TOA F SERIES CEILING SPEAKERS

F-122CU
F-1522SC
F-2322C
F-2352C
F-2352SC
F-2852C

TOA F SERIES CEILING SPEAKERS are ideal for music and paging applications such as audio/visual, business music or retail sound systems. The new lineup consists of six models with features and price points to suit premium-to-economy applications; all built with the same high quality and reliability the industry has come to expect from TOA products. Key benefits include smooth off-axis coverage, versatile range of models, ease of installation, and competitive pricing.

For premium wide-dispersion performance, the new F-122CU is a 5” full-range processed ceiling speaker, UL1480/2043-Listed for Fire Protective, General Purpose Signaling and Air-Handling Spaces. Other new full-range models include the F-2322C with 5” full-range driver and the ultra-compact F-1522SC with 4” full-range driver.

Three new two-way co-axial models include the F-2852C with 6.5” cone driver, the F-2352C with 5” cone driver and the economy F-2352SC with 5” cone driver. Each model has a special diffusor with built-in dome tweeter for superior co-axial performance.

The F-122CU, F-2322C, F-2352C and F-2852C all include integral metal back-cans with safety cable, quick-mount hardware and removable Phoenix-style connectors with loop-through points for adjacent speakers. Built-in overload protection circuitry ensures outstanding reliability.

All six new models include built-in multi-tap transformers with 8/16 ohm direct modes, front baffle power tap selection and double-locking, paintable grilles.

Accessories include HY-TB1 tile bridge rails, HY-TR1 trim ring and HY-BC1 surface back-can.

The F Series ceiling speakers are individually packaged and backed with a five year warranty.

Related Products
BG-M Series Mixer/Amplifiers
BS-1030 Wall/Ceiling-Mount Box Speaker
FB-100 Corner-Mount Subwoofer
HB-1 In-Wall Subwoofer

HIGHLIGHTS
- Superior Sound Quality
- Wide-Dispersion, Smooth Off-Axis Coverage
- Fast And Easy Installation
- UL-Listed And Compliant Models
- Built-In 25/70.7 V Multi-Tap Transformer
- Low Impedance Mode (8/16 Ohms)
- Convenient Power Tap Selector On Front Baffle
- Integral Metal Back-Can And Safety Cable
- Low-Profile, Paintable Grille
- Overload Protection Circuitry
- Mounting Hardware Included
- Competitive Pricing
- Individually Packaged
- Five Year Warranty

F-122CU
FULL-RANGE PROCESSED CEILING SPEAKER (5”)
- UL1480/2043-Listed
- 5” full-range driver
- Wide-dispersion: 180° (1-4k Hz avg.)
- Optimized equalization with model E-03R module or AC-120 processor
- Power Handling: 30 W (xfmr) / 120 W (8 ohms)

F-2352C
CO-AXIAL CEILING SPEAKER (5”)
- Co-axial: 5” cone driver and dome tweeter
- Wide-dispersion: 170° conical (1-4k Hz avg.)
- Power Handling: 30 W (xfmr) / 120 W (8 ohms)

F-2852C
CO-AXIAL CEILING SPEAKER (6.5”)
- Extended bass response
- Co-axial: 6.5” cone driver and dome tweeter
- Wide-dispersion: 120° conical (1-4k Hz avg.)
- Power Handling: 60 W (xfmr) / 180 W (8 ohms)

F-2322C
FULL-RANGE CEILING SPEAKER (5”)
- 5” full-range driver
- Wide-dispersion: 170° conical (1-4k Hz avg.)
- Power Handling: 30 W (xfmr) / 120 W (8 ohms)

F-2352SC
LOW POWER CO-AXIAL CEILING SPEAKER (5”)
- Co-axial: 5” cone driver and dome tweeter
- Wide-dispersion: 155° conical (1-4k Hz avg.)
- Power Handling: 6 W (xfmr) / 18 W (8 ohms)

F-1522SC
COMPACT FULL-RANGE CEILING SPEAKER (4”)
- 4” full-range driver
- Wide-dispersion: 160° conical (1-4k Hz avg.)
- Power Handling: 6 W (xfmr) / 18 W (8 ohms)
Conventional ceiling speakers typically exhibit pronounced high frequency roll-off as you move away (off-axis) from the area directly beneath the speaker (on-axis) resulting in "dead spots" between speakers, poor intelligibility and on-axis "hot spots". The TOA F Series ceiling speakers provide up to 180° of high frequency coverage allowing you to use fewer speakers for the most cost-effective installation.

