## VDSL Miniature SMD Transformer

### Features

- complies with requirements of IEC60950, EN60950, UL60950/CSA60950 and AS/NZS60950
- low profile, light weight SMD packages for pick and place compatibility while providing consistent and reliable coplanarity
- excellent quality at extremely competitive price due to high volume production
- manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- fully RoHS compliant and meets lead free reflow level J-STD-020C



### Electrical Specifications

Ratings@ 25°C ambient

Minimum Isolation Voltage: 1500Vrms for 1 minute

Operating Temperature Range: -40° to +85°C

Storage Temperature: -25°C to +125°C

Supplementary insulation for a primary circuit at 250Vrms working voltage

Inductance & Leakage measured at 100kHz, 10mV<sub>AC</sub>

Standard Packaging: Tape & Reel

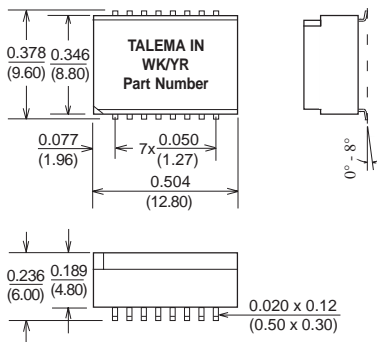
Weight: 2.5 g

### VDSL Transformer

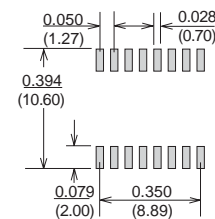
Part Number	OCL (μH Min.)	Pins	Turns ratio ±2%	DCR (mOhms) Max.	Line Impedance	Leakage Inductance	V <sub>P</sub> (Vrms)
82312	95μH 430μH 125μH 95μH	16-14 11-9 3-1 6-8	(16-14):(1-3):(15-13) = 9:10:10 (11-9):(6-8):(10-12) = 19:9:9	350	100 ohms	0.2μH max., 16-14 (s.c.15+1, 3+13) 0.8μH max., 11-9 (s.c.12+8, 6+10)	1500

### Dimensions & Schematics

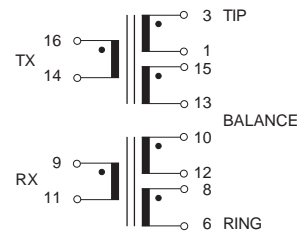
#### Package



#### Suggested Pad Layout



#### Schematic



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Fax: Int. + 420 377 - 338 350  
Email: [talema@talema.cz](mailto:talema@talema.cz)  
Web Site: [www.ntmagnetics.cz](http://www.ntmagnetics.cz)

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Fax: Int. + 353 74 - 954 8139  
Email: [info@nuvotem.com](mailto:info@nuvotem.com)

#### India

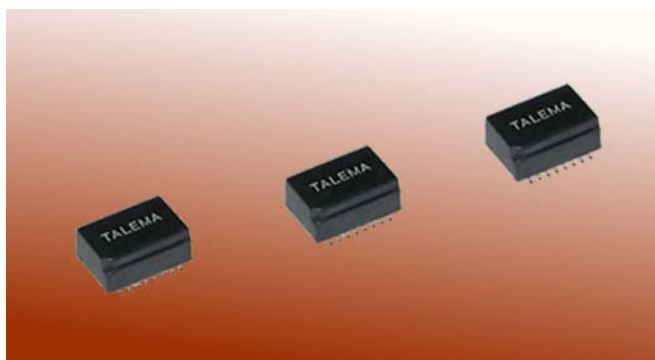
TALEMA ELECTRONIC PVT. LTD.  
Opposite the SIDCO Industrial Estate  
Gins Towers  
4/5S.H/1, Omalur Main Road  
Salem - 636 004, Tamil Nadu  
Tel: Int. + 91 427 - 244 1325  
Fax: Int. + 91 427 - 243 0034  
E-mail: [talema@talemaindia.com](mailto:talema@talemaindia.com)  
Web Site: [www.talemaindia.com](http://www.talemaindia.com)



## Dual Fibre Channel Transformers for 75 Ohm Coaxial & 150 Ohm STP Cable

### Features

- complies with ANSI X3T9.5, FC-0 over 133, 266 and 531 Mbps data rates for up to 100 meters on coaxial and STP cable
- fast rise time
- low profile, light weight SMD packages for pick and place compatibility while providing consistent and reliable coplanarity
- manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- fully RoHS compliant and meets lead free reflow level J-STD-020C



### Electrical Specifications

Ratings @ 25°C ambient

Minimum Isolation Voltage: 2000Vrms

Operating Temperature Range: 0 to +85°C

Storage Temperature: -25°C to +125°C

Inductance measured at 100kHz, 20mVrms

Standard Packaging: Tape & Reel

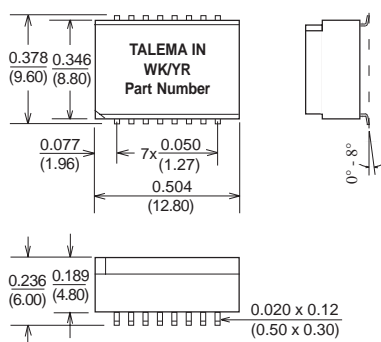
Weight: 2.5 g

### Dual Fibre Channel Transformers

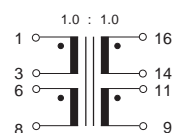
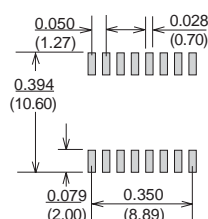
Part Number	OCL (µH Min.)	Turns ratio ±5%	R <sub>CU</sub> P (mOhms)	C <sub>ww</sub> (pF Max)	Rise Time (ns Max) 20-80%	L <sub>L</sub> sec (µH Max)	V <sub>p</sub> (Vrms)
FCJ-7.5	7.5	1 : 1	200	5.0	0.5	0.10	2000
FCJ-15	15	1 : 1	200	5.0	0.8	0.10	2000
FCJ-30	30	1 : 1	200	5.0	1.6	0.10	2000
FCJ-60	60	1 : 1	200	5.5	2.0	0.10	2000

