




# MULTI-CHANNEL DIGITAL POWER AMPLIFIERS

DA-250F/250FH/250D/250DH/550F/500FH



***Top-of-the-line operation and  
performance efficiency***



# Full Digital Amplifier\*

\*Amplifiers feature switching-mode power supply and Class-D technology.

## **TOA Digital Amplifier technology redefines the very concept of amplifiers.**

The power supply unit is the heart of the amplifier. To ensure consistently high performance and reliable operation, TOA engineers have given the DA Series a system that provides power independently to each of the four channels.

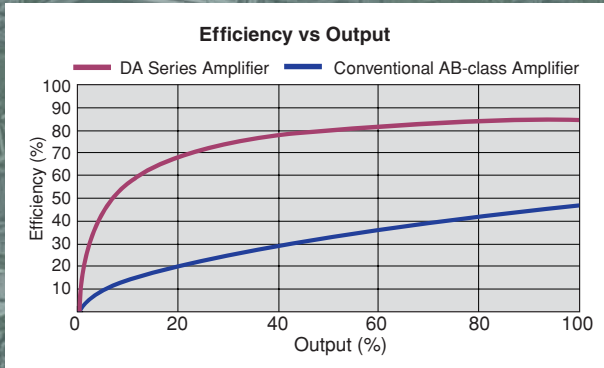
This testifies to TOA's attitude to product development, which is always totally motivated by the desire to provide high-quality products that offer worry-free use.

Never compromise —  
that's the TOA philosophy.

# FEATURES

## High efficiency

Extremely high amplification efficiency of 80-90%, resulting in reduction in power consumption by more than 60% compared with Class-AB amplifiers.



## Amplifier with world-class lightweight design\*

Installation has become much easier thanks to the lightweight design.

\*TOA comparative data (weight/watt)

## Compact design

The DA-250 Series is 1-unit size and the DA-500 Series is 2-unit size, and they can be efficiently mounted on a rack, so they require only a small installation space. Because the amplifiers do not generate much heat, 5 units can be stacked together in a rack.

## Highly durable

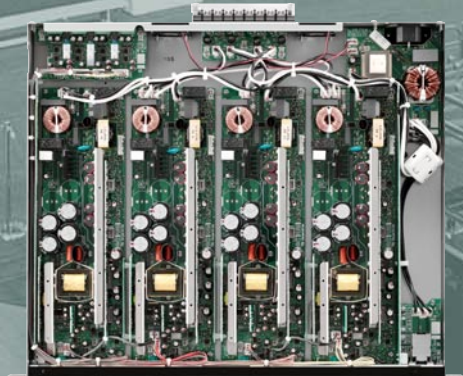
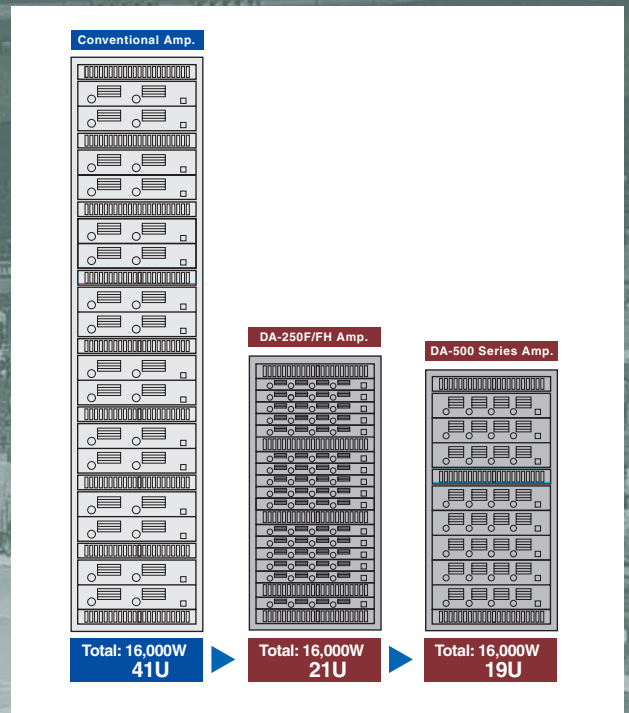
Stands up to extended hours of operation. The DA amplifier has undergone a large number of rigorous tests to prove its durability. In addition, TOA has been conducting a "non-stop driving test" of the DA Series.