Visit www.toaelectronics.com to download:
- System Design Software
- Speaker Design Guide
- Video Animations
- EASE Data
- Installation Manuals
- Architect and Engineering Specifications
- CAD Files
- High Resolution Images
FULL-RANGE PROCESSED CEILING SPEAKER (5”)

- Ideal for applications requiring premium sound quality
- Special diffuser provides wide off-axis high frequency response
- UL-Listed for Fire Protective, General Purpose Signaling and Air-Handling Spaces (UL1480 UUMW/UEAY, UL2043)
- Ported bass-reflex design
- 5” full-range driver
- Wide-dispersion: 180° (1-4k Hz avg.)
- Frequency Response: 70 to 20k Hz
- Sensitivity: 90 dB SPL (1 W, 1 m)
- Continuous Power Handling: 120 W
- Built-in 25/70.7 V transformer (30 W max.) with 8/16 ohm direct modes
- Convenient power tap selector on front baffle
- Integral metal back-can and safety cable
- Removable terminal block with loop-through terminations
- Low-profile, paintable grille
- Overload protection circuitry
- Mounting C-ring included
- Optimized equalization with E-03R module or AC-120 dual channel processor
- Optional HY-TB1 tile rails, HY-BC1 surface-mount back-can and HY-TR1 trim ring
- Five year warranty
F-2352C
5” CO-AXIAL, 30 W

CO-AXIAL CEILING SPEAKER (5”)
- Special diffuser provides wide off-axis high frequency response
- Ported bass-reflex design
- Co-axial: 5” cone driver and dome tweeter
- Wide-dispersion: 170° conical (1-4k Hz avg.)
- Frequency Response: 70 to 20kHz
- Sensitivity: 90 dB SPL (1 W, 1 m)
- Continuous Power Handling: 120 W (8 ohms)
- Built-in 25/70.7/100 V transformer (30 W max.) with 8/16 ohm direct modes
- Convenient power tap selector on front baffle
- Metal back-can and safety cable
- UL Compliant for Air-Handling Spaces (UL2043)
- Removable terminal block with loop-through terminations
- Low-profile, paintable grille
- Overload protection circuitry
- Mounting C-ring included
- Optional HY-TB1 tile rails, HY-BC1 surface-mount back-can and HY-TR1 trim ring
- Five year warranty

SPL vs. Frequency

Beamwidth vs. Frequency

Impedance vs. Frequency

Directivity Factor vs. Frequency

Polar Response

- 100 dB SPL (1 W, 1 m)
- Frequency Response: 70 Hz to 20 kHz
- Sensitivity: 90 dB SPL (1 W, 1 m)
- Continuous Power Handling: 120 W (8 ohms)
- Built-in 25/70.7/100 V transformer (30 W max.) with 8/16 ohm direct modes
- Convenient power tap selector on front baffle
- Metal back-can and safety cable
- UL Compliant for Air-Handling Spaces (UL2043)
- Removable terminal block with loop-through terminations
- Low-profile, paintable grille
- Overload protection circuitry
- Mounting C-ring included
- Optional HY-TB1 tile rails, HY-BC1 surface-mount back-can and HY-TR1 trim ring
- Five year warranty
F-2852C
6.5" Co-Axial, 60 W

CO-AXIAL CEILING SPEAKER (6.5")
- Ideal for high ceiling applications
- Special diffuser provides wide off-axis high frequency response
- Ported bass-reflex design
- Co-axial: 6.5" cone driver and dome tweeter
- Wide-dispersion: 120º conical (1-4k Hz avg.)
- Frequency Response: 60 to 20k Hz
- Sensitivity: 91 dB SPL (1 W, 1 m)
- Continuous Power Handling: 180 W (8 ohms)
- Built-in 25/70.7/100 V transformer (30 W max.) with 8/16 ohm modes
- Convenient power tap selector on front baffle
- Metal back-can and safety cable
- UL Compliant for Air-Handling Spaces (UL2043)
- Removable terminal block with loop-through terminations
- Low-profile, paintable grille
- Overload protection circuitry
- Mounting C-ring included
- Optional HY-TB1 tile rails
- Five year warranty
F-2322C
5” Full-Range, 30 W

