TOA

MULTI-CHANNEL DIGITAL POWER AMPLIFIERS

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

Top-of-the-line operation and performance efficiency

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

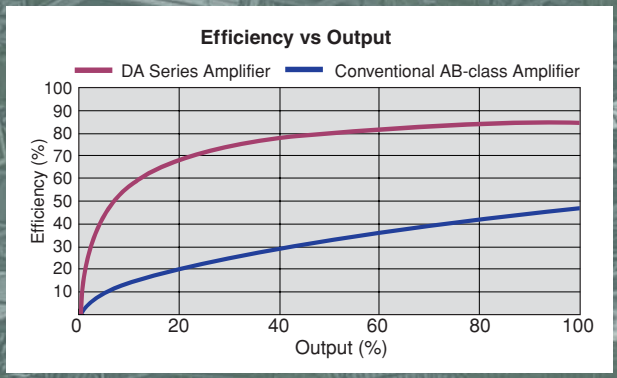
TOA Digital Amplifier technology redefines the very concept of amplifiers.

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 channel.
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.



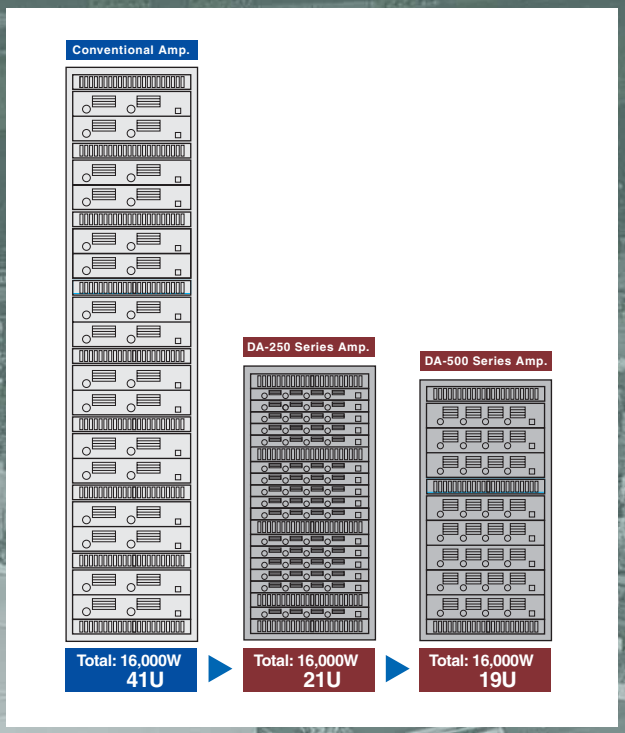
Amplifier with world-class lightweight design*

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

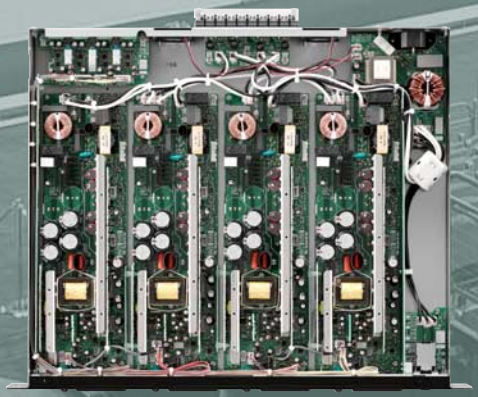
Stands up to extended hours of operation. The DA amplifier has undergone a large number of rigorous tests to prove its durability. In addition, TOA has been conducting a “non-stop driving test” of the DA Series.

High reliability

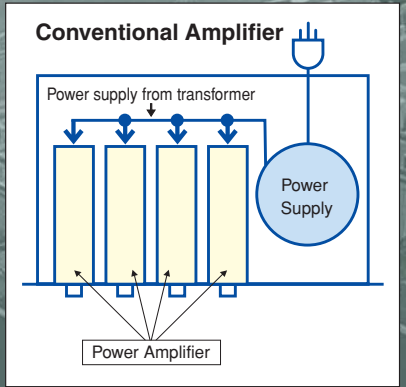
The DA amplifier has a comprehensive protection circuitry for protection against excessive current flow due to overload, short circuit, unusual DC voltage output, and heat sink temperature rise (DA-250D/DH, DA-550F/500F-HL: over 100°C, DA-250F/FH: over 110°C).

