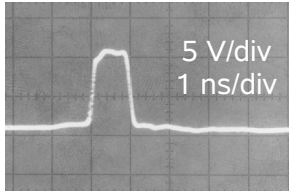


AVM SERIES

25 MHz, 5 AND 15 VOLT
PULSE GENERATORS
WITH 100 PS RISE AND FALL TIMES



AVM-2-C



AVM-2
(with -M option)

- ◆ 100 ps rise times
- ◆ Amplitudes to 15 Volts, PRF to 25 MHz

- ◆ Pulse widths variable from 0.2 to 6 ns
- ◆ Stand alone lab instruments or miniature modules

The models in the AVM family provide very fast rise times (100 or 150 ps), with high repetition rates (to 25 MHz), variable pulse widths, and amplitudes as high as 15 Volts.

Model AVM-1-C provides amplitudes up to 5V, with pulse widths variable from 0.2 to 6 ns. The rise time is less than 100 ps, and the fall time is less than 135 ps.

Model AVM-2-C provides amplitudes up to 15V, with pulse widths variable from 0.2 to 2 ns. The rise time is less than 100 ps, and the fall time is less than 135 ps.

Model AVM-3-C operates over a wider pulse width range of 2 to 15 ns, with amplitudes to 15V. The rise time is less than 150 ps, and the fall time is less than 600 ps.

The pulse repetition frequency is variable from 3 kHz to 25 MHz on all -C models using the internal clock oscillator, which is controlled by a six-position front panel switch and a one-turn fine control. A delay control and a sync output are provided for sampling scope triggering purposes. The units can also be triggered externally using a TTL level pulse. The propagation delay in the externally triggered mode is typically 30 ns, and an optional variable relative delay (0 to 5 ns) is available. Either output polarity or an optional dual output polarity can be provided. A DC offset or bias insertion function (similar to Model AVX-T, see <http://www.avtechpulse.com/bias/avx-t>) is included. The required DC offset or bias is applied directly to rear panel solder terminals.

An available option provides an internally-generated DC offset (0 to $\pm 5V$) controlled by a front panel one-turn dial. Polarity inversion

in dual polarity units is accomplished by means of an inverting transformer module that connects to the pulse generator's output port. AVM units are available with a monitor option that provides an attenuated (20 dB or $\times 10$) coincident replica of the main output pulse. Additional options include electronic control (0 to +10V) of output amplitude, pulse width, propagation delay and DC offset. Units with these options also include the standard front panel one-turn controls. All -C units require 100-240V, 50-60 Hz prime power.

All AVM units are also available in a DC-powered miniature module format. The AVM-1 and AVM-2 modules require +24V DC, and the AVM-3 requires +28V DC. These modules require a TTL input trigger signal and the output PRF equals the input trigger PRF. Pulse width and output amplitude are controlled by one-turn trimpot controls. An optional relative delay (0 to 5 ns) control is available.

The output amplitude and pulse width for the AVM series interact to the extent that for a given pulse width setting, decreasing the output amplitude increases the output pulse width. This interaction may be eliminated by using external variable attenuators to control the amplitude or by using the 300 ps rise time AVMM series.

The AVM series is ideally suited for systems or laboratory applications such as logic testing, TDR, radar, optical and cable communications, SAW, nuclear, switching and propagation time studies and educational fields. In some cases, the specifications can be adapted to satisfy a particular requirement. Contact the factory (info@avtechpulse.com) with your special requirement!

Model:	AVM-1-C ¹ AVM-1	AVM-2-C ¹ AVM-2	AVM-3-C ¹ AVM-3
Amplitude ^{2,3} : (into 50 Ohm load)	Variable to 5 Volts	Variable to 15 Volts	
Pulse width (FWHM) ² :	Variable 0.2 to 6 ns	Variable 0.2 to 2.0 ns	Variable 2.0 to 15 ns
PRF:	0 to 25 MHz (-C units & modules, externally triggered) 3 kHz to 25 MHz (-C units, internally triggered)		
Rise time (20% - 80%):	≤ 100 ps		≤ 150 ps
Fall time (80% - 20%):	≤ 135 ps (typically 100 ps)		≤ 600 ps
Polarity ⁴ :	Positive or negative or both (specify)		
Propagation delay:	≤ 30 ns (Ext trig in to pulse out)		
Variable propagation delay option ^{2,5} :	0 to 5 ns		
Jitter:	± 15 ps (Ext trig in to pulse out)		
DC offset or bias insertion ^{2,6} :	Apply required DC offset to back panel solder terminals (± 50 Volts, 250 mA max)		
Trigger required:	Modules, and -C ext trig mode: TTL-level ⁸ (Low: 0V, High: +3V to +5V), 10 ns or wider. ≥ 1 k Ω input impedance.		
Sync delay:	Sync out to pulse out, -C units only: Variable 0 to 85 ns		
Sync output: (-C only)	Approximately 20 ns wide and 0.5V in amplitude. Logically complemented (i.e., LOW \approx +0.5V, HIGH \approx 0V). Will drive 50 Ohm loads.		
Monitor output option ⁷ :	Provides a 20 dB attenuated coincident replica of main output		
Connectors:	-C units: Out, Monitor: SMA, Trig, Sync: BNC, Modules: In, Out: SMA, Power: Solder terminals		
Dimensions (H x W x D):	-C units: 100 x 215 x 375 mm (3.9" x 8.5" x 14.8") Modules: 43 x 66 x 107 mm (1.7" x 2.6" x 4.2")		
Power requirement:	-C units: 100 - 240 V, 50 - 60 Hz. AVM-1 & AVM-2 modules: +24V DC. AVM-3 modules: +28V DC.		
Chassis material:	-C units: anodized aluminum, with blue plastic trim. Modules: cast aluminum, blue enamel		
Temperature range:	$+5^{\circ}\text{C}$ to $+40^{\circ}\text{C}$		

1) -C suffix indicates stand-alone lab instrument with internal clock and line powering. No suffix indicates miniature module requiring DC power and external trigger. (See <http://www.avtechpulse.com/formats> for additional details of the basic formats).

2) For electronic control (0 to +10V) of amplitude, pulse width, delay or offset suffix model number with -EA or -EW or -ED or -EO. Electronic control units also include the standard front panel one-turn controls.

3) For operation at amplitudes of less than 20% of full-scale, best results will be obtained by setting the amplitude near full-scale and using external attenuators on the output.

4) Indicate desired polarity by suffixing model number with -P or -N (i.e. positive or negative) or -P-PN or -N-PN for dual polarity option where the suffix preceding -PN indicates the polarity at the mainframe output port. (-PN available only for -C units).

5) Indicate delay option by suffixing model number with -D.

6) For internally generated DC offset option (0 to $\pm 5V$, one turn control) add suffix -OT to model number. -OT and -EO options not available on modules.

7) For monitor option add suffix -M.

8) For ECL-level (-1.6V and -0.8V) triggering instead, add the suffix -ECL to the model number. The internal ECL termination is 50 Ohms to -2V.