### Dimensions & Schematics

#### Package



#### Suggested Pad Layout



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Web Site: [www.ntmagnetics.cz](http://www.ntmagnetics.cz)

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Email: [info@nuvotem.com](mailto:info@nuvotem.com)

#### India

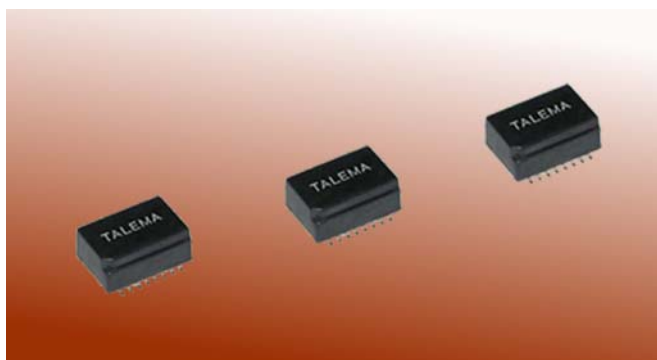
TALEMA ELECTRONIC PVT. LTD.  
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Gins Towers  
4/5S.H/1, Omalur Main Road  
Salem - 636 004, Tamil Nadu  
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Web Site: [www.talemaindia.com](http://www.talemaindia.com)

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## 150 Ohm Twinax Cable Dual Gigabit Transformers

### Features

- meets requirements of ANSI X3T9.5, FC-PH3 Fibre Channel Physical Layer Specification and IEEE 802.3z PMD
- fast rise time
- low profile, light weight SMD packages for pick and place compatibility while providing consistent and reliable coplanarity
- excellent quality at extremely competitive price due to high volume production
- manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- fully RoHS compliant and meets lead free reflow level J-STD-020C



### Electrical Specifications

Ratings @ 25°C ambient

Minimum Isolation Voltage: 1500Vrms

Operating Temperature Range: 0 to +85°C

Storage Temperature: -25°C to +125°C

Inductance measured at 100kHz, 20mVrms

Standard Packaging: Tape & Reel

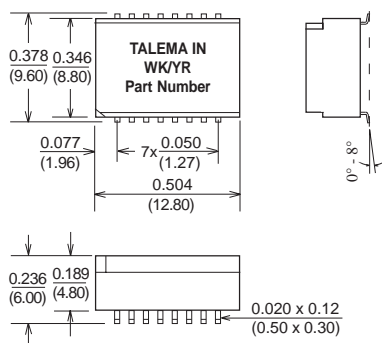
Weight: 2.5 g

### Dual Gigabit Isolation Transformers for 150 Ohm Twinax Cable

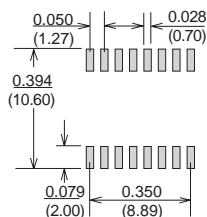
Part Number	OCL ( $\mu$ H Min.)	Turns ratio $\pm 5\%$	$R_{CUP}$ (mOhms)	Rise Time (ps Max) 20-80%	Low Frequency Cutoff (-3dB)	$V_P$ (Vrms)	Schematic
TCJ-5.5-A	5.50	1ct : 1ct	210	350	<2.5MHz	1500	A
TCJ-5.5-B	5.50	1 : 1	210	280	<2.5MHz	1500	B