FULL-RANGE CEILING SPEAKER (5”)
- Ported bass-reflex design
- 5” full-range driver
- Frequency Response: 70 to 20k Hz
- Wide-dispersion: 170º conical (1-4k Hz avg.)
- Sensitivity: 90 dB SPL (1 W, 1 m)
- Continuous Power Handling: 120 W (8 ohms)
- Built-in 25/70.7/100 V transformer (30 W max.) with 8/16 ohm direct modes
- Convenient power tap selector on front baffle
- Metal back-can and safety cable
- UL Compliant for Air-Handling Spaces (UL2043)
- Removable terminal block with loop-through terminations
- Low-profile, paintable grille
- Overload protection circuitry
- Mounting C-ring included
- Optional HY-TB1 tile rails, HY-BC1 surface-mount back-can and HY-TR1 trim ring
- Five year warranty

SPL vs. Frequency

Beamwidth vs. Frequency

Impedance vs. Frequency

Directivity Factor vs. Frequency

Polar Response
F-2352SC
5” CO-AXIAL, 6 W

LOW POWER CO-AXIAL CEILING SPEAKER (5”)
- Special diffuser provides wide off-axis high frequency response
- Co-axial: 5” cone driver and dome tweeter
- Wide-dispersion: 155º conical (1-4k Hz avg.)
- Frequency Response: 80 to 20k Hz
- Sensitivity: 89 dB SPL (1 W, 1 m)
- Continuous Power Handling: 18 W (8 ohms)
- Built-in 25/70.7/100 V transformer (6 W max.) with 8/16 ohm direct modes
- Convenient power tap selector on front baffle
- Four pole push-terminal input connector
- Low-profile, paintable grille
- Dust cover to protect components
- Optional HY-BC1 surface-mount back-can and HY-RR2 mounting C-ring
- Five year warranty
F-1522SC
4” FULL-RANGE, 6 W

COMPACT FULL-RANGE CEILING SPEAKER (4”)
- Ultra-compact – only 4.2” (106 mm) deep!
- 4” full-range driver
- Wide-dispersion: 160° conical (1-4k Hz avg.)
- Frequency Response: 65 to 18k Hz
- Sensitivity: 88 dB SPL (1 W, 1 m)
- Continuous Power Handling: 18 W
- Built-in 25/70.7/100 V transformer (6 W max.) with 8/16 ohm direct modes
- Convenient power tap selector on front baffle
- Four pole push-terminal input connector
- Low-profile, paintable grille
- Dust cover to protect components
- Optional HY-RR1 mounting C-ring
- Five year warranty
F SERIES
CEILING SPEAKERS

Tel: 800-733-7088
Fax: 800-733-9766
www.toaelectronics.com

D I M E N S I O N A L  D R A W I N G S

F-122CU (5” FULL-RANGE, 30 W)

F-2352C (5” CO-AXIAL, 30 W)

F-2852C (6.5” CO-AXIAL, 60 W)

F-2352SC (5” CO-AXIAL, 6 W)

F-1522SC (4” FULL-RANGE, 6 W)

UNIT: mm
**HY-TR1**
**TRIM RING**
- Required for T-bar ceiling mounting (24”)
- Fits models F-122CU, F-2322C, F-2352C, and F-2352SC

**HY-TB1**
**TILE BRIDGE SUPPORT RAILS**
- For covering existing holes (11.8” max.) in retrofit applications
- Fits models F-122CU, F-2322C, F-2352C, and F-2352SC

**HY-BC1**
**SURFACE BACK-CAN**
- For surface-mount applications in open ceilings
- Low-gloss black paint finish
- Fits models F-122CU, F-2322C, F-2352C and F-2352SC

**AC-120**
**DUAL CHANNEL PROCESSOR FOR F-122CU**

**E-03R**
**900 SERIES PROCESSOR MODULE FOR F-122CU**
**RELATED PRODUCTS**

**BS-1030 WALL/CEILING-MOUNT BOX SPEAKER**
- Indoor and outdoor applications
- Mounting bracket included
- Paintable enclosure
- Two-way, bass-reflex design
- 70.7/100 V transformer (30 W max.) and 8-ohm direct mode
- Screwdriver-adjustable tap settings
- Black (BS-1030B) and White (BS-1030W)
- Five year warranty

