



# SURFACE MOUNT LINE MATCHING TRANSFORMERS FAAT 16XX SERIES

## FEATURES

Fully encapsulated  
Low profile  
High dielectric strength  
Ten models available  
Ex stock  
Competitively priced  
Lead free  
RoHS compliant

## OPTIONS

Tape and reel is standard  
[400 pcs. per reel]  
Bulk packaging available for  
faller quantities  
Custom design available  
Tolerance: 5% is standard,  
Tighter tolerance available

## COMMON APPLICATIONS

Line matching  
Modems  
Fax modems  
Laptop Computer  
Telecommunications  
Instrumentation  
PCMCIA

## ELECTRICAL CHARACTERISTICS

Parameters		Unit	Part Number										
			FAAT1601	FAAT1602	FAAT1603	FAAT1604	FAAT1605	FAAT1601A	FAAT1602A	FAAT1603A	FAAT1604A	FAAT1605A	
Ref. Temperature Data		°C	25	25	25	25	25	25	25	25	25	25	25
Impedance (min./at 1.0kHz)	Primary	Ω	600	600	600	600 [150,150]	600 [150+150]	600	600	600	600 [150,150]	600 [150+150]	
	Secondary	Ω	600	600 [150,150]	600 [150+150]	600 [150,150]	600 [150+150]	600	600 [150,150]	600 [150+150]	600 [150,150]	600 [150+150]	
Inductance (min./at 0.2 kHz)	Primary	H	2.8	2.8	2.8	2.8 [0.7,0.7]	2.8 [0.7+0.7]	2.8	2.8	2.8	2.8 [0.7,0.7]	2.8 [0.7+0.7]	
	Secondary	H	2.8	2.8 [0.7,0.7]	2.8 [0.7+0.7]	2.8 [0.7,0.7]	2.8 [0.7+0.7]	2.8	2.8 [0.7,0.7]	2.8 [0.7+0.7]	2.8 [0.7,0.7]	2.8 [0.7+0.7]	
DC-Resistance [Typical/±10%]	Primary	Ω	66	66	66	66 [33,33]	66 [33+33]	90	90	90	90 [45,45]	90 [45+45]	
	Secondary	Ω	66	66 [33,33]	66 [33+33]	66 [33,33]	66 [33+33]	90	90 [45,45]	90 [45+45]	90 [45,45]	90 [45+45]	
Turns Ratio(±2%)		-	1:1	1:1	1:1	1:1	1:1	1:1	1:1	1:1	1:1	1:1	
Winding Configurations		-	-	one winding centre tapped	one winding split	both windings centre tapped	both windings split	-	one winding centre tapped	one winding split	both windings centre tapped	both windings split	
Insertion Loss (at 2.0kHz)		dB	≤ 1.5					≤ 2.0					
Return Loss Transformer (0.2-4.0kHz) In Networks		dB	≥ 10.0 ≥ 21.0					≥ 8.0 ≥ 20.0					
Shunt Loss [Typical]		kΩ	9.0					9.0					
Frequency Response [Typ./0.2-3.5kHz]		dB	-0.3					-0.5					
Wide Band Response(0.2-10kHz)		dB	-2.5					-4.5					
Power Level		dBm	-45.0-+3.0					-43.0-+3.0					
Longitudinal Balance(0.3-4.0kHz)		dB	-80.0					-70.0					
Distortion[0 dB/at 1.0kHz]		%	≤ 0.1					≤ 0.25					
Leakage Induction[Typical]		mH	14.0					14.0					
Dielectric Strength[P/S]		kVDC	6.5					6.5					
Temperature Range	Operation	°C	-10-+60					-10-+60					
	Storage	°C	-20-+70					-20-+70					
Specifications Met			BS 6240: Construction and flammability [UL 94 V0] BS 6310: Isolation BS 6305: Return loss [1982/paragraph 4.3.2.2/b]					CCITT: Rec. T/CD 1-1 [Sept.1982]					

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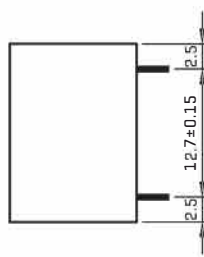
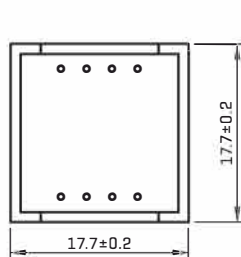
## OPTIONS

Tape and reel is standard [400 pcs. per reel]  
 Bulk packaging available for smaller quantities  
 Custom design available  
 Tolerance: 5% is standard, tighter tolerance available

## COMMON APPLICATIONS

Line matching  
 Modems  
 Fax modems  
 Laptop Computer  
 Telecommunications  
 Instrumentation  
 PCMCIA

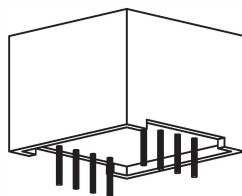
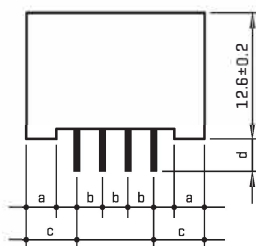
## PHYSICAL CHARACTERISTICS



Note:  
 The FAAT1600 Series Line Matching Transformers meet the return loss specifications of BS 6305.

