



## 7700 Series

### 5-kVA, DC-enabled Linear Power Amplifiers

#### Performance Overview:

- Up to 5000 watts RMS power output
- Small-signal response up to 250 kHz
- Up to 85A at 13.5V DC
- Fast, >35 V/ $\mu$ s slew rate
- 3 m $\Omega$  output impedance
- Can be series or parallel connected to create systems of up to 20 kW

#### Features

- Stable when driving highly capacitive loads.
- Field-selectable controlled-voltage or controlled-current operation.
- Full four-quadrant operation; able to source and sink current.
- Protection circuits guard against over/under voltage, over current, over temperature, and circulating ground currents.

#### 7794

AC Power at 20 kHz: 5000 watts RMS (0.5-ohm load);  
50 V<sub>RMS</sub>, 100 A<sub>RMS</sub>  
Small Signal: 28V<sub>p-p</sub> to 250 kHz  
DC Power: 60A at 13.5 VDC  
Output Voltage:  $\pm 100$  V<sub>p</sub>

#### 7796

AC Power at 20 kHz: 5000 watts RMS (2-ohm load);  
100 V<sub>RMS</sub>, 50 A<sub>RMS</sub>  
Small Signal: 28V<sub>p-p</sub> to 250 kHz  
DC Power: 30A at 28 VDC (13.5 VDC not recommended)  
Output Voltage:  $\pm 180$  V<sub>p</sub>

#### 7796HC

AC Power at 20 kHz: 2485 watts RMS (0.5-ohm load);  
35 V<sub>RMS</sub>, 71 A<sub>RMS</sub>  
Small Signal: 28V<sub>p-p</sub> to 250 kHz  
DC Power: 85A at 13.5 VDC  
Output Voltage:  $\pm 80$  V<sub>p</sub>

AE Techron's **7700-Series** amplifiers offer great power and flexibility. The series consists of three models; each model can be used as a free-standing gain block or combined in multiples to achieve high voltage (300 V<sub>RMS</sub> at 50 A<sub>RMS</sub>) or high current (up to 340A at 13.5V DC continuously).

The 7794 was designed with a very low output impedance and is able to produce up to 60A continuous at 13.5V DC, making it an excellent battery substitute for transient immunity testing. It is also capable of producing the 80V surges required for DO-160G section 16.6.2.4 abnormal surge testing and is well suited for ISO 7637 pulse 2b and 4 testing.

The 7796, when run in controlled-current mode, is a perfect choice to drive medium to large diameter Helmholtz coils and radiators like those specified in Ford FMC1278 (RI140, RI150).

The 7796HC is a high-current version of the 7796. It is a great choice for low-voltage (13.5-, 14- and 28-volt) DC-based power susceptibility testing of high-current-draw EUTs (up to 400A). The 7796HC is available in 208-VAC version only.

### 7794 - AC Specifications

Ohms	PEAK OUTPUT						RMS OUTPUT					
	40 mSec Pulse, 20% Duty Cycle		5 Minutes, 100% Duty Cycle		1 Hour, 100% Duty Cycle		5 Minutes, 100% Duty Cycle		1 Hour, 100% Duty Cycle			
	Volts	Amps	Volts	Amps	Volts	Amps	Volts	Amps	Volts	Amps	Watts	
8	98	13	98	13	97	13	69	9	69	9	600	
4	95	23	95	23	95	23	66	16	66	16	1000	
2	88	44	88	44	88	44	60	30	60	30	1800	
1	81	81	81	81	81	81	56	56	56	56	3200	
0.5	72	144	72	144	72	144	50	100	50	100	5000	
0.25	50	210	32	134	32	134	23	91	23	91	2000	
0.125	23	197	23	194	23	191	16	133	16	130	2000	

### 7796 - AC Specifications

Ohms	PEAK OUTPUT						RMS OUTPUT					
	40 mSec Pulse, 20% Duty Cycle		5 Minutes, 100% Duty Cycle		1 Hour, 100% Duty Cycle		5 Minutes, 100% Duty Cycle		1 Hour, 100% Duty Cycle			
	Volts	Amps	Volts	Amps	Volts	Amps	Volts	Amps	Volts	Amps	Watts	
16	159	12	159	10	159	10	112	7	112	7	795	
8	159	19	154	19	154	19	109	13	109	13	1483	
4	158	39	152	38	152	38	107	27	107	27	2887	
2	157	79	*	*	141	71	*	*	100	50	5004	
1.5	148	99	*	*	*	*	*	*	*	*	*	
1	140	140	*	*	71	71	*	*	50	50	2509	
0.5	106	209	*	*	63	127	*	*	45	90	3999	
0.25	53	209	*	*	*	*	*	*	*	*	*	

\*Not tested.

