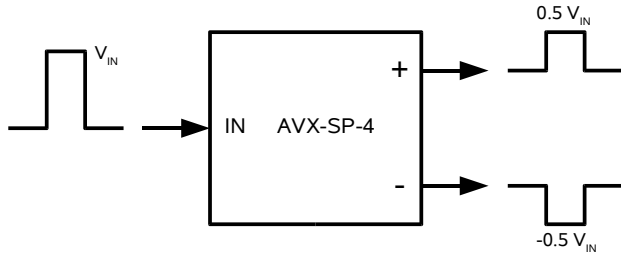


AVX-SP SERIES 0° AND 180° NANOSECOND PULSE POWER SPLITTERS



The AVX-SP series of pulse splitters provides two outputs which are either both in-phase with the input signal (0° and 0°, non-inverted), or with one output non-inverted and with one output inverted (0° and 180°). The function of an inverting pulse splitter is illustrated above. A positive input pulse is split into one positive output pulse and one negative output pulse. The output voltage magnitudes are each equal to one-half the input magnitude. Output relative magnitudes and delays are closely matched and stable. The 300 ps rise time AVX-SP-1 and AVX-SP-2 are designed for use with nanosecond speed laboratory pulse generators or with Avtech units such as the AVI and AVL series. The 60 ps rise time AVX-SP-3 and AVX-SP-4 models are intended for use with sub-nanosecond laboratory pulse generators and with Avtech AVH, AVP, AVM and AVN series units. Inverting power splitters may also be used as inverting transformers (with 50% loss of amplitude) if the non-inverting output is terminated in fifty Ohms.

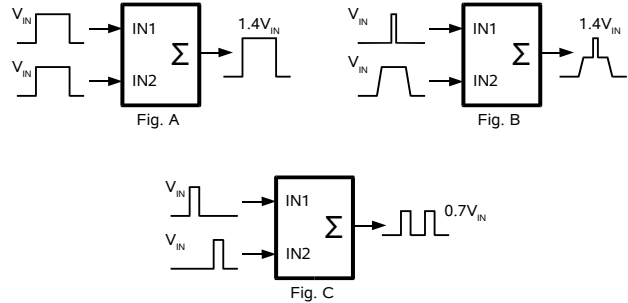
AVX-SP models are not reversible - that is, they can not be used as power combiners. See the AVX-CP series for applications requiring pulse power combiners.

Model:	AVX-SP-1	AVX-SP-2	AVX-SP-3	AVX-SP-4
Output A:	non-inverted			
Output B:	non-inverted	inverted	non-inverted	inverted
Rise time: (20%-80%)	≤ 300 ps		≤ 60 ps	
Droop (max.):	10% for PW = 100 ns		10% for PW = 10 ns	
PW (maximum):	100 ns		10 ns	
Input and load impedance:	50 Ohms			
Maximum input voltage:	350 V		30 V	
Maximum average power:	1/2 W		1/4 W	
Amplitude match:	± 2% (Output A to Output B)			
Delay match:	± 10 ps (Output A to Output B)			
Connectors:	SMA			
Size: (H x W x D)	38 x 28 x 23 mm (1.5" x 1.1" x 0.9")			
Chassis material:	cast aluminum, blue enamel			



AVX-SP-4

AVX-CP SERIES 0° NANOSECOND PULSE POWER COMBINERS



The AVX-CP series of pulse combiners can be used to add together two pulse signals. They can also be used in reverse, to split a signal input pulse into two identical outputs with 70% of the original amplitude.

When used to sum two unity amplitude inputs, the combiners will yield an output equal to about 1.4 times the input amplitude. The basic summing action of an AVX-CP series power combiner is illustrated in Figure A above. Other possible applications for pulse power combiners are illustrated in Figures B and C. Figure B demonstrates how a relatively fast narrow pulse can be superimposed on a wider pedestal base pulse while Figure C illustrates how two input pulse lines can be combined onto a single line.

For a 100 ns pulse width, model AVX-CP-1 is rated for a maximum input voltage of 5V, the AVX-CP-2 is rated at 20V, the AVX-CP-3 is rated at 70V, and the AVX-CP-4 is rated at 350V. In all cases (except for the AVX-CP-4) the maximum voltage can be increased if the maximum pulse width is reduced. All models require 50 Ohm terminations.

Model:	AVX-CP-1	AVX-CP-2	AVX-CP-3	AVX-CP-4
Maximum input voltage:	40 V	60 V	150 V	350 V
Maximum pulse width at a given amplitude ¹ :	100ns / 5V 75ns / 10V 60ns / 40V	200ns / 10V 100ns / 20V 50ns / 60V	250ns / 20V 100ns / 70V 50ns / 150V	600ns / 20V 350ns / 100V 100ns / 350V
Rise time: (20%-80%)	≤ 300 ps	≤ 1 ns	≤ 0.5 ns	≤ 1 ns
Maximum average power:	1/4 W	1/4 W	1/2 W	1 W
Input and load impedance:	50 Ohms			
Droop:	≤ 10% (at max input)			
Connectors:	SMA			
Size: (H x W x D)	36 x 28 x 59 mm (1.4" x 1.1" x 2.3")		38 x 28 x 23 mm (1.5" x 1.1" x 0.9")	
Chassis material:	cast aluminum, blue enamel			

1) As determined using synchronous, equal amplitude pulses applied to both inputs.



AVX-CP-1