It is important, however, to use the circuit recommended by BS 6305 for return loss

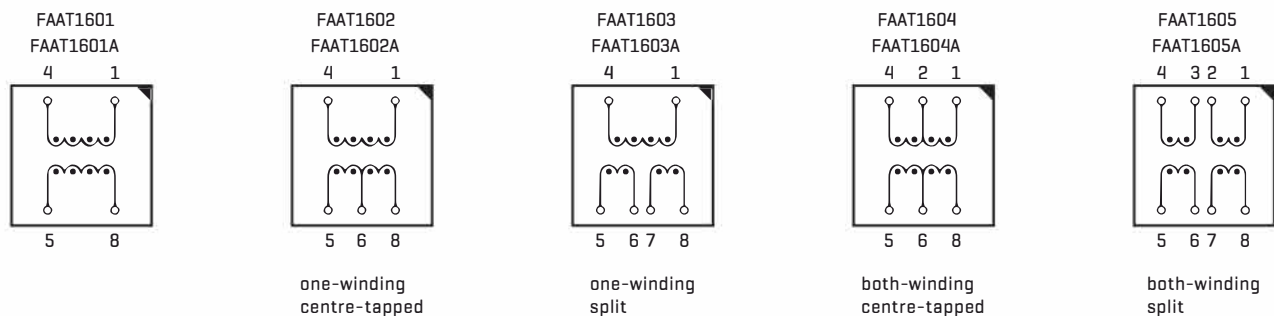
The FAAT1600 Series meet EN41003.



a=3.0  
 b=2.54  
 c=5.04  
 d=3.2±0.8

ALL DIMENSIONS IN MM

## TECHNICAL INFORMATION



Due to the unique design and the most advanced manufacturing techniques the 2 coils are fully identical, meaning there is no real primary nor secondary winding. Depending on the application, the transformers can be used either way.

# SURFACE MOUNT LINE MATCHING TRANSFORMERS FALP-5001 SERIES



## FEATURES

Subminiature in FAT  
7.36mm seated height  
Tested at 4600 Vrms, 1minute  
Distortion of only 0.015%  
Vacuum encapsulated  
UL60950 certified  
RoHS compliant

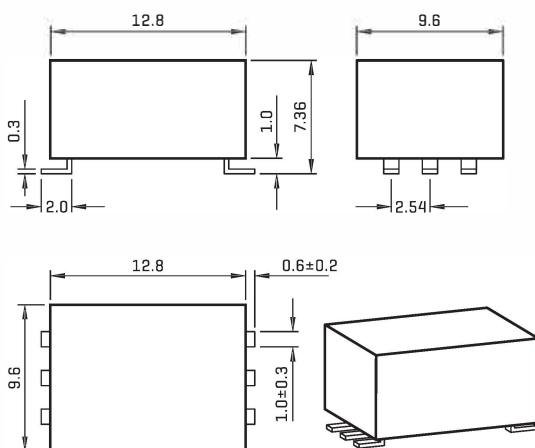
## OPTIONS

Tape and reel is standard  
(400 pcs. per reel)  
Bulk packaging available for  
faller quantities  
Custom design available  
Tolerance: 5% is standard,  
Tighter tolerance available

## COMMON APPLICATIONS

Modems[V32]  
Laptop Computer  
Telecommunications  
Instrumentation  
PCMCIA

## PHYSICAL CHARACTERISTICS

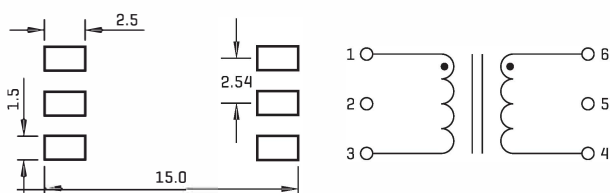


ALL DIMENSIONS IN MM

## ELECTRICAL CHARACTERISTICS

Nominal Impedance:	600Ω
Turns Ratio:	1:1
Insertion Loss:	2.0dB max. at 2kHz
Frequency Response:	±0.25dB max. 200-4kHz
Return Loss:	24dB min. 200-4kHz *
Balance:	80dB min.
Distortion:	-76dB max. @600Hz, -10dBm
Dielectric Strength:	4600 Vrms for 1 min.
Insulation Resistance:	100MΩ@500V
DC Resistance * *	
Primary:	115 Ω±15%
Secondary:	115 Ω±15%
Shunt Inductance:	3.8H min.
Shunt:	7500 Ω min.
Leakage Inductance:	6mH typ. @1kHz
Power Level:	10dBm
Operating Temperature:	-20°C-+85°C
Storage Temperature:	-40°C-+85°C
Terminal Plating Material	AgSn

