

**AV-143 SERIES**  
 DC-COUPLED LINEAR AMPLIFIERS  
 AND BOOSTER AMPLIFIERS

- 5, 10, 20 and 30 Volt models
- For pulse and CW applications
- Voltage gains of 2.5, 5 and 10 and bandwidths to 50 MHz

Model:	AV-143A AV-143A1	AV-143B AV-143B1	AV-143CP AV-143CN
Output amplitude: (max) ( $R_L = 50 \Omega$ )	$\pm 10V$ (A) $\pm 5V$ (A1)	$\pm 20V$ (B) $\pm 10V$ (B1)	+ 30V (P) - 30V (N)
Voltage gain:	+2.5 (A) +1.25 (A1)	+5.0 (B) +2.5 (B1)	+7.5 (P) -7.5 (N)
Rise, fall time: (20%-80%) <sup>3</sup>	$\leq 10$ ns	$\leq 50$ ns	$\leq 60$ ns
Input impedance <sup>1</sup> :	1 k $\Omega$		
Output impedance:	2 $\Omega$ (A) 50 $\Omega$ (A1)	2 $\Omega$ (B) 50 $\Omega$ (B1)	2 $\Omega$
Bandwidth:	DC-50 MHz	DC-10 MHz	DC-10 MHz
Maximum average output power:	1 Watt	8 Watts	18 Watts
Overshoot:	$\leq 3\%$	$\leq 6\%$	$\leq 10\%$
Prime power <sup>2</sup> :	$\pm 24V$ , 0.4A	$\pm 24V$ , 0.6A	-P : +36V, 0.8A, and -15V, 0.2A -N: -36V, 0.8A, and +15V, 0.2A
Connectors:	BNC		
Dimensions <sup>2</sup> :	Avtech Style A 43 mm x 66 mm x 109 mm (1.7" x 2.6" x 4.3")		

- 1) Other input impedances are available. Call Avtech for details.
- 2) For a line-powered unit (120/240 Volts, 50 - 60 Hz) mounted in a 100 x 215 x 375 mm (3.9" x 8.5" x 14.8") chassis, add the suffix "-PS" to the model number.
- 3) For an output pulse swinging from zero Volts to the maximum positive output voltage.

The amplifiers in the AV-143 family were designed to serve as booster amplifiers for arbitrary function generators and TTL-level pulse generators. Models AV-143A and AV-143B are linear non-inverting DC-coupled bipolar amplifiers providing peak outputs of  $\pm 10$  and  $\pm 20$  Volts, with rise times of 10 and 50 ns and voltage gains of 2.5 and 5.0. Models AV-143A and AV-143B have an output impedance of 2 Ohms while the A1 and B1 versions have an output impedance of 50 Ohms. Model AV-143CP provides an output of 0 to + 30 Volts with a gain of +7.5 (non-inverting), while Model AV-143CN provides an output of 0 to -30 Volts with a gain of -7.5 (inverting). Both have an output impedance of 2 $\Omega$ . See the AV-144 series below for applications requiring amplification of a TTL input. Call Avtech for your special amplifier applications.

These models can also be supplied in a AC line-powered (100 - 240V, 50 - 60 Hz) bench-top format by adding the suffix "-PS" to the model number. Models with the "-PS" suffix do not require DC power supplies.

**AV-144 SERIES**  
 TTL-IN NON-LINEAR  
 PULSE AMPLIFIERS-DRIVERS

- TTL in / 10, 20, 30, or 10-100 Volts out
- 2 or 10 ns rise and fall times
- Simple to use

Model:	AV-144A2-PS	AV-144B3-PS	AV-144C3-PS	AV-144E1-PS	AV-144G1-PS
Input amplitude:	TTL logic levels (LOW = 0 V, HIGH = +3 to +5 Volts)				
Output :	+10V, fixed	+20V, fixed	+30V, fixed	+10 to +100V, adjustable <sup>1</sup>	
Required load:	$\geq 50 \Omega$				50 $\Omega$
Rise, fall time (20%-80%):	$\leq 10$ ns				2 ns
Maximum duty cycle:	100%			10%	5%
Minimum pulse width:	< 20 ns			< 20 ns	< 100 ns
Maximum pulse width:	No limit			1 ms	
Maximum PRF:	10 MHz	1 MHz		100 kHz	
Propagation delay:	< 20 ns	< 100 ns			
Input impedance:	Standard: $\geq 1$ k $\Omega$ . With -Z50 option: 50 $\Omega$				
Output impedance:	< 2 $\Omega$				
Overshoot:	< $\pm 10\%$ $\pm 1V$			< 8V (typically < 3V @ 100V)	
Prime power:	100 - 240V, 50 - 60 Hz				
Connectors:	SMA			BNC	
Dimensions:	100 x 215 x 375 mm (3.9" x 8.5" x 14.8")				

- 1) Adjustable using a front-panel ten-turn mechanical dial. For analog electronic control (0 to +10V) of the amplitude, suffix the model number with -EA. These units also include the standard front-panel dial.

AV-144 models accept a TTL-level input, and boost the signal to a higher voltage, capable of driving 50 $\Omega$ .

Models are available with fixed output amplitudes of +10V, +20V, +30V, or with an adjustable amplitude of +10V to +100V. (Other output levels are available on request.)

The 10 / 20 / 30V models may operate at any duty cycle, at pulse repetition rates of up to 1 MHz (10 MHz for the 10V model), with 10 ns rise times.

The adjustable-amplitude 10-100V AV-144E1-PS model operates with duty cycles as high as 10%, and pulse widths up to 1 ms. The

This model is essentially a "stripped-down" version of the AV-1010-B pulse generator. The AV-1010-B should be considered in applications requiring computer automation. AV-144G1-PS is similar, but with faster rise times (2 ns). It is a "stripped-down" version of the AV-1011B1-B. See also:

- <https://www.avtechpulse.com/general/av-1010/>
- <https://www.avtechpulse.com/general/av-1011b1/>

The outputs are DC-coupled (except on the AV-144G1-PS, which is AC-coupled), and will drive loads of 50 Ohms and higher. These models are supplied in an AC-powered (100-240 V, 50-60 Hz) bench-top format.