**FB-100 CORNER-MOUNT SUBWOOFER**
- Compact cabinet design fits flush into corners
- Tuned, ported enclosure for deep bass and low distortion
- Acoustic bandpass filter design
- Floor, wall, corner or ceiling-mount
- High power handling (450 W Cont. Program)
- Extended low frequency response
- Heavy-duty loudspeaker component
- Solid, vibration-free construction
- Paintable black finish
- Removable terminal block with loop-through terminations
- Six rigging points for suspended mounting
- Five year warranty

**BG-M SERIES MODULAR MIXER/AMPLIFIERS**
- Compact five channel mixer/amplifiers
- Four models: BG-1015 (15 W), BG-1030 (30 W), BG-1060 (60 W), BG-1120 (120 W)
- 900 Series module slot
- Mic, Tel, Program and Aux inputs
- Music-on-hold output
- 25 V, 70.7 V and 4 ohm speaker outputs
- Optional rack-mount kit
- UL/cUL listed
- Five year warranty

**P1 1**

**BG-M SERIES MODULAR MIXER/AMPLIFIERS**
- Compact five channel mixer/amplifiers
- Four models: BG-1015 (15 W), BG-1030 (30 W), BG-1060 (60 W), BG-1120 (120 W)
- 900 Series module slot
- Mic, Tel, Program and Aux inputs
- Music-on-hold output
- 25 V, 70.7 V and 4 ohm speaker outputs
- Optional rack-mount kit
- UL/cUL listed
- Five year warranty
<table>
<thead>
<tr>
<th>Model</th>
<th>F-2852C</th>
<th>F-2322C</th>
<th>F-2352C</th>
<th>F-122CU</th>
<th>F-2352SC</th>
<th>F-1522SC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>Co-axial</td>
<td>Full-Range</td>
<td>Co-axial</td>
<td>Full-Range</td>
<td>Co-axial</td>
<td>Full-Range</td>
</tr>
<tr>
<td><strong>Enclosure</strong></td>
<td>Bass-reflex type</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Rated Input</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(high impedance)</td>
<td>60 W</td>
<td>30 W</td>
<td>30 W</td>
<td>30 W</td>
<td>6 W</td>
<td>6 W</td>
</tr>
<tr>
<td><strong>Dispersion</strong></td>
<td>120 degrees</td>
<td>170 degrees</td>
<td>170 degrees</td>
<td>180 degrees (hemispherical)</td>
<td>155 degrees</td>
<td>160 degrees</td>
</tr>
<tr>
<td><strong>Power Handling Capacity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Continuous Pink Noise:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>90 W (8 ohms)</td>
<td>60 W (8 ohms)</td>
<td>60 W (16 ohms)</td>
<td>30 W (16 ohms)</td>
<td>30 W (8 ohms)</td>
<td>30 W (16 ohms)</td>
<td>6 W (8 ohms)</td>
</tr>
<tr>
<td><strong>Continuous Program:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>180 W (8 ohms)</td>
<td>120 W (8 ohms)</td>
<td>60 W (16 ohms)</td>
<td>18 W (8 ohms)</td>
<td>12 W (8 ohms)</td>
<td>18 W (8 ohms)</td>
<td>6 W (16 ohms)</td>
</tr>
<tr>
<td><strong>Impedance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>70.7 V:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 W (83 ohms)</td>
<td>30 W (170 ohms)</td>
<td>15 W (330 ohms)</td>
<td>7.5 W (670 ohms)</td>
<td>1.5 W (3.3k ohms)</td>
<td>30 W (170 ohms)</td>
<td>15 W (330 ohms)</td>
</tr>
<tr>
<td><strong>25 V:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.5 W (83 ohms)</td>
<td>3.7 W (170 ohms)</td>
<td>1.9 W (330 ohms)</td>
<td>0.9 W (670 ohms)</td>
<td>0.2 W (3.3k ohms)</td>
<td>0.9 W (670 ohms)</td>
<td>0.2 W (3.3k ohms)</td>
</tr>
<tr>
<td><strong>100 V:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 W (170 ohms)</td>
<td>30 W (330 ohms)</td>
<td>15 W (670 ohms)</td>
<td>3 W (3.3k ohms)</td>
<td>3 W (3.3k ohms)</td>
<td>3 W (3.3k ohms)</td>
<td>3 W (3.3k ohms)</td>
</tr>
<tr>
<td><strong>Low Impedance (adjustable)</strong></td>