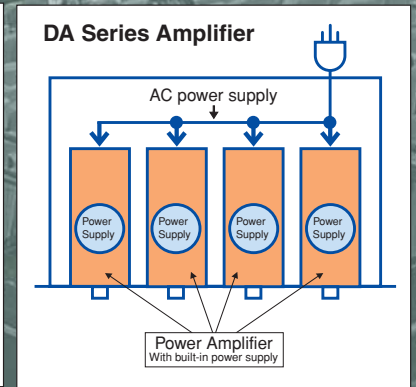
Independent power supply

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 (Channel 2 in case of DA-250D/DH). 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/500F-HL multi-channel power amplifiers offer a wider choice of power ratings, advanced digital 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 low-impedance models are ideal for multi-zone applications such as presentation and press-conference rooms, restaurants and similar-sized locations. The high-impedance 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-500F-HL (rear)

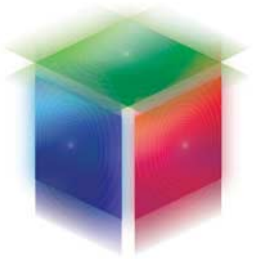
MT-251H
Matching Transformer (option)

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:	30 – 18,000Hz (+0dB, –3dB)
Connection Terminal:	M3 screw terminal, distance between barriers: 6.6mm
Dimensions:	108(W) × 80(D) × 122(H) mm (4.25" × 3.15" × 4.8")
Weight:	2.4kg (5.29 lb)