### Dimensions & Schematics

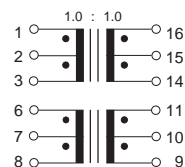
#### Package



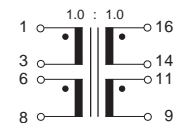
#### Suggested Pad Layout



#### A



#### B

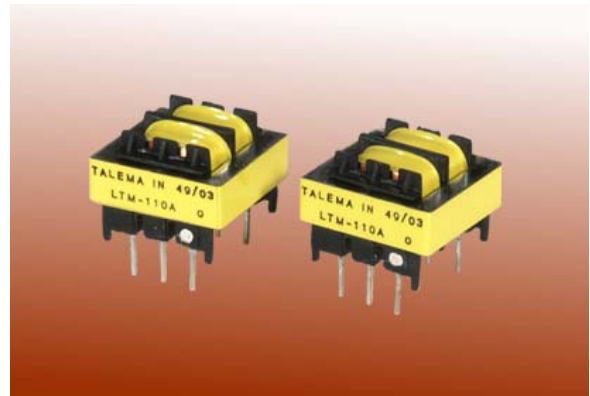




## LTM-110A Line Interface 56kbps Modem Transformer

### Features

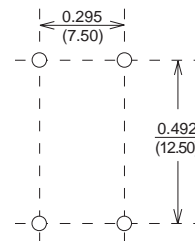
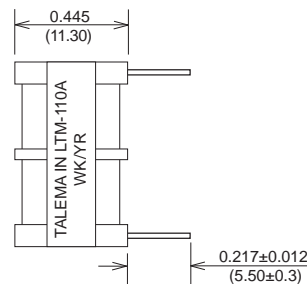
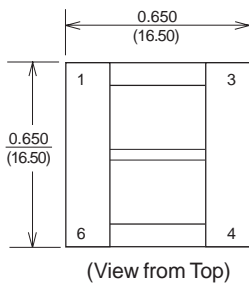
- designed for V.90 applications (56kbps)
- very low distortion
- wide frequency range with flat response
- meets IEC 60950 Supplementary Insulation levels, 1500V min.
- excellent quality at competitive price due to high volume production
- manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- fully RoHS compliant



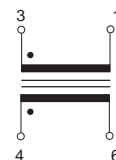
### Electrical Specifications @ 25°C • Operating Temperature -40° to +85°C

Parameter	Conditions	Typical	Limit	Units
Frequency Response	200 - 4000Hz	±0.5	-	dB
Insertion Loss	2000Hz, RL600 Ohms	1.0	1.5 max	dB
Return Loss	200 - 4000Hz	22	18 min	dB
THD	150Hz, -3dBm	-70	-	dB
THD	200Hz, -10dBm	-85	-	dB
DC Resistance	per winding	70	±10%	Ohms
Inductance	1000Hz, 1V	6.0	-	H
Leakage Inductance	1000Hz, 1V	17	-	mH
Turns Ratio		1:1	±2%	-

### Mechanical Dimensions & Pinout



### Schematic



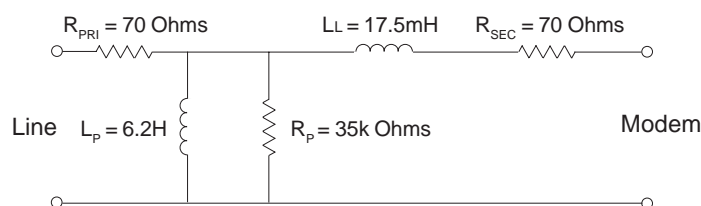
Dimensions are max. unless otherwise stated:

Inches(Millimeters)

Pinout spacings are nominal. Pins: 0.026 x 0.018

(0.66x0.45)

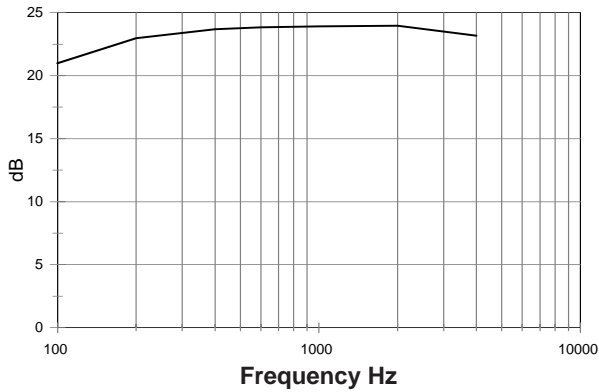
### Equivalent Circuit: (Referenced to Primary @ 1V, 1kHz)



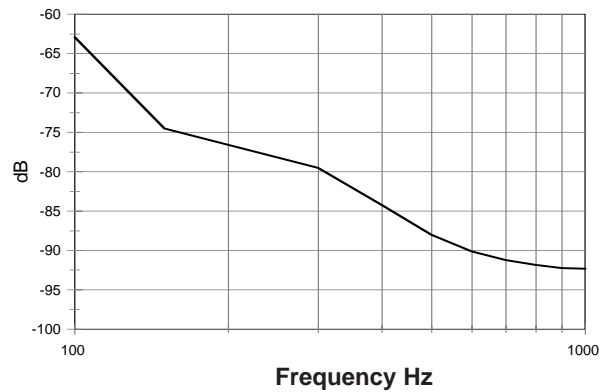
# LTM-110A Line Interface 56kbps Modem Transformer

## PERFORMANCE DATA

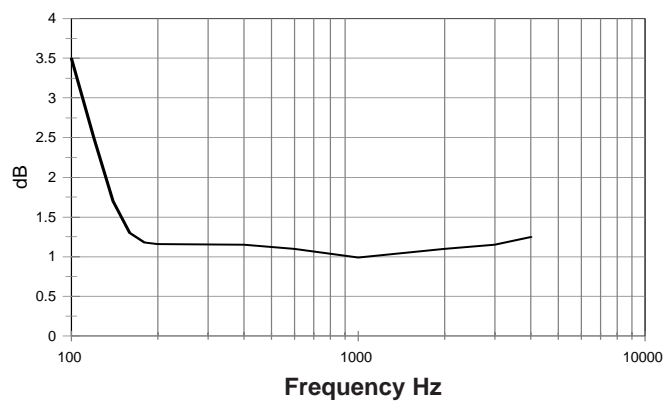
Return Loss  
Typical



Total Harmonic Distortion  
Typical



Insertion Loss  
Typical



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E-mail: [talema@talemaindia.com](mailto:talema@talemaindia.com)  
Web Site: [www.talemaindia.com](http://www.talemaindia.com)



