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Four power divider-combiner models from \$39.99.
(qty 10)



2-Way, 0.7-2.7 GHz, 40 Watts, N and SMA-Jack Connectors

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2-WAY POWER DIVIDER/COMBINER

0.7-2.7 GHz, 40 Watts, N & SMA-Jack Connectors



In-Line, N-Jack Connectors



T-Style, N-Jack Connectors



In-Line, SMA-Jack Connectors



T-Style, SMA-Jack Connectors

Application Note

STOCK 2-Way Power Divider, Power Combiners are available in two configurations, In-Line and T-Style, each offered with N-Jack and SMA-Jack connectors. All four models are optimized for broadband operation covering the frequency range from 0.7– 2.7 GHz with outstanding electrical performance. These Wilkinson-type, 2-way, power divider/combiners are reciprocal units that can be used to divide or combine signals with equal facility.

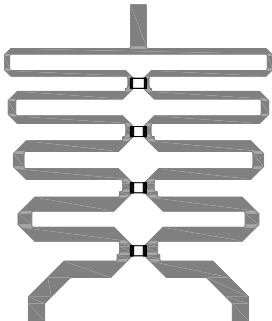
In power divider applications, the input signal is equally split into two output signals, each down 3 dB from the incident due to the 2 x 1/2 power division. No power is actually lost from this power split; it is just allocated into two amplitude and phase matched signals, thus a so-called 3 dB insertion loss. True insertion loss of less than 0.4 dB max will be found at the output ports resulting from dissipation of small amounts of RF & microwave energy within the connectors and microstrip circuit. The output signals are isolated from each other by 22 dB minimum through the use of resistors that dissipate any power reflected back to the circuit caused by unequal or unbalanced output loads. The 40 watt maximum power rating of these power dividers

is applicable when connected to matched output load VSWR's of 1.2:1 or better. This maximum power rating must be reduced when load VSWR's increase or are unbalanced or out-of-phase with respect to one another. See **Power Divider Input Rating Tables** for additional guidelines.

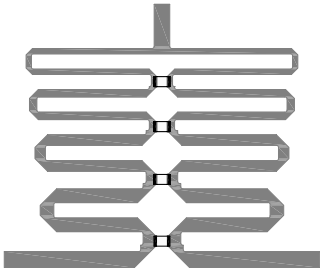
The situation with power combining is a bit more complex. While it is possible to sum two input signals with no loss, this can

only be accomplished if the input signals are coherent and identical in phase and amplitude. Such a case would be the splitting of a signal

which is then recombined after amplification, provided the amplified signals are phase-locked together. But outside this case, or cases of pure sine signals, or CW signals without any transmitted info, the combining of two non-coherent signals will result in a minimum 3 dB loss (1/2 power ratio) plus the true insertion loss of the power combiner (0.4 dB max @2.7 GHz). Worst-case combining loss occurs with coherent signals 180° out-of-phase, where all input power is dissipated. Because the combining loss is dissipated through the isolation resistors, it is the power handling capability of these resistors that ultimately determines the combiner power rating. See **Power Combiner Input Rating Tables** for more information.



2-Way, In-Line, Power Divider Circuit



2-Way, T-Style, Power Divider Circuit

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2-WAY POWER DIVIDER/COMBINER

0.7-2.7 GHz, 40 Watts, N & SMA-Jack Connectors

N-Jack Connectors



optimum broadband performance

N-Jack/T-Style



T-Style convenient cable access

SMA-Jack Connectors



precision microstrip circuit

SMA-Jack/T-Style



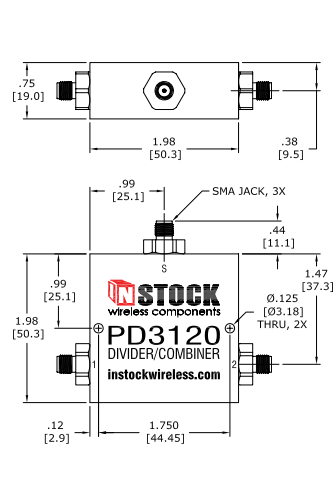
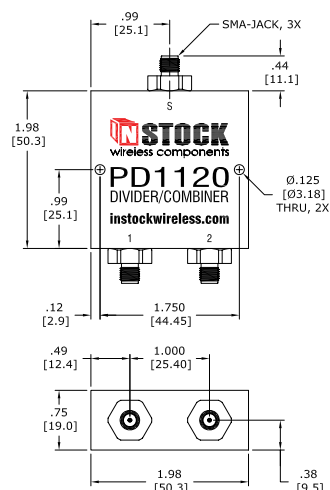
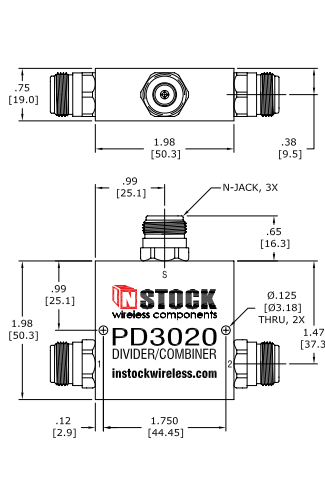
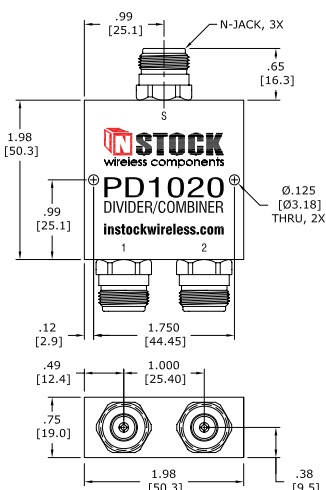
T-Style with SMA-Jack connectors