## High reliability

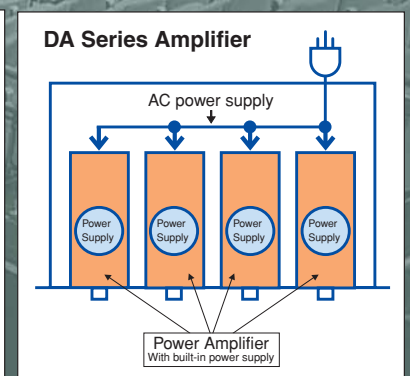
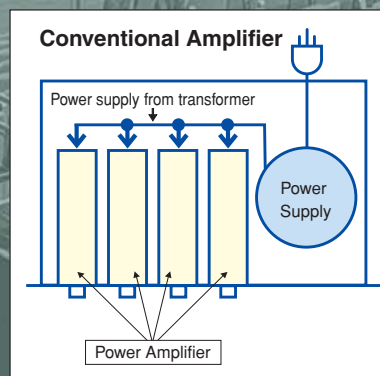
The DA amplifier has a comprehensive protection circuitry for protection against excessive current flow due to overload, short circuit, unusual DC voltage output, power amplifier heat sink temperature rise (DA-250D/DH, DA-550F/500FH: over 100°C, DA-250F/FH: over 110°C), power supply temperature rise (DA-550F/500FH: over 80°C), and temperature rise inside the unit (DA-250D/DH, DA-250F/FH: over 80°C).

## Independent power supply

Each of the channels has its own power supply. If the power supply of Channel 1 should fail, this won't affect the operation of Channels 2-4. It is also possible to use one of the channels as a spare amplifier.



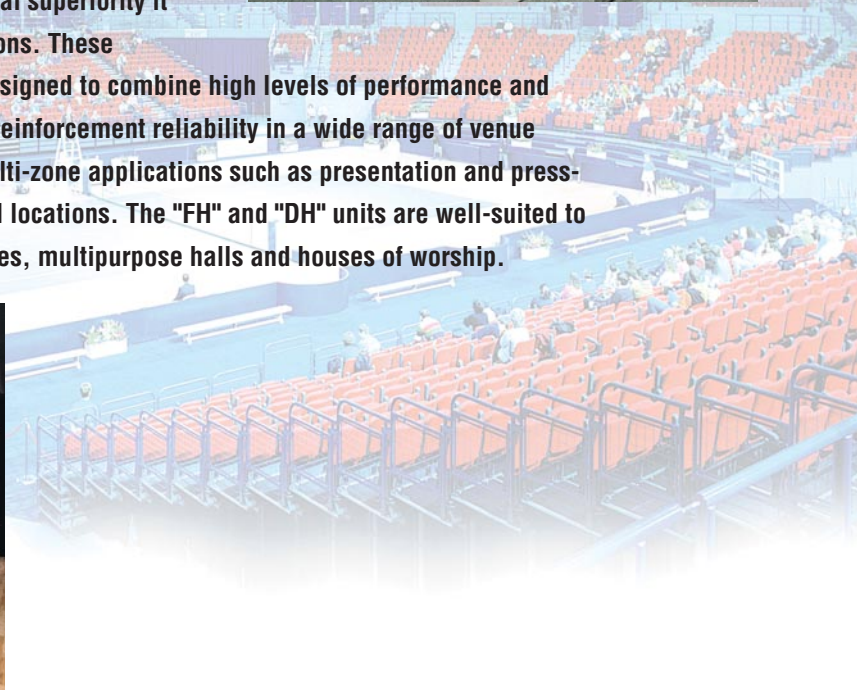
Inside of DA-250F/FH model.