## TECHNICAL INFORMATION



Suggested PCB Layout

Schematic

ALL DIMENSIONS IN MM

\* For use with recommended circuit [BS6305 impedance Class A non-speech or Class B speech]

\* \* FA-LP-5001 is symmetrical, meaning there is no real primary nor secondary winding.

# SURFACE MOUNT LINE MATCHING TRANSFORMERS FALP-5002 SERIES



## FEATURES

Subminiature in FAT  
7.36mm seated height  
Tested at 4600 Vrms, 1minute  
Distortion of only 0.015%  
Vacuum encapsulated  
UL60950 certified  
RoHS compliant

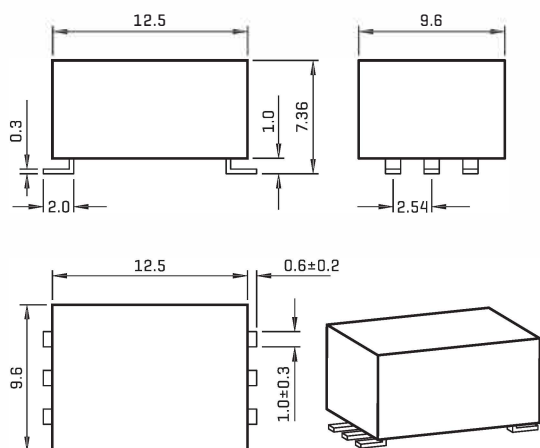
## OPTIONS

Tape and reel is standard  
(400 pcs. per reel)  
Bulk packaging available for  
faller quantities  
Custom design available  
Tolerance: 5% is standard,  
Tighter tolerance available

## COMMON APPLICATIONS

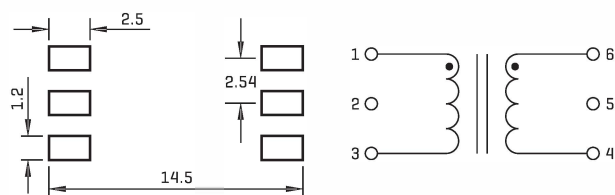
Modems [V32]  
Laptop Computer  
Telecommunications  
Instrumentation  
PCMCIA

## PHYSICAL CHARACTERISTICS



ALL DIMENSIONS IN MM

## TECHNICAL INFORMATION



Suggested PCB Layout

Schematic

ALL DIMENSIONS IN MM

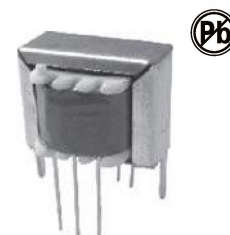
## ELECTRICAL CHARACTERISTICS

Nominal Impedance:	600°C
Turns Ratio:	1:1
Insertion Loss:	2.0dB max. at 2kHz
Frequency Response:	±0.25dB max. 200-4kHz
Return Loss:	24dB min. 200-4kHz *
Balance:	80dB min.
Distortion:	-85dB max. @600Hz, -10dBm
Dielectric Strength:	4600 Vrms for 1 min.
Insulation Resistance:	100MΩ@500V
DC Resistance * *	
Primary:	136 Ω±12%
Secondary:	136 Ω±12%
Shunt Inductance:	3.8H min.
Shunt:	7500 Ω min.
Leakage Inductance:	6-7mH typ. @1kHz
Power Level:	10dBm
Operating Temperature:	-20°C-+85°C
Storage Temperature:	-40°C-+85°C
Terminal Plating Material	AgSn

\* For use with recommended circuit [BS6305 impedance Class A non-speech or Class B speech]

\* \* FA-LP-5002 is symmetrical, meaning there is no real primary nor secondary winding.