PD1020 is a broadband 2-way power divider, power combiner furnished with N-Jack connectors. All wireless-band frequencies from 0.7-2.7 GHz are covered with optimum performance. Input power levels up to 40 watts can be handled in both power divider and power combiner scenarios. See input power rating tables ...

PD3020's T-Style housing allows convenient cable access to all connector ports. Mechanical features include precision CNC machined brass N-Jack connectors with tri-alloy plating to insure tarnish resistance and low-PIM operation. Connector pins are gold plated phosphor bronze for reliability and low contact resistance ...

PD1120 is a broadband 2-way power divider, power combiner furnished with SMA-Jack connectors. The heart of the unit is a precision designed and etched microstrip circuit on a low-loss, high frequency, dielectric substrate. Electrical performance is highlighted by 0.4 dB max insertion loss, 22 dB min isolation, 1.25:1 max input ...

PD3120's T-Style housing allows convenient cable access to all connector ports. Mechanical features include precision CNC-machined, brass, SMA-Jack connectors with tri-alloy plating to insure tarnish resistance. Connector pins are gold plated beryllium copper for reliability and low contact resistance. Virgin electrical grade PTFE ...



| Model No. | Connectors | Frequency Range | Insertion Loss (above 3.01 dB) | Amplitude Balance | Phase Balance | Isolation | Input VSWR | Output VSWR |
|-----------|------------------|-----------------|--------------------------------|-------------------|---------------|-----------|------------|-------------|
| PD1020 | N-Jack | 0.7-2.7 GHz | 0.4 dB max | 0.2 dB max | 2° max | 22 dB min | 1.20:1 max | 1.15:1 max |
| PD3020 | N-Jack/T-Style | 0.7-2.7 GHz | 0.4 dB max | 0.2 dB max | 2° max | 22 dB min | 1.25:1 max | 1.15:1 max |
| PD1120 | SMA-Jack | 0.7-2.7 GHz | 0.4 dB max | 0.2 dB max | 2° max | 22 dB min | 1.25:1 max | 1.15:1 max |
| PD3120 | SMA-Jack/T-Style | 0.7-2.7 GHz | 0.4 dB max | 0.2 dB max | 2° max | 22 dB min | 1.20:1 max | 1.15:1 max |

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PD1020 - POWER DIVIDER/COMBINER

2-Way, N-Jack, 0.7-2.7 GHz, 40 Watts

Features & Benefits



designed for optimum broadband performance

Overview

PD1020 is a broadband, 2-way, power divider/power combiner furnished with N-Jack connectors. All wireless-band frequencies from 0.7 - 2.7 GHz are covered with optimal performance. Input power levels up to 40 watts can be handled in both power divider and power combiner applications. See **input power rating tables** for specific details.

Electrical

The heart of the unit is a precision designed and etched microstrip circuit on a low-loss, high frequency, dielectric substrate. Electrical performance is highlighted by 0.4 dB max insertion loss (above the 3.01 dB power split), 22 dB min isolation, 1.20:1 max input VSWR and 1.15:1 max output VSWR. Equal power split and balance is displayed by 0.2 dB max ampli-

tude balance and 2 degrees max phase balance. Narrow band performance over your frequency range may be even better. See **power divider test sweeps** for specific details.

Mechanical

Mechanical features include precision CNC machined, brass, N-Jack connectors with tri-alloy plating to insure tarnish resistance and low-PIM operation. Connector pins are gold plated phosphor bronze for reliability and low-contact resistance. Virgin electrical grade PTFE support insulators captivate the contact pins enabling trouble-free connector mating. Long-term operation and superior shielding is maintained by the rugged CNC-machined aluminum housing with yellow iridite finish. Secure mounting is provided by two 0.125 in. diameter (3.18 mm) through holes.

