Series UVOPD Microwave Power Dividers/Combiners

- Wilkinson and Fork Type Design
- Up to 16 Outputs

Description

Power dividers/combiners are passive components that divide an input signal into two or more identical output signals, or combine multiple signals into one output signal.

The basic measure of quality of a power divider is measured in terms of its ability to provide identical outputs. Equal output capability is determined by the actual impedance isolation of the divider. All of **A .Uvitech's** components in this section are isolated power dividers that provide a high isolation between output ports.

The high isolation between ports prevents the output at one port not to be severely affected by an impedance mismatch at another output port. Thus, the isolated power divider is the ideal power divider for any application and can function as a hybrid with the difference port internally terminated.

Power dividers are usually built in octave, as well as extreme wide bandwidths (even decades and greater). Octave band units are of the Wilkinson or Fork-type, using discrete lumped resistors. VSWR increases outside the specified band.

A .Uvitech's power divider/combiners can comply with military specifications, if so desired.

Abridged Dividers/Combiners Glossary

Isolation

Isolation is the ratio, expressed in decibels (dB), between the input power to one of the power combiner input ports to any other input port with matched terminations on all other ports. High isolation is required for the most demanding power divider applications.

Output Amplitude Tracking

The difference in the signal amplitude at the output ports is called output amplitude tracking error or output amplitude unbalance. It is the ratio of the maximum signal at any port to the minimum signal of any other port, expressed in decibels. Typically, the maximum output tracking specified is very low, for example, 0.3 dB for two-way dividers, and increases with a higher number of output ports to 1.0 dB for the eight-way power divider.

Output Phase Tracking

The difference in the signal phase at the output ports is defined as the output phase tracking error or unbalance. It is the maximum deviation that is specified; usually the average phase is much less, especially at low frequencies.

Example:

UVOPD-3-1300/200-60W, 60 Watt, 3-Way Power Divider/Combiner, 1200-1400 MHz

Description

This 3-way power divider/combiner is based on equal ripple Chebyshev polinomial utilizing microstrip technology with suitable resistors to meet insertion loss, isolation and power handling specifications.

The package includes RF pins, that are parts of SMA removable connectors, to enable external testing of the power divider/combiner (the unit is supplied without the connectors).

Electrical Specifications @ Temp.=25°C

Parameter	Specification	Unit	Note
Frequency Range	1200-1400	MHz	
Insertion Loss	0.6	dB	Max.
Amplitude Balance	0.4	dB	Max.
Phase Balance	4	Degree	Max.
In/Out Impedance	50	Ohms	Nominal
In/Out VSWR	1.5:1		Max.
RF Power, Total	60		W

Environmental Characteristics

Parameter	Min	Max	Unit
Operating Temperature	-55	+85	°C

Mechanical Specifications

Parameter	Specification
Dimensions LxWxD	65x45x12.7 mm
RF Input/Output Connectors	Pins
Material	Aluminum

Example:

UVOPD-5-1300/200-1W-EL, 1 Watt, 5-Way Power Divider/Combiner, 1200-1400 MHz

Description

This 5-way power divider/combiner is based on equal ripple Chebyshev polinomial, utilizing microstrip technology with suitable resistors, to meet insertion loss, isolation and power handling specifications.

The package includes RF pins that are parts of SMA removable connectors, to enable external testing of the power divider/combiner (the unit is supplied without the connectors).

Electrical Specifications @ Temp.=25°C

Parameter	Specification	Unit	Note
Frequency Range	1200-1400	MHz	
Insertion Loss	1	dB	Max.
Amplitude Balance	0.4	dB	Max.
Phase Balance	4	Degree	Max.
In/Out Impedance	50	Ohms	Nominal
In/Out VSWR	1.5:1		Max.
RF Power, Total	1		W

Environmental Characteristics

Parameter	Min	Max	Unit
Operating Temperature	-55	+85	°C

Mechanical Specifications

Parameter	Specification
Dimensions LxWxD	80x68x12.7 mm
RF Input/Output Connectors	Pins
Material	Aluminum