<td>8 and 16 ohm direct mode (transformer bypass)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sensitivity</strong> (1 W, 1 m)</td>
<td>91 dB SPL</td>
<td>90 dB SPL</td>
<td>90 dB SPL</td>
<td>90 dB SPL</td>
<td>89 dB SPL</td>
<td>88 dB SPL</td>
</tr>
<tr>
<td><strong>Frequency Response</strong></td>
<td>60 - 20 kHz (-10 dB)</td>
<td>45 - 20 kHz (-20 dB)</td>
<td>45 - 20 kHz (-10 dB)</td>
<td>50 - 20 kHz (-20 dB)</td>
<td>65 - 18 kHz (-10 dB)</td>
<td>45 - 20 kHz (-20 dB)</td>
</tr>
<tr>
<td><strong>Speaker Component</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>High Frequency</strong></td>
<td>Dome-type</td>
<td>Balanced dome-type</td>
<td>Balanced dome-type</td>
<td>Balanced dome-type</td>
<td>3.94”(10 cm) cone-type</td>
<td></td>
</tr>
<tr>
<td><strong>Low Frequency</strong></td>
<td>6.3”(16 cm) cone-type</td>
<td>4.72”(12 cm) cone-type</td>
<td>4.72”(12 cm) cone-type</td>
<td>4.72”(12 cm) cone-type</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mounting Hole</strong></td>
<td>9.84”(250 mm)</td>
<td>7.87”(200 mm)</td>
<td>5.31”(135 mm)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Baffle</strong></td>
<td>Fire-resistant ABS resin (resin material grade; UL-94 V-0 or equivalent), black</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Rim</strong></td>
<td>Fire-resistant ABS resin (resin material grade; UL-94 V-0 or equivalent), white, paint</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Punched Net</strong></td>
<td>Steel plate, plating</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dust-proof Bag</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dimensions</strong> (grille diameter x depth)</td>
<td>11.02”x 8.94” (280 x 227 mm)</td>
<td>9.06”x 7.87” (230 x 220 mm)</td>
<td>9.06”x 9.02” (230 x 229 mm)</td>
<td>9.06”x 9.02” (230 x 229 mm)</td>
<td>9.06”x 6.06” (230 x 154 mm)</td>
<td>6.10”x 4.61” (155 x 117 mm)</td>
</tr>
<tr>
<td><strong>Weight</strong> (including mounting accessories)</td>
<td>11.24 lbs (5.1 kg)</td>
<td>8.16 lbs (3.7 kg)</td>
<td>8.16 lbs (3.7 kg)</td>
<td>8.16 lbs (3.7 kg)</td>
<td>3.31 lbs (1.5 kg)</td>
<td>2.2 lbs (1 kg)</td>
</tr>
<tr>
<td><strong>Accessories</strong></td>
<td>Grille/Panel, Ceiling Reinforcement Ring, Safety Wire, Cutout Paper Pattern</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Options</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surface-Mount Back Can</td>
<td>—</td>
<td>HY-TB1</td>
<td>HY-BT1</td>
<td>HY-BC1</td>
<td>HY-BC1</td>
<td>—</td>
</tr>
<tr>
<td>Tile Bar Bridge</td>
<td>—</td>
<td>HY-TB1</td>
<td>HY-TR1</td>
<td>HY-TR1</td>
<td>HY-BT1</td>
<td>HY-TR1</td>
</tr>
<tr>
<td>Trim Ring</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>HY-RR1</td>
</tr>
<tr>
<td>Ceiling Reinforcement Ring Electronic Controller</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>AC-120 or E-03R</td>
<td>—</td>
</tr>
<tr>
<td><strong>Input Terminal</strong></td>
<td>Removable locking connector (Phoenix-type) with screw-down terminals (2 input terminals and 2 bridge terminals)</td>
<td>Push-in connector (Bridging terminal-2 branch type)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Usable Cable</strong></td>
<td>Stranded / solid copper wire: AWG No. 24 - 14</td>
<td>Solid copper wire: AWG No. 20 - 15</td>
<td>Stranded copper wire: AWG No. 18 - 17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Enclosure</strong></td>
<td>—</td>
<td>Artifical fiber, black</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dusted Bag</strong></td>
<td>—</td>
<td>Artificial fiber, black</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>