

# ***Innovative*** ***Power*** ***Products***

*Innovative Products to Power Your Success*

## **Our Broadband Products**

**90° Hybrid Couplers**

**Directional Couplers**

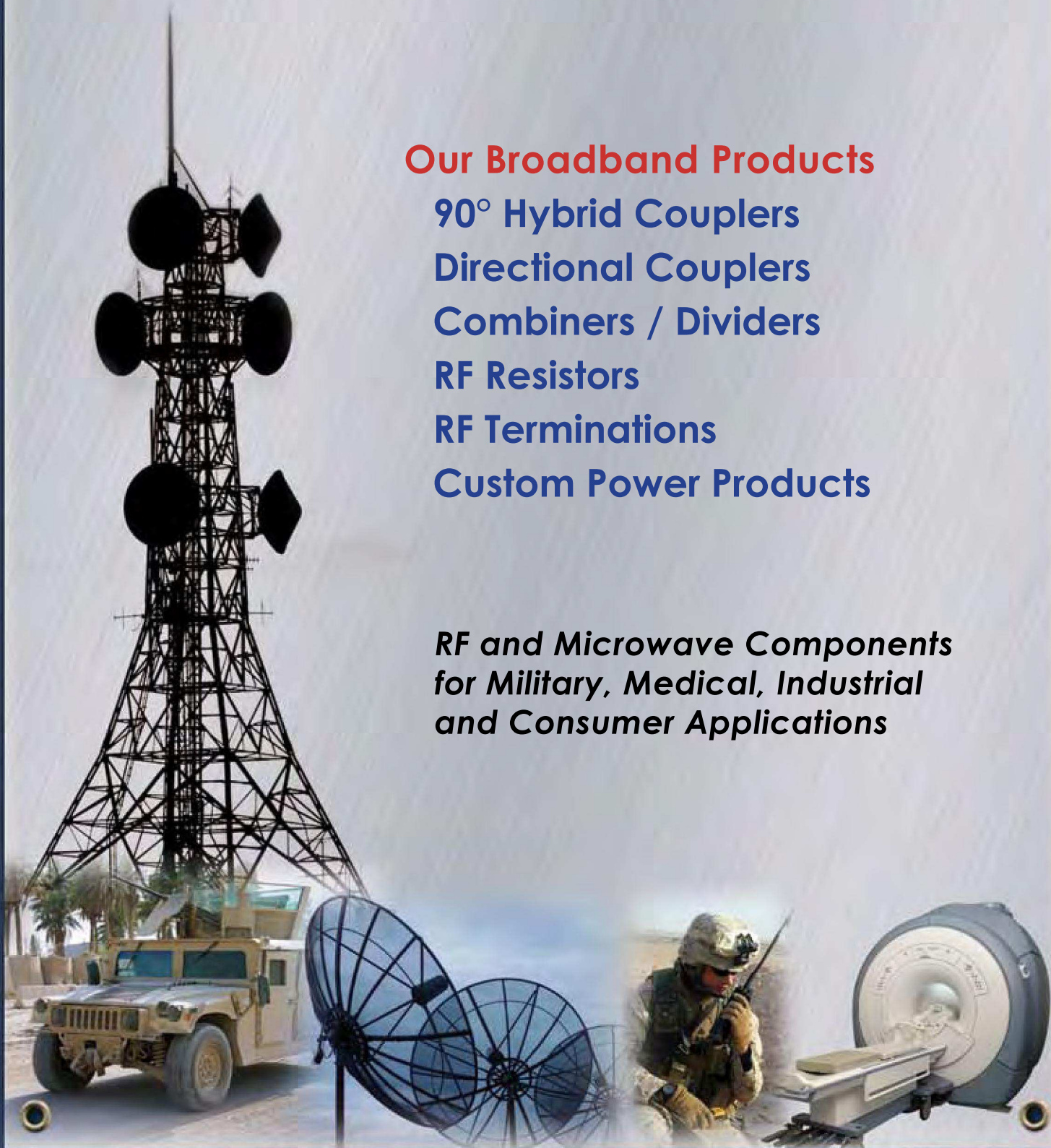
**Combiners / Dividers**

**RF Resistors**

**RF Terminations**

**Custom Power Products**

***RF and Microwave Components  
for Military, Medical, Industrial  
and Consumer Applications***





Contact us for the name of  
our sales representative in  
your region of the world.