## Common Mode Interface Chokes for LAN & Telecom Applications

### Features

- EMI noise suppression for data and signal line filtering
- Miniature, low cost SMD common mode chokes are designed for pick and place compatibility and provide reliable coplanarity
- High attenuation over a wide frequency range
- Manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- Other inductance values available upon request
- Parts shown below meet all popular footprints
- Fully RoHS compliant and meets lead free reflow level J-STD-020C



### Electrical Specifications @ 25°C

Nominal Voltage: 42Vac (50/60Hz), 80Vdc  
 Operating temperature: -25° to +85°C  
 Storage temperature: -40° to +125°C

Climatic category: according to IEC68-1 25/85/56  
 Test voltage between windings: 500 Vrms  
 Test frequency: Inductance measured @ 100kHz / 20 mVrms  
 Test Equipment: HP4192A

### Miniature Common Mode Chokes for Data and Signal Line EMI suppression

Part Number	OCL (µH) ±30%	I <sub>N</sub> (mA)	DCR (mOhms)	Number of Coils	Windings per Coil	Schematic	Part Number	OCL (µH) ±30%	I <sub>N</sub> (mA)	DCR (mOhms)	Number of Coils	Windings per Coil	Schematic
<b>Two Data Lines</b>							<b>Four Data Lines</b>						
CTJ-2-110	11	300	160	1	2	A	CFJ-4-330	33	550	65	1	4	A
CTJ-2-101	100	300	180	1	2	A	CFJ-4-470	47	540	80	1	4	A
CTJ-2-471	470	200	380	1	2	A	CFJ-4-101	100	360	160	1	4	A
CTJ-2-102	1000	150	660	1	2	A	CFJ-4-471	470	360	65	1	4	A
CTJ-2-472	4700	150	1800	1	2	A	CFJ-4-102	1000	300	85	1	4	A
CLJ/CMJ-2-110	11	500	120	1	2	A	CFJ-4-472	4700	220	430	1	4	A
CLJ/CMJ-2-470	47	500	150	1	2	A	CCJ-4-260	26	600	65	1	4	B
CLJ/CMJ-2-101	100	500	260	1	2	A	CCJ-4-470	47	500	100	1	4	B
CLJ/CMJ-2-471	470	500	250	1	2	A	CCJ-4-101	100	400	130	1	4	B
CLJ/CMJ-2-102	1000	500	250	1	2	A	CCJ-4-221	220	400	190	1	4	B
CLJ/CMJ-2-472	4700	200	845	1	2	A	CCJ-4-471	470	400	120	1	4	B
CLJ/CMJ-2-103	10000	200	1200	1	2	A	CCJ-4-102	1000	350	190	1	4	B
CLJ/CMJ-2-473	47000	100	3450	1	2	A	CCJ-4-152	1500	350	120	1	4	B
CCJ-2-102	1000	550	140	1	2	A	CCJ-4-502	5000	330	220	1	4	B
CCJ-2-152	1500	550	100	1	2	A	CCJ-4-123	12000	170	790	1	4	B
CCJ-2-502	5000	500	180	1	2	A	CCJ-4-583	58000	90	2350	1	4	B
CCJ-2-123	12000	400	280	1	2	A							
CCJ-2-283	28000	270	520	1	2	A	CQJ-1.0-B	1000	400	200	1	4	B
CCJ-2-503	50000	200	1020	1	2	A	CQJ-5.0-B	5000	300	450	1	4	B
CCJ-2-703	70000	170	1540	1	2	A	CQJ-10-B	10000	300	1060	1	4	B
CDJ-1.0-A	1000	600	190	1	2	A	CQJ-58-B	58000	200	2400	1	4	B
CDJ-4.7-A	4700	350	575	1	2	A	CQJ-90-B	90000	150	4150	1	4	B
CDJ-12-A	12000	300	680	1	2	A	CUJ-240-16E	24	800	45	2	2	E
CDJ-28-A	28000	300	1020	1	2	A	CUJ-101-16E	100	450	135	2	2	E
CDJ-50-A	50000	300	1800	1	2	A	CUJ-102-16E	1000	450	135	2	2	E
CDJ-70-A	70000	300	2150	1	2	A	CUJ-472-16E	4700	300	310	2	2	E
<b>Three Data Lines</b>							<b>Six Data Lines</b>						
CFJ-3-240	24	1000	45	1	3	A	CUJ-240-16C	24	650	45	2	3	C
CFJ-3-102	1000	700	70	1	3	A	CUJ-101-16C	100	350	110	2	3	C
CFJ-3-222	2200	600	125	1	3	A	CUJ-102-16C	1000	330	170	2	3	C
CFJ-3-472	4700	350	340	1	3	A	CUJ-472-16C	4700	200	430	3	2	D
<b>Four Data Lines</b>							<b>Eight Data Lines</b>						
CLJ/CMJ-4-110	11	600	130	1	4	A	CUJ-240-16A	24	550	45	2	4	A
CLJ/CMJ-4-470	47	500	180	1	4	A	CUJ-101-16A	100	250	240	2	4	A
CLJ/CMJ-4-101	100	500	330	1	4	A	CUJ-471-16A	470	250	95	2	4	A
CLJ/CMJ-4-471	470	500	240	1	4	A	CUJ-472-16A	4700	160	605	2	4	A
CLJ/CMJ-4-102	1000	500	310	1	4	A	<b>Sixteen Data Lines</b>						
CLJ/CMJ-4-472	4700	300	860	1	4	A	COJ-16-470	47	300	200	8	2	--
CLJ/CMJ-4-123	12000	130	2300	1	4	A	COJ-16-502	5000	150	1900	8	2	--