Physical

Housing dimensions are 1.98 in. wide by 1.98 in. deep by 0.75 in. high (50.3 x 50.3 x 19.1 mm). The N-Jack connectors extend 0.65 in. (16.5 mm) from the housing. Weight is 154 grams. Operating temperature range is from -65°C to +85°C. See **power divider outline drawing** for more information.

Warranty

Each unit is 100% electrically tested to insure complete compliance with all specifications. The PD1020 power divider/power combiner is covered by a **two-year warranty**.

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PD1020 - POWER DIVIDER/COMBINER

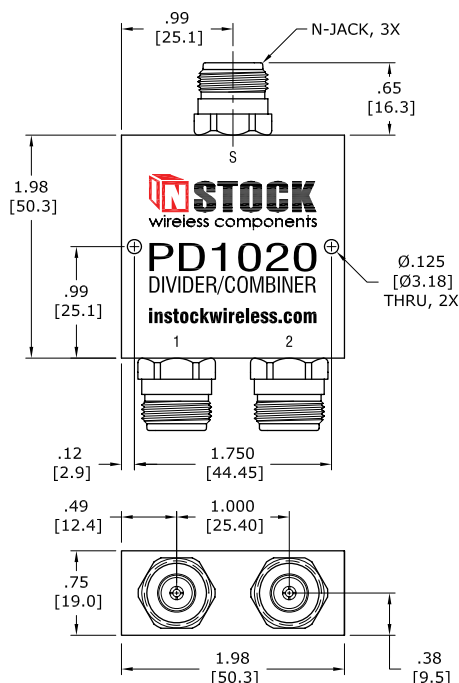
2-Way, N-Jack, 0.7-2.7 GHz, 40 Watts



In-Line, N-Jack Connectors

- Broadband Frequency (0.7 - 2.7 GHz)
- Low Insertion Loss (0.2 dB avg)
- High Isolation (30 dB avg)
- Excellent VSWR (1.10 : 1 avg)
- Tri-Alloy Plated Connectors for Low PIM

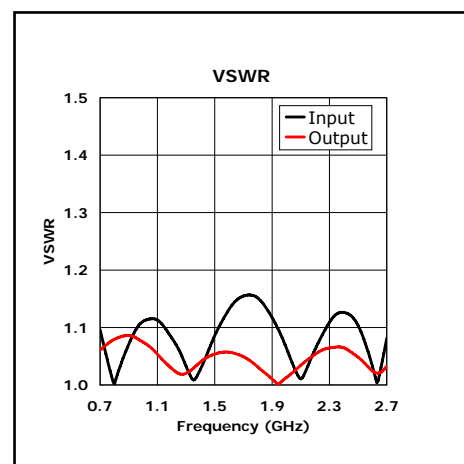
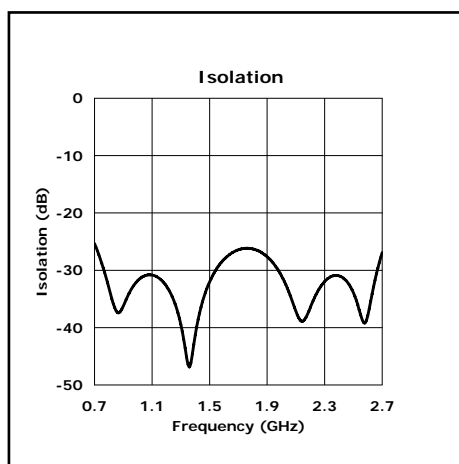
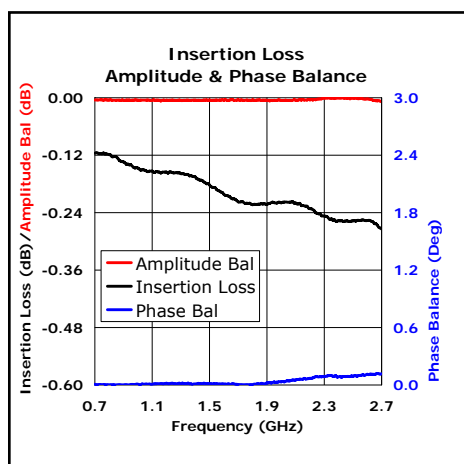
| Power Divider Input Ratings | | |
|------------------------------|--------------|-------------------|
| Into Matched Load VSWR's | In-Phase | 180° Out-of-Phase |
| 1.2 : 1 | 40 Watts | 40 Watts |
| 2.0 : 1 | 40 Watts | 10 Watts |
| ∞ | 20 Watts | 1 Watt |
| Power Combiner Input Ratings | | |
| Input Signals | In-Phase | 180° Out-of-Phase |
| Coherent | 2 X 20 Watts | 2 X 0.5 Watts |
| Non-Coherent | 2 X 1 Watt | |



