



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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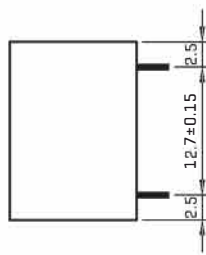
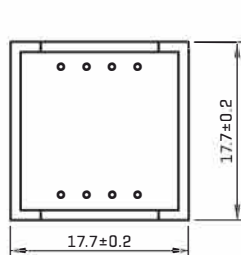
OPTIONS

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

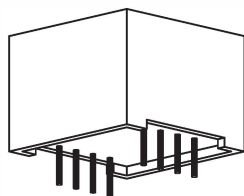
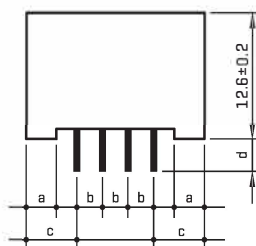
PHYSICAL CHARACTERISTICS



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

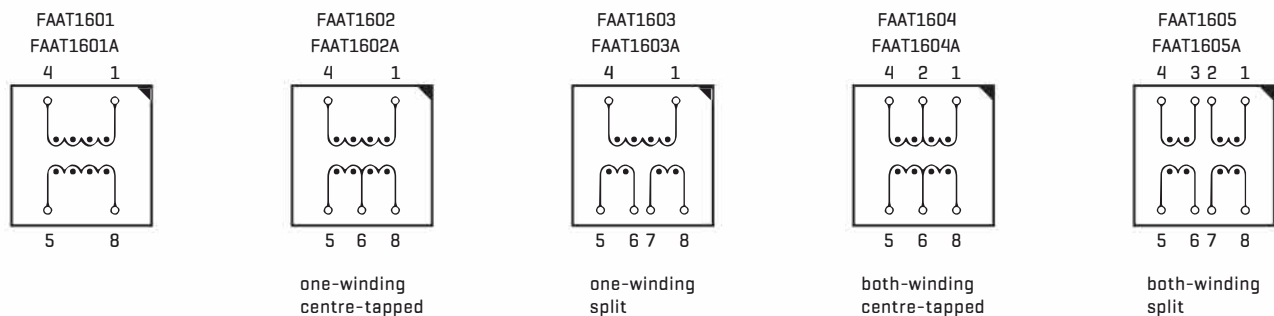
The FAAT1600 Series meet EN41003.



