TOA

MULTI-CHANNEL DIGITAL POWER AMPLIFIERS

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

Top-of-the-line operation and performance efficiency

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

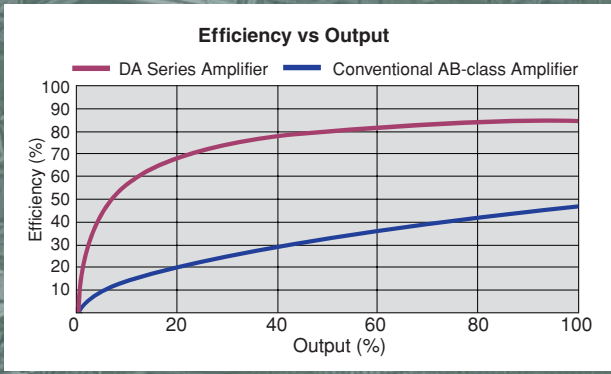
TOA Digital Amplifier technology redefines the very concept of amplifiers.

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.



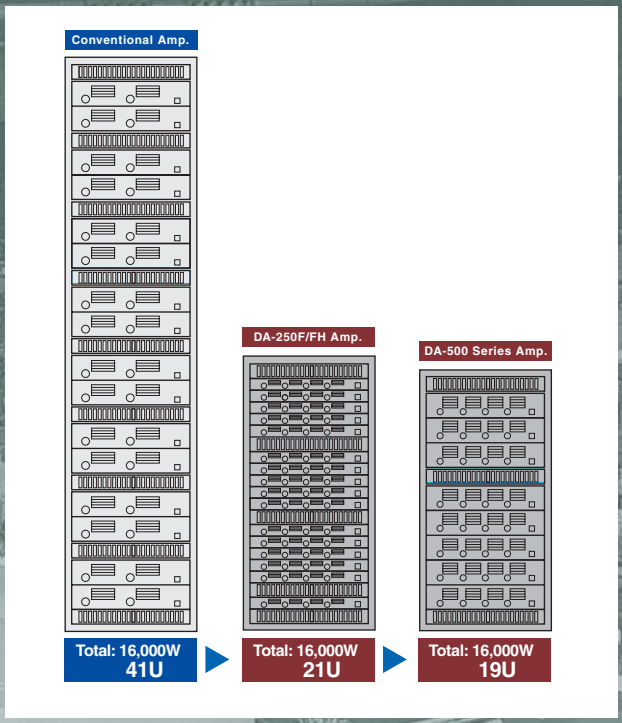
Amplifier with world-class lightweight design*

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

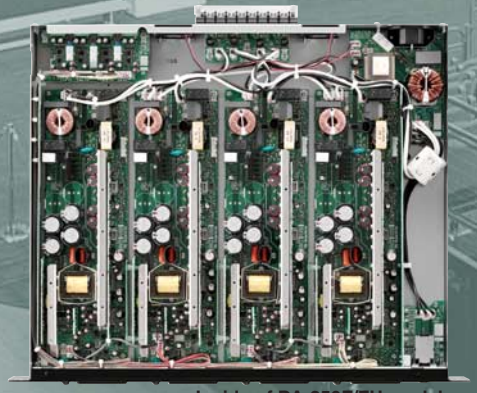
Stands up to extended hours of operation. The DA amplifier has undergone a large number of rigorous tests to prove its durability. In addition, TOA has been conducting a “non-stop driving test” of the DA Series.

High reliability

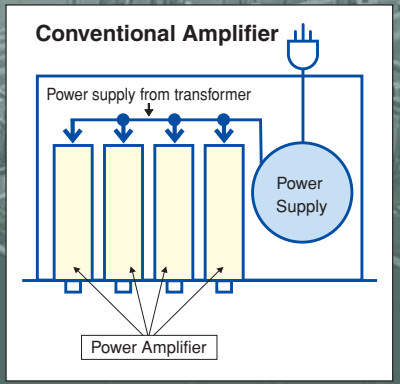
The DA amplifier has a comprehensive protection circuitry for protection against excessive current flow due to overload, short circuit, unusual DC voltage output, power amplifier heat sink temperature rise (DA-250D/DH, DA-550F/500FH: over 100°C, DA-250F/FH: over 110°C), power supply temperature rise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