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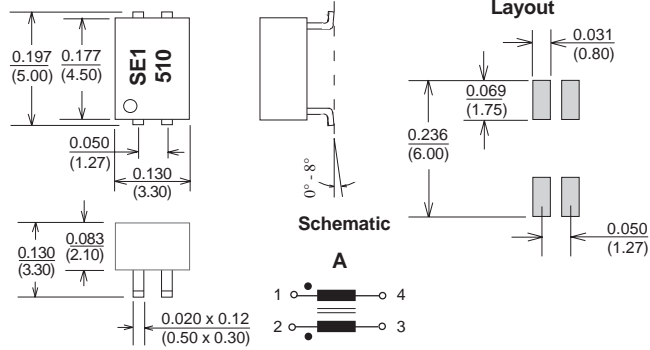


# Mechanical Dimensions • Miniature SMD Common Mode Chokes

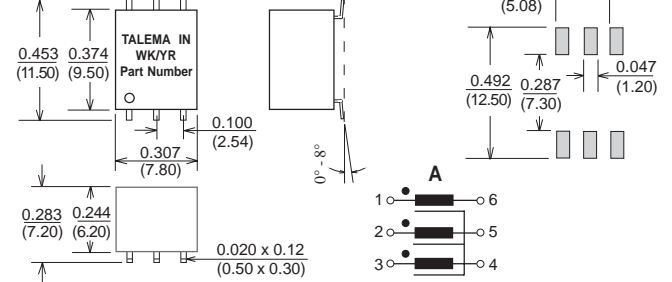
Dimensions: Inches (Millimeters)  
Surface Coplanarity will be 0.004 (0.10) maximum

Tolerance:  $\pm 0.010$  (0.25) unless specified otherwise

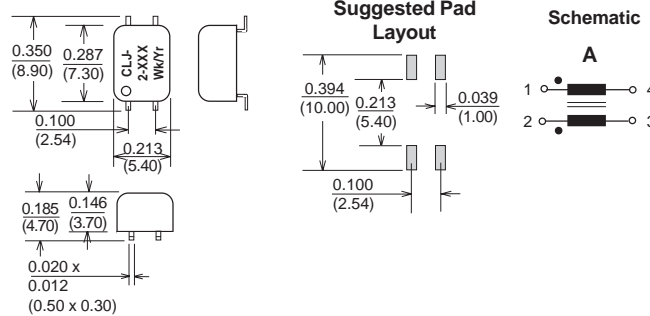
## CTJ-2



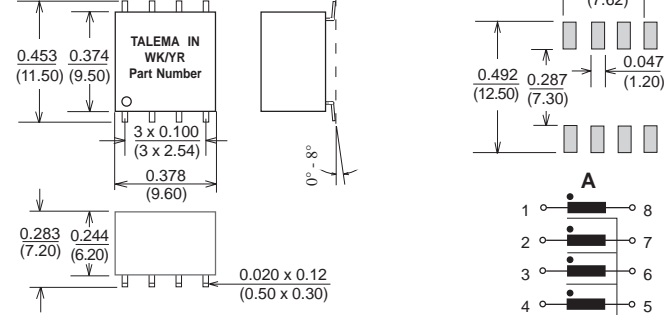
## CFJ-3



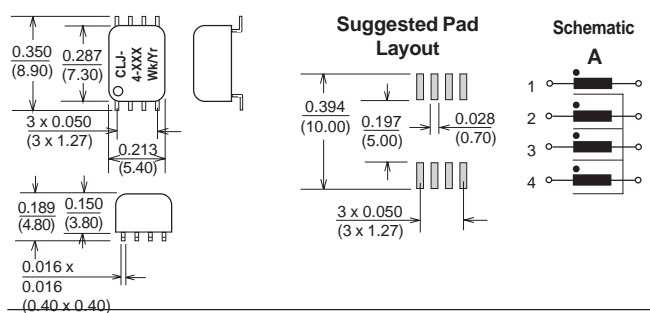
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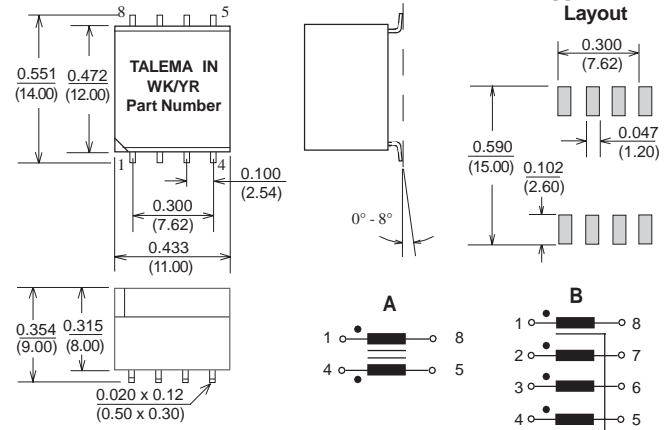
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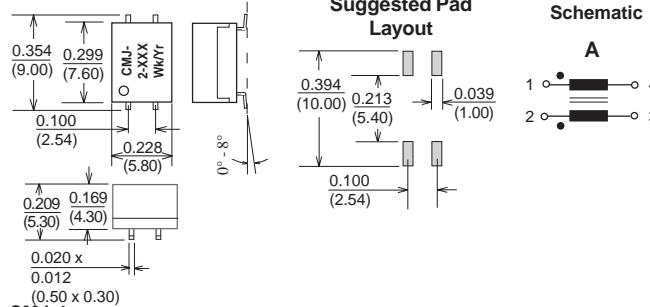
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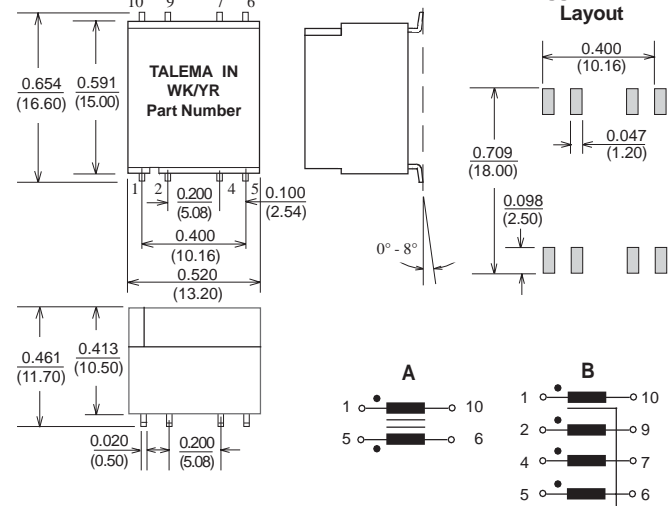
## CCJ-2 / 4