Innovative Power Products, Inc. has over 25 years of experience designing and manufacturing RF and Microwave Passive Components. Our high power, broadband couplers, combiners, resistors and terminations are fabricated using the latest materials and design tools available, resulting in unrivaled product performance. Our ISO 9001:2008 registered quality system assures our customers of a reliable product for their application.

Innovative Power Product's broadband products are used around the world in RF and Microwave applications in military, medical, industrial and consumer markets. Innovative Power Products is quickly becoming a market leader by offering our customers competitive prices, fast delivery worldwide and outstanding customer service.

This catalog contains a list of our most popular products. Please visit our web site at [www.innovativepp.com](http://www.innovativepp.com) for a more comprehensive and current product listing. All of the products listed on our web site link to detailed mechanical drawings that contain electrical specifications. If you require performance data or "S" parameters, please contact us by phone, e-mail or by filling out the form on our web site.

We can design and manufacture custom products to suit your individual needs. If you can't find a product that meets your requirements in this catalog, or on our web site, please contact one of our design engineers with your specifications, and we will create a product for your application.

Thank you for considering Innovative Power Products as your supplier for RF and Microwave Passive components. Given the opportunity, we promise to impress you with our conscientious customer service. See for yourself why so many companies turn to us for superior passive components. Call 631-563-0088 to speak to an experienced Design Engineer about your upcoming project.



Innovative Power Products, Inc. is proud to announce that their Quality Management System has been successfully registered by Underwriters Laboratories for ISO 9001:2008.

Certificate Number: 10009425 QM08



Many of our products are available as RoHS compliant.



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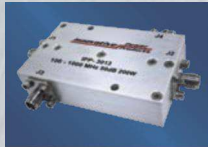
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## **Directional Couplers: Surface Mount ..... 8**

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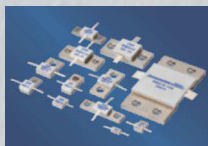
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We can design and manufacture custom products to suit your individual needs. Contact us with your specifications.



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Frequency Ranges from DC to 6000 MHz  
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Frequency Ranges from DC to 6000 MHz  
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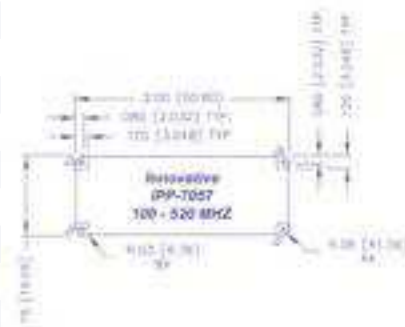
Frequency Ranges from DC to 6000 MHz in Power Levels up to 800 Watts CW. Available with "SMA" and "N" Connectors.

## 90° COUPLERS

Low insertion loss, low VSWR and high-power capability in a small package. Available in narrow and broad bandwidths, making them ideal for large volume power amplifier and antenna applications. The frequency range is from 100 MHz to 8500 MHz in power levels up to 1000 Watts CW. These are offered in surface mount and drop-in packages.