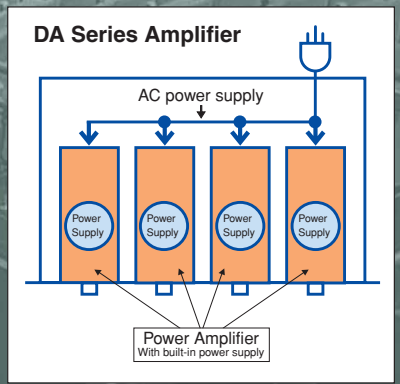
Independent power supply

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

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

SPECIFICATIONS

Model	DA-250F	DA-250FH	DA-250D	DA-250DH	DA-550F	DA-500FH
Power Requirement	220 – 240V AC, 50/60Hz					
Number of Channels	4		2		4	
Total Output All Channel Driven	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)
Output Voltage per Channel	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)
Output Current per Channel	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)
Power Output						
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
Power Consumption*						
Idle power consumption	48W, 0.3A	75W, 0.5A	27W, 0.3A	46W, 0.5A	57W, 0.4A	65W, 0.5A
Rated power consumption						
8 ohms 1kHz	800W, 5.8A	—	400W, 2.8A	—	1550W, 11.3A	—
4 ohms	1200W, 8.7A	—	620W, 4.2A	—	2750W, 19.9A	—
100 Volts	—	1150W, 8.3A	—	580W, 3.9A	—	2300W, 16.8A
1/8 Power 8 ohms Pink noise	167W, 1.2A	—	95W, 0.8A	—	325W, 2.2A	—
4 ohms	248W, 1.6A	—	126W, 0.9A	—	442W, 2.7A	—
100 Volts	—	270W, 1.9A	—	143W, 1.1A	—	493W, 3.1A
1/3 Power 8 ohms	349W, 2.4A	—	184W, 1.3A	—	733W, 5.1A	—
4 ohms	511W, 3.7A	—	267W, 1.9A	—	1119W, 8.0A	—
100 Volts	—	491W, 3.5A	—	278W, 2.0A	—	1026W, 7.4A
1/8 Power 8 ohms 1kHz	143W,1.0A	—	79W, 0.7A	—	273W, 1.8A	—
4 ohms	202W, 1.4A	—	110W, 0.9A	—	411W, 2.7A	—
100 Volts	—	230W, 1.6A	—	128W, 1.0A	—	399W, 2.6A
1/3 Power 8 ohms	284W, 1.9A	—	150W, 1.1A	—	632W, 4.4A	—
4 ohms	437W, 3.0A	—	215W, 1.5A	—	958W, 6.9A	—
100 Volts	—	443W, 3.0A	—	237.7W, 1.7A	—	860W, 6.1A
Frequency Response	20Hz – 20kHz (±1dB)	50Hz – 20kHz (-3dB, +1dB)	20Hz – 20kHz (±1dB)	50Hz – 20kHz (-3dB, +1dB)	20Hz – 20kHz (–2dB, +1dB)	50Hz – 20kHz (-3dB, +1dB)
THD	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)
S/N Ratio (A weighted)	100dB					
Crosstalk at 10kHz (A weighted)	70dB					
DC Offset*	±5mV					
Voltage Gain*	29.5dB	38.2dB	29.5dB	38.2dB	32.6dB	38.2dB
Damping Factor*	100 (1kHz, 8Ω)	300 (1kHz, 40Ω: 100V line)	100 (1kHz, 8Ω)	300 (1kHz, 40Ω: 100V line)	95 (1kHz, 8Ω)	240 (1kHz, 20Ω: 100V line)
Inputs Input impedance	10kΩ (unbalanced), 20kΩ (balanced)				10kΩ (unbalanced), 20kΩ (balanced)	
Input sensitivity	+4dB (1.23V)				+4dB (1.23V)	
Input clipping	14V (25.1dBu)				12V (23.8dBu)	
Protection Circuit						
Amplifier section	DC output, overheat protection, load shorting, overload current, maximum output					
Power supply section	Overheat protection, AC rush current					
Cooling	Continuously constant speed fan with front-to-rear airflow, 50,000 hours life time at 25°C				Continuously constant speed fan with front-to-rear airflow, 100,000 hours life time at 25°C	
Operating Temperature	–10°C to +40°C					
Operating Humidity	Under 90% RH (no condensation)					
Dimensions	482 (W) × 44 (H) × 401.8 (D)mm				482 (W) × 88.4 (H) × 404.2 (D)mm	
Weight	6.8kg		5.3kg		9kg	
Finish	Panel: Aluminum, alumite process, black/Case: Plated steel sheet					
Accessories	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	
Option	—	Matching transformer: MT-251H	—	Matching transformer: MT-251H	—	Matching transformer: MT-251H

0dB=0.775Vrms
*Typical data

Human Society with Sound & Communication

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