Mechanical Specifications

Connectors N-Jack, 3X
 Body Brass, Tri-Alloy Plate
 Connector Pin Phosphor Bronze, Gold Plate
 Insulator PTFE, Virgin Electrical Grade
 Housing Aluminum, Yellow Iridite
 Operating Temp -65°C to +85°C
 Weight 154 Grams

| Frequency Range | Insertion Loss (above 3.01 dB) | Amplitude Balance | Phase Balance | Isolation | Input VSWR | Output VSWR |
|-----------------|--------------------------------|-------------------|---------------|-----------|--------------|--------------|
| 0.7 - 2.7 GHz | 0.4 dB max | 0.2 dB max | 2° max | 22 dB min | 1.20 : 1 max | 1.15 : 1 max |



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PD3020 - POWER DIVIDER/COMBINER

2-Way, N-Jack, T-Style, 0.7-2.7 GHz, 40 Watts

Features & Benefits



T-housing allows convenient cable access

Overview

PD 3020 is a broadband, 2-way, power divider/power combiner furnished with N-Jack connectors in a T-Style housing. All wireless-band frequencies from 0.7 - 2.7 GHz are covered with optimal performance. Input power levels up to 40 watts can be handled in both power divider and power combiner applications. See **input power rating tables** for specific details.

Electrical

The heart of the unit is a precision designed and etched microstrip circuit on a low-loss, high frequency, dielectric substrate. Electrical performance is highlighted by 0.4 dB max insertion loss (above the 3.01 dB power split), 22 dB min isolation, 1.25:1 max input VSWR and 1.15:1 max output VSWR. Equal power split and balance is displayed by 0.2 dB max ampli-

tude balance and 2 degrees max phase balance. Narrow band performance over your frequency range may be even better. See **power divider test sweeps** for specific details.

Mechanical

The PD3020's T-Style housing allows convenient cable access to all connector ports. Mechanical features include precision CNC machined, brass, N-Jack connectors with tri-alloy plating to insure tarnish resistance and low-PIM operation. Connector pins are gold plated phosphor bronze for reliability and low contact resistance. Virgin electrical grade PTFE insulators support the contact pins enabling high withstand voltage. Long-term operation and superior shielding is maintained by the rugged CNC-machined aluminum housing with yellow iridite finish. Secure mounting is provided by two 0.125 in. diameter (3.18 mm) through holes.

Physical

Housing dimensions are 1.98 in. wide by 1.98 in. deep by 0.75 in. high (50.3 x 50.3 x 19.1 mm). The N-Jack connectors extend 0.65 in. (16.5 mm) from the housing. Weight is 151 grams. Operating temperature range is from -65°C to +85°C. See **power divider outline drawing** for more information.

Warranty

Each unit is 100% electrically tested to insure complete compliance with all specifications. The PD3020 power divider/power combiner is covered by a **two-year warranty**.

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PD3020 - POWER DIVIDER/COMBINER

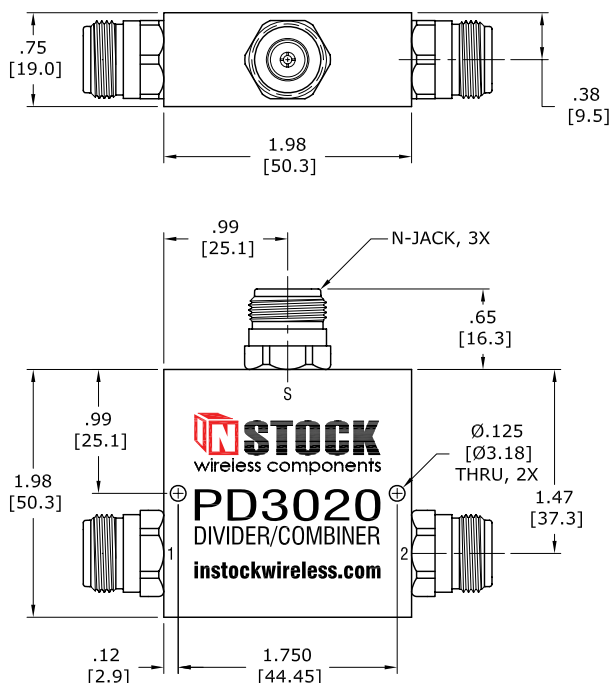
2-Way, N-Jack, T-Style, 0.7-2.7 GHz, 40 Watts