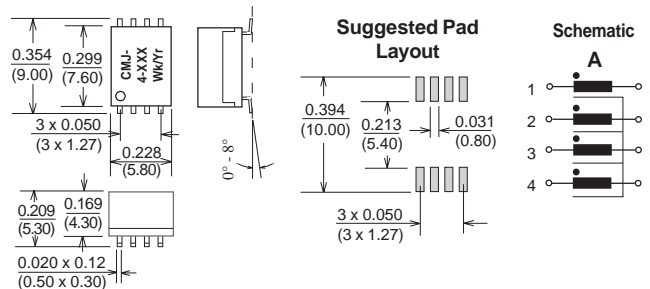
## CMJ-2



## CQJ



## CMJ-4



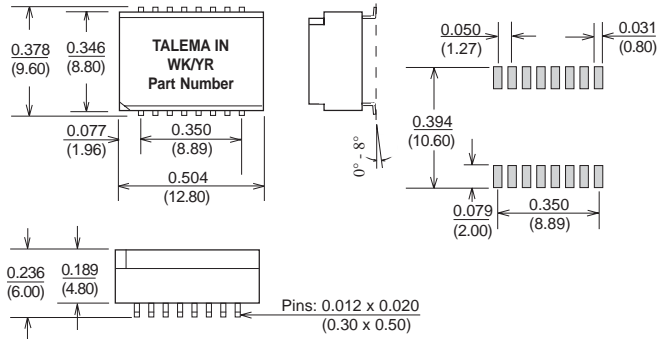


# Mechanical Dimensions • Miniature SMD Common Mode Chokes

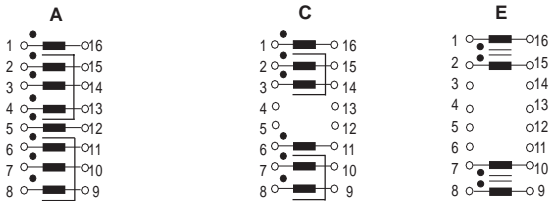
Dimensions: Inches (Millimeters)  
Tolerance:  $\pm 0.010$  (0.25) unless specified otherwise