# ECONOMY AUDIO DRY(NO DC) COUPLING TRANSFORMERS FAAT SERIES



## FEATURES

Metric size  
 Low cost  
 Dielectric strength-1000VAC (PRI-SEC-CORE)  
 Resistances  $\pm 20\%$   
 All impedances  $\pm 10\%$  [at 1kHz]

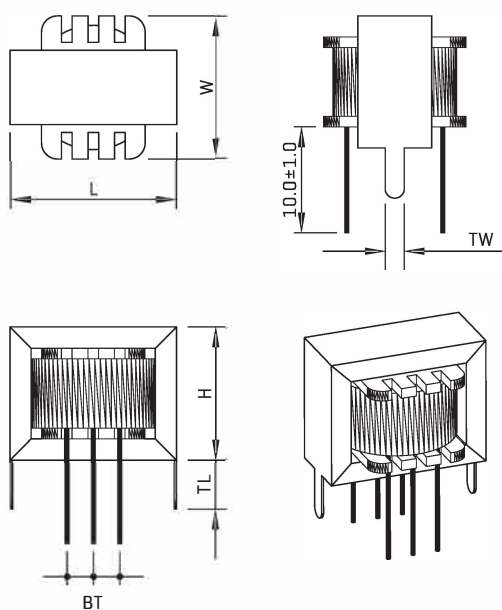
## OPTIONS

Bulk packaging is standard  
 Custom design available

## COMMON APPLICATIONS

Telephony  
 Audio coupling / isolating  
 Alarm system

## PHYSICAL CHARACTERISTICS



ALL DIMENSIONS IN MM

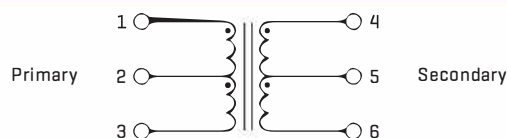
Part No.	size 1 EI-14	size 2 EI-16	size 3 EI-19	size 4 EI-24
L	15.2	17.7	20.3	25.3
H	11.0	14.0	16.2	19.0
W	12.0	16.0	14.5	16.9
TW	2.0	2.2	2.2	2.6
TL	3.8	4.0	4.2	4.8
BT	2.5	2.8	3.0	4.5

Size 1: EI-14 series 0.75watts max. / TCW leads 0.4mm DIA.  
 Size 2: EI-16 series 0.1watts max. / TCW leads 0.43mm DIA.  
 Size 3: EI-19 series 0.2watts max. / TCW leads 0.4mm DIA.  
 Size 4: EI-24 series 0.46watts max. / TCW leads 0.48mm DIA.

## ELECTRICAL CHARACTERISTICS

Part No.	Size	Description	Impedance[°C]		DC Resistance	
			Pri.	Sec.	Pri.	Sec.
FAAT-201	1	Output	500 C.T.	8 C.T.	35	0.8
FAAT-130	1	Coupling	600 C.T.	600 C.T.	45	40
FAAT-202	1	Output	1K C.T.	8 C.T.	60	0.8
FAAT-203	1	Coupling	10K C.T.	600 C.T.	450	100
FAAT-204	1	Driver	10K C.T.	2K C.T.	500	200
FAAT-301	2	Output	500 C.T.	8 C.T.	22	0.8
FAAT-302	2	Interstage	500 C.T.	500 C.T.	30	28
FAAT-303	2	Output	1.2K C.T.	8 C.T.	80	0.8
FAAT-304	2	Output	48 C.T.	8 C.T.	2.5	0.5
FAAT-305	2	Output	200 C.T.	8 C.T.	12	0.8
FAAT-400	3	Output	200 C.T.	8 C.T.	12	0.8
FAAT-401	3	Output	500 C.T.	8 C.T.	26	0.8
FAAT-129	3	Coupling	600 C.T.	600 C.T.	65	55
FAAT-402	3	Output	800 C.T.	8 C.T.	40	0.8
FAAT-403	3	Output	1.2K C.T.	8 C.T.	80	0.8
FAAT-404	3	Interstage	1.5K C.T.	500 C.T.	120	50
FAAT-405	3	Coupling	10K C.T.	600 C.T.	600	100
FAAT-406	3	Driver	10K C.T.	2K C.T.	600	155
FAAT-500	4	Output	48 C.T.	8 C.T.	2.5	0.5
FAAT-501	4	Output	120 C.T.	8 C.T.	7	0.7
FAAT-502	4	Output	200 C.T.	8 C.T.	12	0.5
FAAT-503	4	Output	500 C.T.	8 C.T.	18	0.7
FAAT-504	4	Interstage	500 C.T.	500 C.T.	35	28
FAAT-505	4	Driver	10K C.T.	2K C.T.	600	155
FAAT-506	4	Output	1.2K C.T.	8 C.T.	75	0.8
FAAT-507	4	Coupling	600 C.T.	600 C.T.	65	55

## TECHNICAL INFORMATION



Schematic