T-Style, N-Jack Connectors

- Broadband Frequency (0.7 - 2.7 GHz)
- Low Insertion Loss (0.2 dB avg)
- High Isolation (30 dB avg)
- Excellent VSWR (1.10 : 1 avg)
- Tri-Alloy Plated Connectors for Low PIM

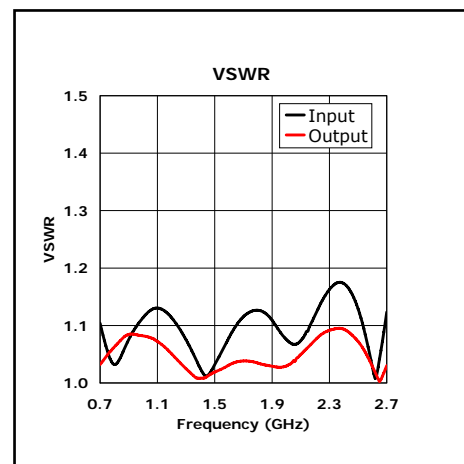
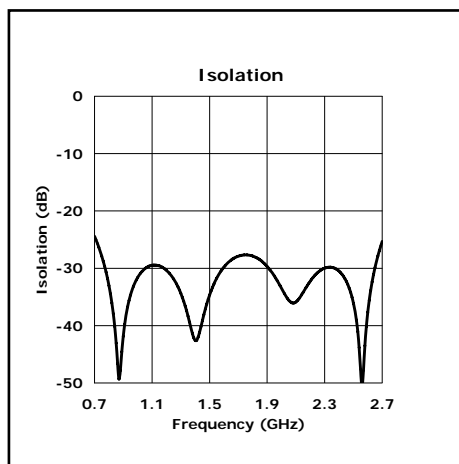
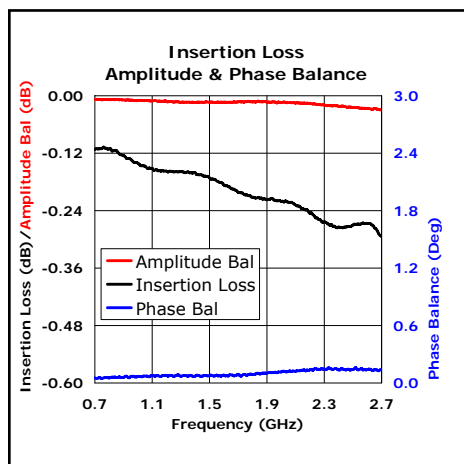
| Power Divider Input Ratings | | |
|------------------------------|--------------|-------------------|
| Into Matched Load VSWR's | In-Phase | 180° Out-of-Phase |
| 1.2 : 1 | 40 Watts | 40 Watts |
| 2.0 : 1 | 40 Watts | 10 Watts |
| ∞ | 20 Watts | 1 Watt |
| Power Combiner Input Ratings | | |
| Input Signals | In-Phase | 180° Out-of-Phase |
| Coherent | 2 X 20 Watts | 2 X 0.5 Watts |
| Non-Coherent | 2 X 1 Watt | |



Mechanical Specifications

Connectors N-Jack, 3X
 Body Brass, Tri-Alloy Plate
 Connector Pin Phosphor Bronze, Gold Plate
 Insulator PTFE, Virgin Electrical Grade
 Housing Aluminum, Yellow Iridite
 Operating Temp -65°C to +85°C
 Weight 151 Grams

| Frequency Range | Insertion Loss (above 3.01 dB) | Amplitude Balance | Phase Balance | Isolation | Input VSWR | Output VSWR |
|-----------------|--------------------------------|-------------------|---------------|-----------|--------------|--------------|
| 0.7 - 2.7 GHz | 0.4 dB max | 0.2 dB max | 2° max | 22 dB min | 1.25 : 1 max | 1.15 : 1 max |



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PD1120 - POWER DIVIDER/COMBINER

2-Way, SMA-Jack, 0.7-2.7 GHz, 40 Watts

Features & Benefits



precision designed & etched microstrip circuit

Overview

PD1120 is a broadband, 2-way, power divider/power combiner furnished with SMA-Jack connectors. All wireless-band frequencies from 0.7 - 2.7 GHz are covered with optimal performance. Input power levels up to 40 watts can be handled in both power divider and power combiner applications. See **input power rating tables** for specific details.