### 7796HC - AC Specifications

Ohms	PEAK OUTPUT						RMS OUTPUT					
	40 mSec Pulse, 20% Duty Cycle		5 Minutes, 100% Duty Cycle		1 Hour, 100% Duty Cycle		5 Minutes, 100% Duty Cycle		1 Hour, 100% Duty Cycle			
	Volts	Amps	Volts	Amps	Volts	Amps	Volts	Amps	Volts	Amps	Watts	
2	79	39	79	39	79	39	56	28	56	28	1540	
1	56	56	55	55	55	55	39	39	39	39	1512	
0.5	53	106	52	104	50	100	37	74	35	71	2499	
0.25	40	157	38	152	35	139	27	107	25	98	2432	

### 7794 & 7796HC DC Specifications\*

VDC	OUTPUT - 1 HR, 100% Duty Cycle	
	7794	7796HC
80	70A	**
48	**	60
32	115A	52
28	106A	70A
13.5	60A	85A

\*Testing performed in high-current mode. \*\*Not tested.

### 7796 X 2 Series System

Typical performance for DO 160 Section 16 testing

		Continuous	In Rush/100 mS
		Steady State	115 VAC
Abnormal Surge	180 VAC	40A	100A

## Features

Features	
Output Impedance	3.2 mΩ + 2.2 μH
Noise Floor (10 Hz to 20 kHz)	<250 μV
Durable Design	7700-series amplifiers are built and tested to the most stringent quality standards for long life and outstanding performance
Change from controlled-voltage to controlled-current operation	Field-adjustable control mode and compensation settings
Parallel Operation	Up to four amplifiers can be connected in parallel for added current output
Series Operation	Up to three amplifiers can be connected in series for greater voltage
Ground-lift / Circulating Current Protection	Designed to protect the amplifier, DUT, and signal source from accidental ground loops

## Use for testing to these Specifications:

### MILITARY

MIL STD 461  
RTCA / DO 160

### AVIATION

AIRBUS ABD0100  
Boeing D6-16050-5  
ISO 1540:2006  
MIL STD 704

### PRODUCT STANDARDS

EN 300329  
EN 300340  
EN 300342-1  
EN 301489-1, -7, -17, -24

### AUTOMOTIVE STANDARDS

ISO 7637  
ISO 11452-8 and -10  
ISO 16750-2  
JASO D001-94  
SAE J1113-2, -11, -12  
SAE J1455

### AUTOMOTIVE OEM

BMW 600 13.0 (Part 2)  
BMW GS 95004

### AUTOMOTIVE OEM (cont.)

BMW GS 95024-2-1  
Chrysler CS-11809 (2009)  
Chrysler CS-11979  
Chrysler DC-11224 Rev.A  
DaimlerChrysler DC-10614  
DaimlerChrysler DC-10615  
DaimlerChrysler DC-11224  
DaimlerChrysler PF-10540  
EMC-CS-2010JLR V1.1 (2011-01)

Fiat 9.90110  
Ford FMC 1278, RI 140  
and 150

Ford FMC 1278, CI 210,  
230, 250 and 260  
Ford ES-XW7T-1A278-AC

Ford WDR 00.00EA  
Freightliner 49-00085  
GLloyd VI-7-2

GM 9105P  
GMW 3097  
GMW 3100  
GMW 3172

### AUTOMOTIVE OEM (cont.)

Honda 3982z-SDA-0030  
Hyundai ES 39110-00  
Hyundai ES 96100-02  
IVECO 16-2103  
Kia/Hyundai ES 95400-10  
Mack Trucks 606GS15  
MAN 3285  
Mazda MES PW 67600  
MBN 10284-2  
Mercedes MBN 10284-2  
Mercedes-Benz A 211 000 42 99  
Mercedes MBN 22100-2  
Mitsubishi ES-X82010  
MW 3097  
Nissan 28400 NDS 02, 03, 05, 07  
Nissan 28401 NDS 02  
Piaggio 7431  
Porsche  
PSA B21 7090 & 7110  
PSA B21 7110  
Renault 36.00.400/B & C

### AUTOMOTIVE OEM (cont.)

Renault 36.00.808/--D, E,F, G,  
H, J, K, and L  
SA B21 7110  
Scania TB1400  
Scania TB1700  
Smart DE1005B  
Tata TST/TS/WI/257  
Toyota TSC3500G  
Toyota TSC3590G  
Toyota TSC6203G  
Toyota TSC7001G  
Toyota TSC7034G  
UN ECE R10 (Automotive)  
Volvo STD 515-0003  
Volvo EMC Requirements  
VW TL 801 01  
VW TL 820 66  
VW TL 821 66  
VW TL 823 66  
VW TL 824 66  
VW TL 825 66

*AE Techron Sales Representative*