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

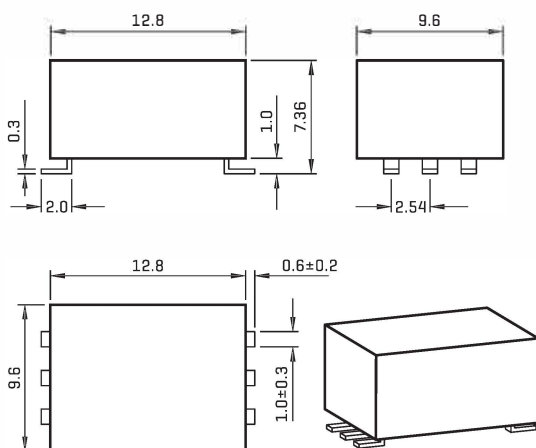
OPTIONS

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

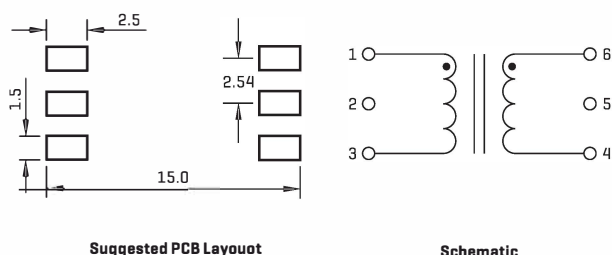


ALL DIMENSIONS IN MM

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

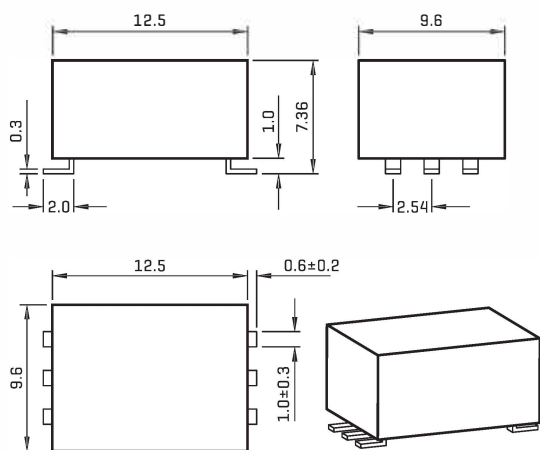
OPTIONS

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

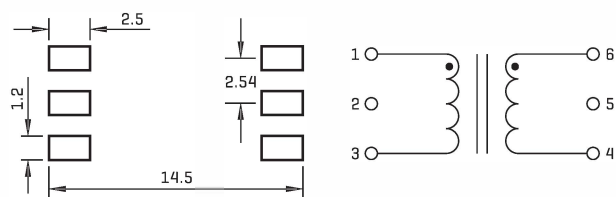
Modems [V32]
Laptop Computer
Telecommunications
Instrumentation
PCMCIA

PHYSICAL CHARACTERISTICS



ALL DIMENSIONS IN MM

TECHNICAL INFORMATION



Suggested PCB Layout

Schematic

ALL DIMENSIONS IN MM

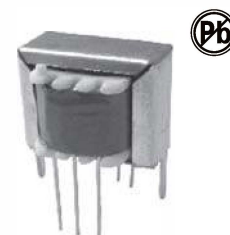
ELECTRICAL CHARACTERISTICS

| | |
|---------------------------|---------------------------|
| 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]

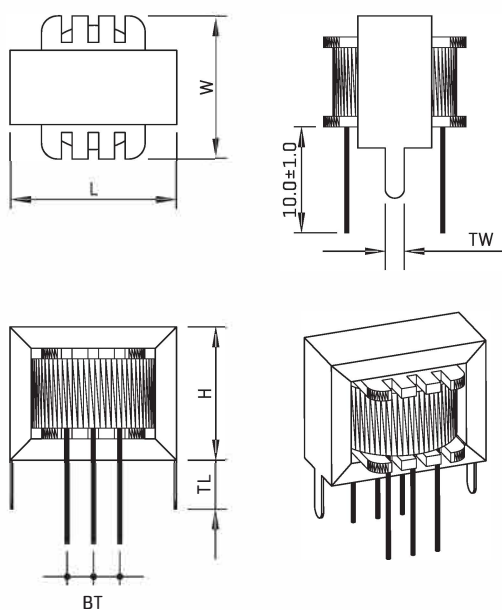
OPTIONS

Bulk packaging is standard
 Custom design available

COMMON APPLICATIONS

Telephony
 Audio coupling / isolating
 Alarm system

PHYSICAL CHARACTERISTICS



ALL DIMENSIONS IN MM

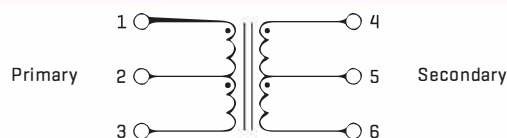
| Part No. | size 1 EI-14 | size 2 EI-16 | size 3 EI-19 | size 4 EI-24 |
|----------|--------------|--------------|--------------|--------------|
| L | 15.2 | 17.7 | 20.3 | 25.3 |
| H | 11.0 | 14.0 | 16.2 | 19.0 |
| W | 12.0 | 16.0 | 14.5 | 16.9 |
| TW | 2.0 | 2.2 | 2.2 | 2.6 |
| TL | 3.8 | 4.0 | 4.2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