Electrical

The heart of the unit is a precision designed and etched microstrip circuit on a low-loss, high frequency, dielectric substrate. Electrical performance is highlighted by 0.4 dB max insertion loss (above the 3.01 dB power split), 22 dB min isolation, 1.25:1 max input VSWR and 1.15:1 max output VSWR. Equal power split and balance is displayed by 0.2 dB max ampli-

tude balance and 2 degrees max phase balance. Narrow band performance over your frequency range may be even better. See **power divider test sweeps** for specific details.

Mechanical

Mechanical features include precision CNC machined, brass, SMA-Jack connectors with tri-alloy plating to insure tarnish resistance and low-PIM operation. Connector pins are gold plated beryllium copper for reliability and low contact resistance. Virgin electrical grade PTFE insulators support the contact pins enabling high withstand voltage. Long-term operation and superior shielding is maintained by the rugged CNC-machined aluminum housing with yellow iridite finish. Secure mounting is provided by two 0.125 in. diameter (3.18 mm) through holes.

Physical

Housing dimensions are 1.98 in. wide by 1.98 in. deep by 0.75 in. high (50.3 x 50.3 x 19.1 mm). The SMA-Jack connectors extend 0.44 in. (11.1 mm) from the housing. Weight is 114 grams. Operating temperature range is from -65°C to +85°C. See **power divider outline drawing** for more information.

Warranty

Each unit is 100% electrically tested to insure complete compliance with all specifications. The PD1120 power divider/power combiner is covered by a two-year warranty.

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PD1120 - POWER DIVIDER/COMBINER

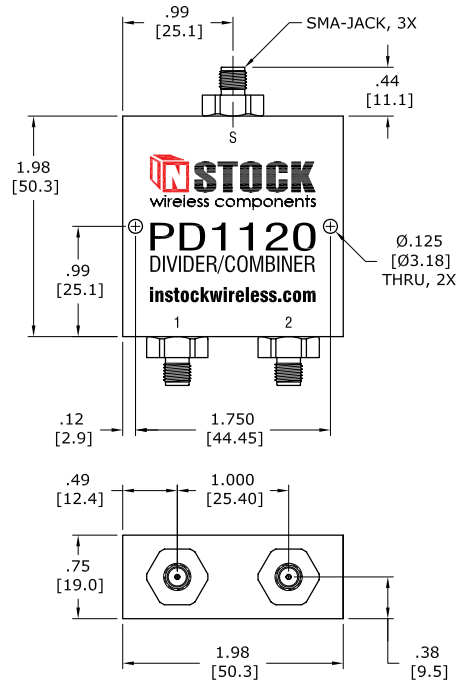
2-Way, SMA-Jack, 0.7-2.7 GHz, 40 Watts



In-Line, SMA-Jack Connectors

- Broadband Frequency (0.7 - 2.7 GHz)
- Low Insertion Loss (0.2 dB avg)
- High Isolation (30 dB avg)
- Excellent VSWR (1.10 : 1 avg)
- Tri-Alloy Plated Connectors for Low PIM

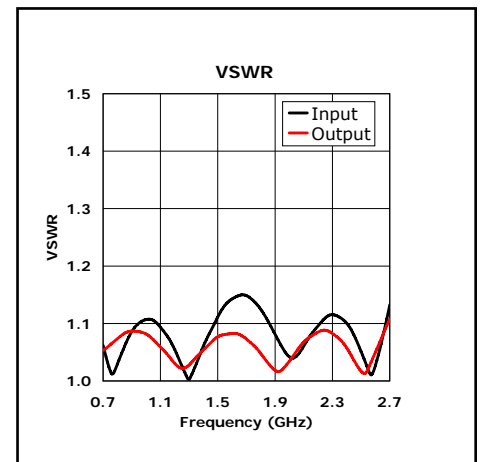
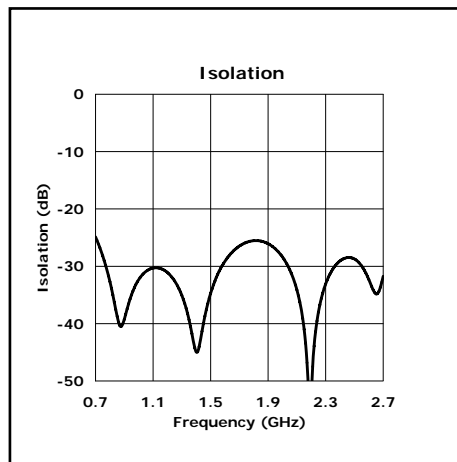
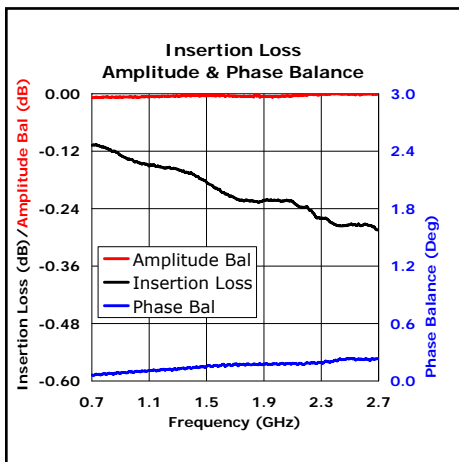
| Power Divider Input Ratings | | |
|------------------------------|--------------|-------------------|
| Into Matched Load VSWR's | In-Phase | 180° Out-of-Phase |
| 1.2 : 1 | 40 Watts | 40 Watts |
| 2.0 : 1 | 40 Watts | 10 Watts |
| ∞ | 20 Watts | 1 Watt |
| Power Combiner Input Ratings | | |
| Input Signals | In-Phase | 180° Out-of-Phase |
| Coherent | 2 X 20 Watts | 2 X 0.5 Watts |
| Non-Coherent | 2 X 1 Watt | |