## Design optimization for efficient and reliable high-level performance

The TOA DA-250F/FH, DA-250D/DH and DA-550F/500FH multi-channel power amplifiers offer a wider choice of power ratings, advanced Class D amplification circuitry, and a highly efficient AC mains to output power ratio, for the complete technological superiority it takes to support long-term installation applications. These energy-efficient, space-saving amplifiers are designed to combine high levels of performance and efficiency, and are well-suited to ensure sound reinforcement reliability in a wide range of venue types. The "F" and "D" models are ideal for multi-zone applications such as presentation and press-conference rooms, restaurants and similar-sized locations. The "FH" and "DH" units are well-suited to such locations as exhibition halls, sports facilities, multipurpose halls and houses of worship.





DA-250D (rear)



DA-250F (rear)



DA-500FH (rear)

## OPTION

### MT-251H

#### Matching Transformer



<b>Capacity:</b>	0 – 250W
<b>Primary impedance:</b>	100V line: 40Ω (250W), 70V line: 19.6Ω (250W)
<b>Secondary impedance:</b>	100V line: 40Ω (250W), 70V line: 19.6Ω (250W), 50V line: 10Ω (250W), 35V line: 4.9Ω (250W)
<b>Frequency response:</b>	30Hz – 18kHz (+0dB, -3dB)
<b>Connection terminal:</b>	M3 screw terminal, distance between barriers: 6.6mm
<b>Dimensions:</b>	108(W) × 122(H) × 80(D) mm
<b>Weight:</b>	2.4kg