Surface Coplanarity will be 0.004 (0.10) maximum

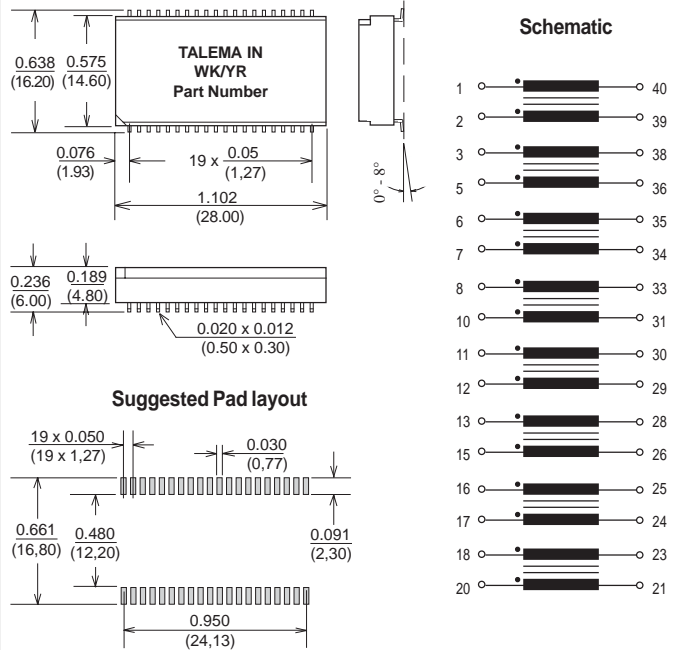
## CUJ-XXX-16



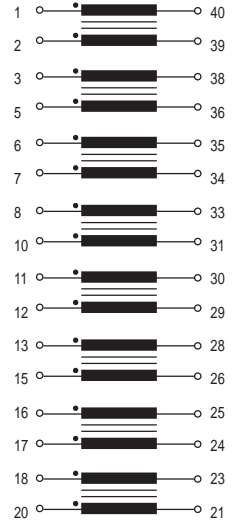
### Schematics



## COJ Module

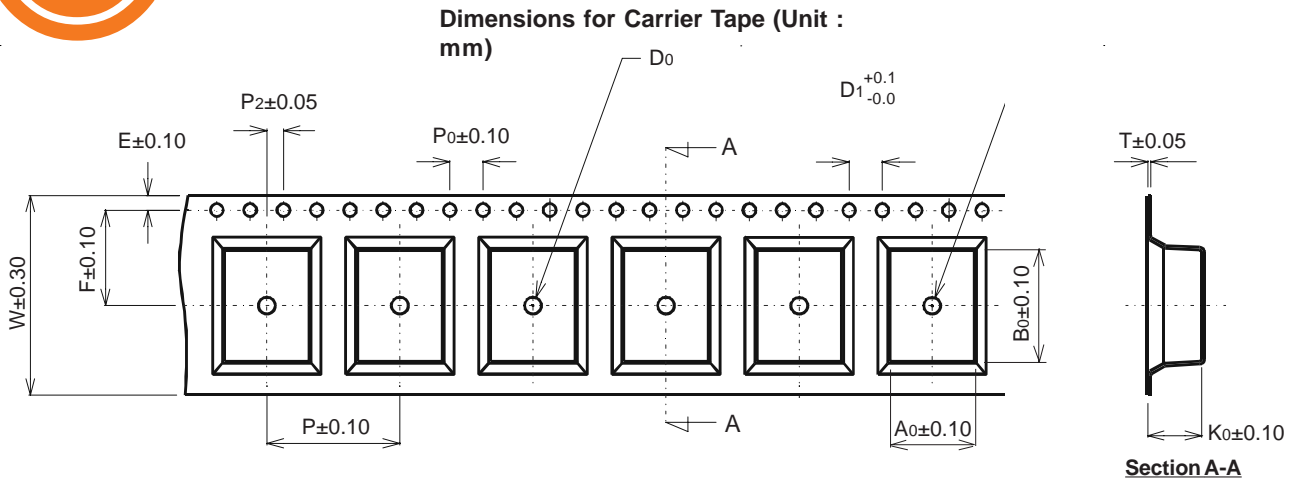


### Suggested Pad layout



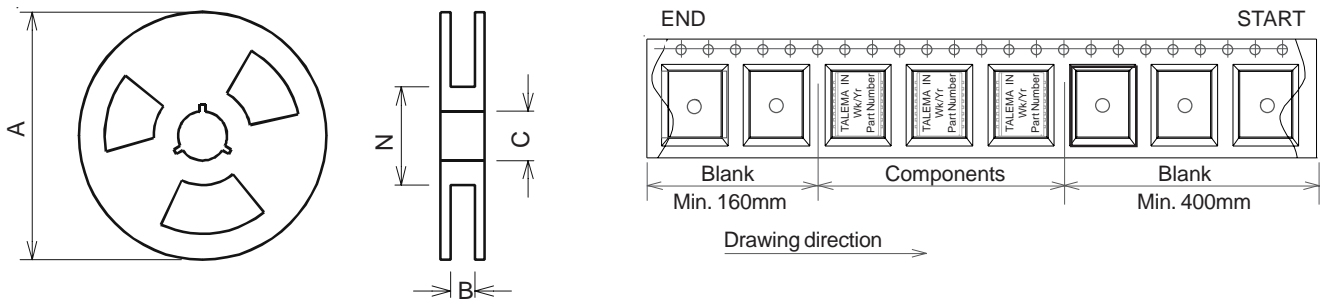


## Tape and Reel Packaging & Dimensions



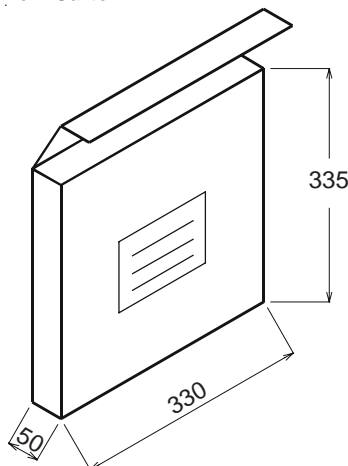
Type	Dimensions in mm												Reel Size	Quantity (Pcs/Reel)	Quantity (Reel/Cased)
	W	F	E	P <sub>2</sub>	P <sub>0</sub>	D <sub>0</sub>	D <sub>1</sub>	P	A <sub>0</sub>	B <sub>0</sub>	T	K <sub>0</sub>			
82312	24.00	11.50	1.75	2.00	4.00	∅1.50	∅1.50	16.00	10.20	13.35	0.35	6.55	330x24	600	5/3000
FCJ	24.00	11.50	1.75	2.00	4.00	∅1.50	∅1.50	16.00	10.20	13.35	0.35	6.55	330x24	600	5/3000
TCJ	24.00	11.50	1.75	2.00	4.00	∅1.50	∅1.50	16.00	10.20	13.35	0.35	6.55	330x24	600	5/3000