Mechanical Specifications

Connectors SMA-Jack, 3X
 Body Brass, Tri-Alloy Plate
 Connector Pin Beryllium Copper, Gold Plate
 Insulator PTFE, Virgin Electrical Grade
 Housing Aluminum, Yellow Iridite
 Operating Temp -65°C to +85°C
 Weight 114 Grams

| Frequency Range | Insertion Loss (above 3.01 dB) | Amplitude Balance | Phase Balance | Isolation | Input VSWR | Output VSWR |
|-----------------|--------------------------------|-------------------|---------------|-----------|--------------|--------------|
| 0.7 - 2.7 GHz | 0.4 dB max | 0.2 dB max | 2° max | 22 dB min | 1.25 : 1 max | 1.15 : 1 max |



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PD3120 - POWER DIVIDER/COMBINER

2-Way, SMA-Jack, T-Style, 0.7-2.7 GHz, 40 Watts

Features & Benefits



T-housing allows convenient cable access

Overview

PD3120 is a broadband, 2-way, power divider/power combiner furnished with SMA-Jack connectors in a T-Style housing. All wireless-band frequencies from 0.7 - 2.7 GHz are covered with optimal performance. Input power levels up to 40 watts can be handled in both power divider and power combiner applications. See **input power rating tables** for specific details.

Electrical

The heart of the unit is a precision designed and etched microstrip circuit on a low-loss, high frequency, dielectric substrate. Electrical performance is highlighted by 0.4 dB max insertion loss (above the 3.01 dB power split), 22 dB min isolation, 1.20:1 max input VSWR and 1.15:1 max output VSWR. Equal power split and balance is displayed by 0.2 dB max ampli-

tude balance and 2 degrees max phase balance. Narrow band performance over your frequency range may be even better. See **power divider test sweeps** for specific details.

Mechanical

The PD3120's T-Style housing allows convenient cable access to all connector ports. Mechanical features include precision CNC machined, brass, SMA-Jack connectors with tri-alloy plating to insure tarnish resistance and low-PIM operation. Connector pins are gold plated beryllium copper for reliability and low contact resistance. Virgin electrical grade PTFE insulators support the contact pins enabling high withstand voltage. Long-term operation and superior shielding is maintained by the rugged CNC-machined aluminum housing with yellow iridite finish. Secure mounting is provided by two 0.125 in. diameter (3.18 mm) through holes.

Physical

Housing dimensions are 1.98 in. wide by 1.98 in. deep by 0.75 in. high (50.3 x 50.3 x 19.1 mm). The SMA-Jack connectors extend 0.65 in. (16.5 mm) from the housing. Weight is 111 grams. Operating temperature range is from -65°C to +85°C. See **power divider outline drawing** for more information.

Warranty

Each unit is 100% electrically tested to insure complete compliance with all specifications. The PD3120 power divider/power combiner is covered by a **two-year warranty**.

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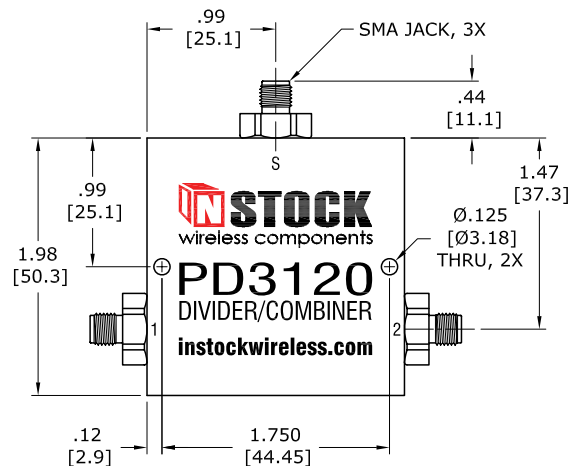
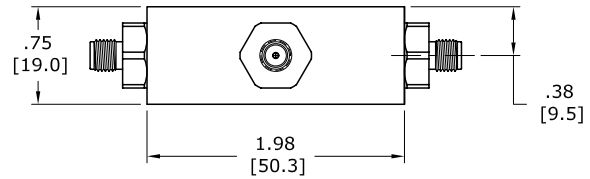
PD3120 - POWER DIVIDER/COMBINER