# SPECIFICATIONS

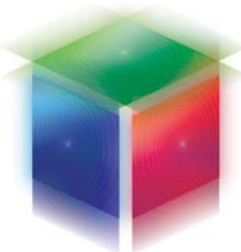
Model	DA-250F	DA-250FH	DA-250D	DA-250DH	DA-550F	DA-500FH
<b>Power Requirement</b>	220 – 240V AC, 50/60Hz					
<b>Number of Channels</b>	4		2		4	
<b>Total Output All Channel Driven</b>	1000W (1kHz, 4Ω) 680W (1kHz, 8Ω)	1000W (1kHz, 40Ω: 100V line)	500W (1kHz, 4Ω) 340W (1kHz, 8Ω)	500W (1kHz, 40Ω: 100V line)	2200W (1kHz 4Ω) 1400W (1kHz, 8Ω)	2000W (1kHz, 20Ω: 100V line)
<b>Output Voltage per Channel</b>	31.6V (1kHz, 4Ω) 36.9V (1kHz, 8Ω)	100V (1kHz, 40Ω: 100V line)	31.6V (1kHz, 4Ω) 36.9V (1kHz, 8Ω)	100V (1kHz, 40Ω: 100V line)	46.9V (1kHz, 4Ω) 52.9V (1kHz, 8Ω)	100V (1kHz, 20Ω: 100V line)
<b>Output Current per Channel</b>	7.9A (1kHz, 4Ω) 4.6A (1kHz, 8Ω)	2.5A (1kHz, 40Ω: 100V line)	7.9A (1kHz, 4Ω) 4.6A (1kHz, 8Ω)	2.5A (1kHz, 40Ω: 100V line)	11.7A (1kHz, 4Ω) 6.6A (1kHz, 8Ω)	5A (1kHz, 20Ω: 100V line)
<b>Power Output</b>						
8 ohms per channel	170W	—	170W	—	350W	—
4 ohms per channel	250W	—	250W	—	550W	—
16 ohms bridged	340W	—	340W	—	700W	—
8 ohms bridged	500W	—	500W	—	1100W	—
Hi-Z: 100V per channel	—	250W	—	250W	—	500W
<b>Power Consumption*</b>						
Idle power consumption	48W, 0.3A	75W, 0.5A	27W, 0.3A	46W, 0.5A	57W, 0.4A	65W, 0.5A
Rated power consumption						
1kHz	8 ohms 800W, 5.8A 4 ohms 1200W, 8.7A 100 Volts —	— — 1150W, 8.3A	400W, 2.8A 620W, 4.2A —	— — 580W, 3.9A	1550W, 11.3A 2750W, 19.9A —	— — 2300W, 16.8A
1/8 Power Pink noise*1	8 ohms 167W, 1.2A 4 ohms 248W, 1.6A 100 Volts —	— — 270W, 1.9A	95W, 0.8A 126W, 0.9A —	— — 143W, 1.1A	325W, 2.2A 442W, 2.7A —	— — 493W, 3.1A
1/3 Power Pink noise*2	8 ohms 349W, 2.4A 4 ohms 511W, 3.7A 100 Volts —	— — 491W, 3.5A	184W, 1.3A 267W, 1.9A —	— — 278W, 2.0A	733W, 5.1A 1119W, 8.0A —	— — 1026W, 7.4A
1/8 Power 1kHz	8 ohms 143W, 1.0A 4 ohms 202W, 1.4A 100 Volts —	— — 230W, 1.6A	79W, 0.7A 110W, 0.9A —	— — 128W, 1.0A	273W, 1.8A 411W, 2.7A —	— — 399W, 2.6A
1/3 Power 1kHz	8 ohms 284W, 1.9A 4 ohms 437W, 3.0A 100 Volts —	— — 443W, 3.0A	150W, 1.1A 215W, 1.5A —	— — 237.7W, 1.7A	632W, 4.4A 958W, 6.9A —	— — 860W, 6.1A
<b>Frequency Response</b>	20Hz – 20kHz (±1dB)	50Hz – 20kHz (-3dB, +1dB)	20Hz – 20kHz (±1dB)	50Hz – 20kHz (-3dB, +1dB)	20Hz – 20kHz (-2dB, +1dB)	50Hz – 20kHz (-3dB, +1dB)
<b>THD</b>	0.1 % (1kHz) 0.3 % (20Hz – 20kHz)	0.1 % (1kHz) 0.3 % (100Hz – 20kHz)	0.1 % (1kHz) 0.3 % (20Hz – 20kHz)	0.1 % (1kHz) 0.3 % (100Hz – 20kHz)	0.1 % (1kHz) 0.15 % (20Hz – 20kHz)	0.1 % (1kHz) 0.3 % (100Hz – 20kHz)
<b>S/N Ratio (A weighted)</b>	100dB					
<b>Crosstalk at 10kHz (A weighted)</b>	70dB					
<b>DC Offset*</b>	±5mV					
<b>Voltage Gain*</b>	29.5dB	38.2dB	29.5dB	38.2dB	32.6dB	38.2dB
<b>Damping Factor*</b>	100 (1kHz, 8Ω)	300 (1kHz, 40Ω: 100V line)	100 (1kHz, 8Ω)	300 (1kHz, 40Ω: 100V line)	95 (1kHz, 8Ω)	240 (1kHz, 20Ω: 100V line)
<b>Inputs</b>	Input impedance 10kΩ (unbalanced), 20kΩ (balanced) Input sensitivity +4dB (1.23V) Input clipping 14V (25.1dBu)				10kΩ (unbalanced), 20kΩ (balanced) +4dB (1.23V) 12V (23.8dBu)	
<b>Protection Circuit</b>	Amplifier section DC output, overheat protection, load shorting, overload current, maximum output Power supply section Overheat protection, AC rush current					
<b>Operating Temperature</b>	-10°C to +40°C					
<b>Operating Humidity</b>	Under 90% RH (no condensation)					
<b>Dimensions</b>	482 (W) × 44 (H) × 401.8 (D)mm				482 (W) × 88.4 (H) × 404.2 (D)mm	
<b>Weight</b>	6.8kg		5.3kg		9kg	
<b>Finish</b>	Panel: Aluminum, alumite process, black/Case: Plated steel sheet					
<b>Accessories</b>	Power cord(2m) × 1, Euro style terminal block connector (3-pin) × 4, Tamper-proof cap × 4, Rack mounting screw × 4		Power cord(2m) × 1, Euro style terminal block connector (3-pin) × 2, Tamper-proof cap × 2, Rack mounting screw × 2		Power cord(2m) × 1, Euro style terminal block connector (3-pin) × 4, Tamper-proof cap × 4, Rack mounting screw × 4	
<b>Option</b>	—	Matching transformer: MT-251H	—	Matching transformer: MT-251H	—	Matching transformer: MT-251H

0dB=0.775Vrms

\*Typical data

\*1 1/8 power with pink noise represents typical program with occasional clipping.

\*2 1/3 power with pink noise represents severe program with heavy clipping.



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Sound & Communication

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