### Reel Dimensions (Unit : mm)

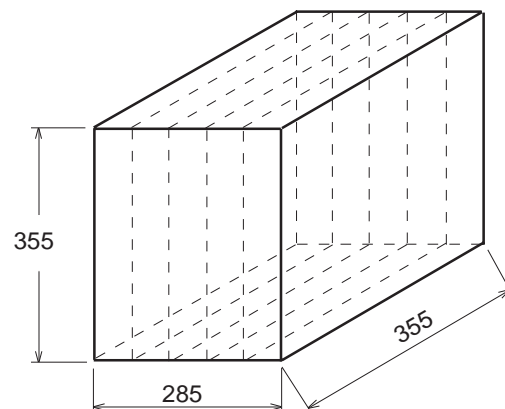


Reel Dimensions in mm				
Type	A	B	C	N
330 x 24	330	24	20.2	100

### Inner Carton



### Outer Carton





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E-Mail: sales@alfamag.com  
Web Site: www.alfamag.com

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Fax: Int. + 91 427 - 243 0034  
E-mail: talema@talemaindia.com  
Web Site: www.talemaindia.com



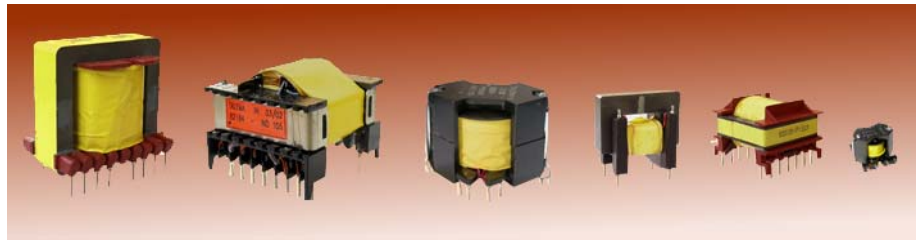
nt  
magnetics

nuvotem

Summary  
TOTAL PROGRAM

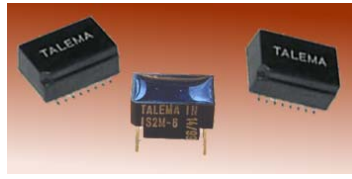
SECTION 1

- TOROIDAL 50/60Hz TRANSFORMERS



SECTION 2

- TOROIDAL PCB TRANSFORMERS



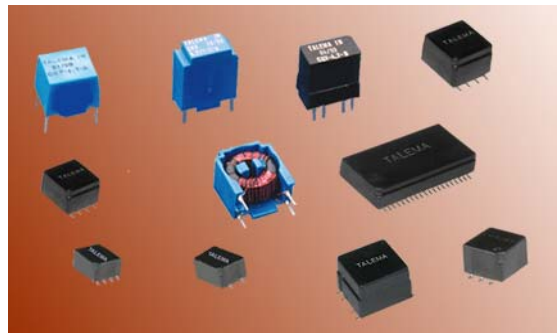
SECTION 3

- ELEVEN GOOD REASONS TO SELECT TALEMA TOROIDAL TRANSFORMERS



SECTION 4

- CHOKES, INDUCTORS AND TRANSFORMERS FOR POWER APPLICATIONS



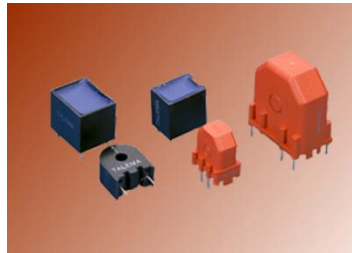
SECTION 5

- COMPONENTS FOR TELECOMMUNICATIONS AND DATA LINE TECHNOLOGY



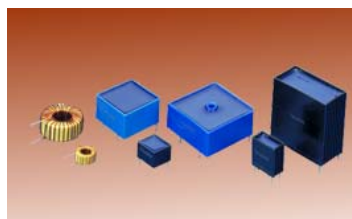
SECTION 6

- CURRENT COMPENSATED EMI NOISE SUPPRESSION CHOKES



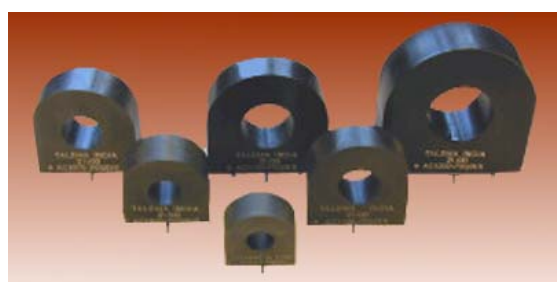
SECTION 7

- CURRENT SENSE TRANSFORMERS AND INDUCTORS



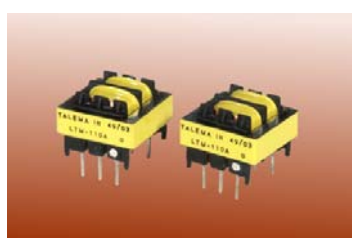
SECTION 8

- LAN MAGNETIC COMPONENTS FOR ETHERNET APPLICATIONS



SECTION 9

- T1/E1/CEPT-PrI - T3/DS3/E3/STS-1 FOR TELECOMMUNICATION PRODUCTS



SECTION 10

- U INTERFACE TRANSFORMERS FOR COMMUNICATIONS AND DATA LINE TECHNOLOGY



SECTION 11

- TRANSFORMERS FOR BROADBAND ACCESS AND FIBRE CHANNEL INTERFACE