2-Way, SMA-Jack, T-Style, 0.7-2.7 GHz, 40 Watts



T-Style, SMA-Jack Connectors

- Broadband Frequency (0.7 - 2.7 GHz)
- Low Insertion Loss (0.2 dB avg)
- High Isolation (30 dB avg)
- Excellent VSWR (1.10 : 1 avg)
- Tri-Alloy Plated Connectors for Low PIM

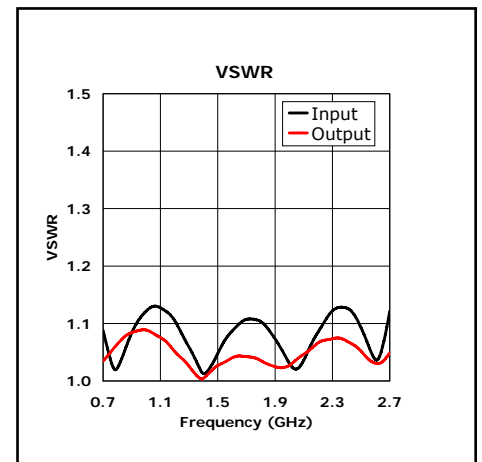
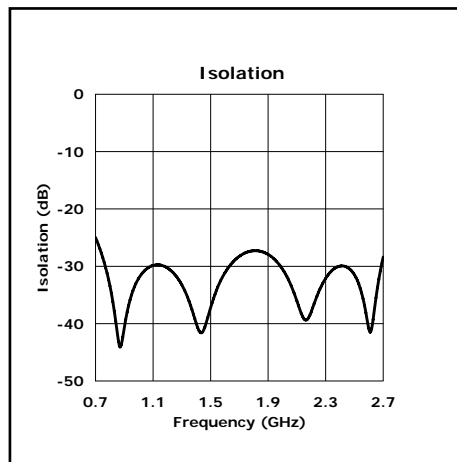
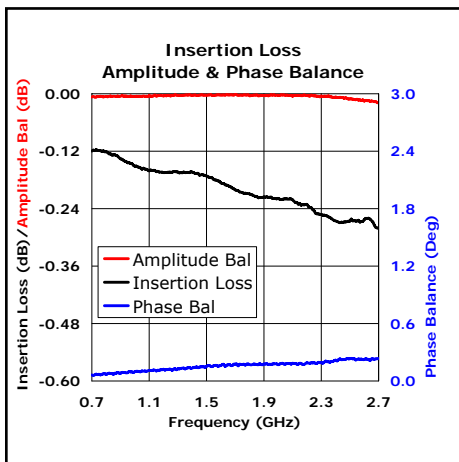


Mechanical Specifications

Connectors SMA-Jack, 3X
 Body Brass, Tri-Alloy Plate
 Connector Pin Beryllium Copper, Gold Plate
 Insulator PTFE, Virgin Electrical Grade
 Housing Aluminum, Yellow Iridite
 Operating Temp -65°C to +85°C
 Weight 111 Grams

| Power Divider Input Ratings | | |
|------------------------------|--------------|-------------------|
| Into Matched Load VSWR's | In-Phase | 180° Out-of-Phase |
| 1.2 : 1 | 40 Watts | 40 Watts |
| 2.0 : 1 | 40 Watts | 10 Watts |
| ∞ | 20 Watts | 1 Watt |
| Power Combiner Input Ratings | | |
| Input Signals | In-Phase | 180° Out-of-Phase |
| Coherent | 2 X 20 Watts | 2 X 0.5 Watts |
| Non-Coherent | 2 X 1 Watt | |

| Frequency Range | Insertion Loss (above 3.01 dB) | Amplitude Balance | Phase Balance | Isolation | Input VSWR | Output VSWR |
|-----------------|--------------------------------|-------------------|---------------|-----------|--------------|--------------|
| 0.7 - 2.7 GHz | 0.4 dB max | 0.2 dB max | 2° max | 22 dB min | 1.20 : 1 max | 1.15 : 1 max |



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