SPECIFICATIONS

Model	DA-250F	DA-250FH	DA-250D	DA-250DH	DA-550F	DA-500F-HL
Power Req.	120V AC, 50/60Hz					
Number of Channels	4		2		4	
Total Output All Channel Driven	1000W (1kHz, 4Ω) 680W (1kHz, 8Ω)	1000W (1kHz, 19.6Ω)	500W (1kHz, 4Ω) 340W (1kHz, 8Ω)	500W (1kHz, 19.6Ω)	2200W (1kHz 4Ω) 1400W (1kHz, 8Ω)	400W (1kHz, 4Ω) 2200W (1kHz, 8Ω) 2000W (1kHz, 9.8Ω)
Output Voltage per Channel	31.6V (1kHz, 4Ω) 36.9V (1kHz, 8Ω)	70V (1kHz, 19.6Ω)	31.6V (1kHz, 4Ω) 36.9V (1kHz, 8Ω)	70V (1kHz, 19.6Ω)	46.9V (1kHz, 4Ω) 52.9V (1kHz, 8Ω)	20V (1kHz, 4Ω) 66.3V (1kHz, 8Ω) 70V (1kHz, 9.8Ω)
Output Current per Channel	7.9A (1kHz, 4Ω) 4.6A (1kHz, 8Ω)	3.6A (1kHz, 19.6Ω)	7.9A (1kHz, 4Ω) 4.6A (1kHz, 8Ω)	3.6A (1kHz, 19.6Ω)	11.7A (1kHz, 4Ω) 6.6A (1kHz, 8Ω)	5A (1kHz, 4Ω) 8.3A (1kHz, 8Ω) 7.1A (1kHz, 9.8Ω)
Power Output						
8 ohms per channel	170W	—	170W	—	350W	550W
4 ohms per channel	250W	—	250W	—	550W	100W*1
16 ohms bridged	340W	—	340W	—	700W	1100W
8 ohms bridged	500W	—	500W	—	1100W	—
Hi-Z: 70V per channel	—	250W	—	250W	—	500W
Hi-Z: 140V bridged, per channel	—	500W	—	500W	—	1000W
Power Consumption*						
Idle power consumption	56W, 1.0A	58W, 1.0A	28W, 0.5A	35W, 0.7A	63W, 1.2A	69W, 1.3A
Rated power consumption						
1kHz 8 ohms	850W, 11.7A	—	420W, 5.9A	—	1650W, 22.4A	2600W, 33.2A
4 ohms	1300W, 16.9A	—	650W, 8.7A	—	2800W, 35.5A	580W, 9.1A
70 Volts	—	1200W, 15.9A	—	580W, 7.8A	—	2350W, 30.4A
1/8 Power Pink noise*2 8 ohms	183W, 3.0A	—	102W, 1.7A	—	317W, 5.2A	504W, 7.4A
4 ohms	257W, 4.2A	—	132W, 2.3A	—	658W, 9.7A	171W, 2.9A
70 Volts	—	265W, 4.1A	—	147W, 2.3A	—	437W, 6.7A
1/3 Power Pink noise*3 8 ohms	362W, 5.4A	—	197W, 3.1A	—	667W, 9.5A	1080W, 15.2A
4 ohms	597W, 8.6A	—	308W, 4.4A	—	1060W, 14.0A	313W, 4.9A
70 Volts	—	609W, 8.5A	—	311W, 4.5A	—	1036W, 13.9A
1/8 Power 1kHz 8 ohms	152W, 2.5A	—	84W, 1.4A	—	277W, 4.5A	410W, 6.3A
4 ohms	219W, 3.5A	—	112W, 1.8A	—	510W, 7.6A	151W, 2.7A
70 Volts	—	224W, 3.6A	—	123W, 2.0A	—	374W, 5.9A
1/3 Power 1kHz 8 ohms	314W, 4.7A	—	160W, 2.5A	—	519W, 8.6A	991W, 13.5A
4 ohms	507W, 7.3A	—	222W, 3.4A	—	958W, 13.0A	260W, 4.3A
70 Volts	—	499W, 7.2A	—	256W, 3.8A	—	883W, 12.2A
Frequency Response	20Hz – 20kHz (±1dB)	HPF ON: 50Hz – 20kHz (–3dB, 0dB) HPF OFF: 20Hz – 20kHz (±1dB)	20Hz – 20kHz (±1dB)	HPF ON: 50Hz – 20kHz (–3dB, 0dB) HPF OFF: 20Hz – 20kHz (±1dB)	20Hz – 20kHz (–2dB, +1dB)	HPF ON: 50Hz – 20kHz (–3dB, +1dB) HPF OFF: 20Hz – 20kHz (–2dB, +1dB)
THD	0.1 % (1kHz) 0.3 % (20Hz – 20kHz)	HPF ON: 0.1 % (1kHz), 0.3 % (100Hz – 20kHz) HPF OFF: 0.1 % (1kHz), 0.3 % (20Hz – 20kHz)	0.1 % (1kHz) 0.3 % (20Hz – 20kHz)	HPF ON: 0.1 % (1kHz), 0.3 % (100Hz – 20kHz) HPF OFF: 0.1 % (1kHz), 0.3 % (20Hz – 20kHz)	0.1 % (1kHz) 0.15 % (20Hz – 20kHz)	0.1 % (1kHz) HPF ON: 0.3 % (100Hz – 20kHz) HPF OFF: 0.3 % (20Hz – 20kHz)
S/N Ratio (A weighted)	100dB					
Crosstalk at 10kHz (A weighted)	70dB					
DC Offset*	±5mV					
Voltage Gain*	29.5dB	35.1dB	29.5dB	35.1dB	32.6dB	35.1dB
Damping Factor*	100	220	100	220	95	115
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 (14°F to 104°F)					
Operating Humidity	Under 90% RH (no condensation)					
Dimensions	482 (W) × 44 (H) × 401 (D)mm (18.98" × 1.73" × 15.79")				482 (W) × 88.4 (H) × 404.2 (D)mm (18.98" × 3.48" × 15.91")	
Weight	6.6kg (14.6 lb)		5kg (11.02 lb)		8.8kg (19.4 lb)	
Finish	Panel: Aluminum, alumite process, black/Case: Plated steel sheet					
Accessory	Euro style terminal block connector (3-pin) × 4, Tamper-proof cap × 4		Euro style terminal block connector (3-pin) × 2, Tamper-proof cap × 2		Euro style terminal block connector (3-pin) × 4, Tamper-proof cap × 4	
Option	—	Matching transformer: MT-251H	—	Matching transformer: MT-251H	—	Matching transformer: MT-251H

0dB=0.775Vrms
*Typical data
*1 For a 4Ω speaker, max. output is limited to 100W.
*2 1/8 power with pink noise represents typical program with occasional clipping.
*3 1/3 power with pink noise represents severe program with heavy clipping.



Human Society with Sound & Communication

TOA Corporation
www.toa.jp
Specifications are subject to change without notice.
Printed in Japan (0803) 833-52-362-4A u