### 90° SMD COUPLERS

| PART NUMBER | FREQUENCY (MHz) | AVERAGE POWER (WATTS) | INSERTION LOSS (dB, MAX) | VSWR (MAX) | ISOLATION (dB, MIN) | AMPLITUDE BALANCE (+/- dB) | PHASE BALANCE (+/- DEG) | PACKAGE (W x L) (INCHES) |
|-------------|-----------------|-----------------------|--------------------------|------------|---------------------|----------------------------|-------------------------|--------------------------|
| IPP-7057    | 100 - 520       | 150                   | 0.60                     | 1.30:1     | 16.0                | 0.80                       | 5                       | .75 x 2.00               |
| IPP-7030    | 130 - 180       | 250                   | 0.25                     | 1.25:1     | 20.0                | 0.25                       | 5                       | 1.00 x 1.00              |
| IPP-7012    | 200 - 1000      | 150                   | 0.60                     | 1.30:1     | 16.0                | 0.80                       | 5                       | .75 x 2.00               |
| IPP-7054    | 225 - 450       | 200                   | 0.25                     | 1.25:1     | 20.0                | 0.50                       | 5                       | .50 x 1.26               |
| IPP-7022    | 295 - 605       | 200                   | 0.25                     | 1.27:1     | 18.0                | 0.65                       | 5                       | .50 x 1.00               |
| IPP-7056    | 400 - 1000      | 150                   | 0.25                     | 1.25:1     | 18.0                | 0.65                       | 5                       | .50 x 1.00               |
| IPP-7046    | 500 - 1000      | 150                   | 0.25                     | 1.25:1     | 18.0                | 0.55                       | 5                       | .48 x .65                |
| IPP-7017    | 500 - 2500      | 100                   | 0.50                     | 1.30:1     | 18.0                | 0.65                       | 5                       | .50 x 1.80               |
| IPP-7032    | 500 - 3000      | 100                   | 0.60                     | 1.30:1     | 18.0                | 0.80                       | 5                       | .50 x 1.80               |
| IPP-7025    | 595 - 1300      | 100                   | 0.25                     | 1.30:1     | 17.0                | 0.65                       | 5                       | .35 x .56                |
| IPP-7040    | 595 - 1300      | 200                   | 0.25                     | 1.25:1     | 18.0                | 0.65                       | 5                       | .50 x 1.00               |
| IPP-7052    | 800 - 1000      | 225                   | 0.20                     | 1.25:1     | 20.0                | 0.30                       | 5                       | .48 x .65                |
| IPP-7053    | 800 - 1000      | 300                   | 0.15                     | 1.25:1     | 20.0                | 0.30                       | 5                       | .50 x 1.00               |
| IPP-7048    | 800 - 1600      | 200                   | 0.25                     | 1.25:1     | 19.0                | 0.55                       | 5                       | .25 x .85                |
| IPP-7010    | 800 - 2500      | 200                   | 0.50                     | 1.30:1     | 18.0                | 0.60                       | 5                       | .40 x 1.80               |
| IPP-7013    | 800 - 2700      | 200                   | 0.50                     | 1.35:1     | 17.5                | 0.65                       | 5                       | .40 x 1.80               |
| IPP-7016    | 960 - 1200      | 150                   | 0.25                     | 1.25:1     | 20.0                | 0.30                       | 5                       | .35 x .56                |
| IPP-7047    | 1000 - 2000     | 150                   | 0.25                     | 1.25:1     | 20.0                | 0.55                       | 5                       | .35 x .56                |
| IPP-7055    | 1000 - 2500     | 150                   | 0.25                     | 1.25:1     | 20.0                | 0.65                       | 5                       | .35 x .56                |
| IPP-7015    | 1000 - 4200     | 80                    | 0.50                     | 1.30:1     | 18.0                | 0.60                       | 5                       | .40 x 1.80               |
| IPP-7026    | 1000 - 6000     | 50                    | 0.75                     | 1.40:1     | 15.0                | 0.80                       | 5                       | .20 x 1.65               |
| IPP-7009    | 1400 - 1700     | 200                   | 0.20                     | 1.25:1     | 20.0                | 0.35                       | 5                       | .48 x .65                |
| IPP-7045    | 1500 - 2750     | 150                   | 0.25                     | 1.25:1     | 20.0                | 0.45                       | 5                       | .25 x .85                |
| IPP-7007    | 1700 - 2700     | 200                   | 0.25                     | 1.30:1     | 15.0                | 0.60                       | 5                       | .35 x .56                |
| IPP-7050    | 1930 - 1990     | 150                   | 0.20                     | 1.20:1     | 20.0                | 0.20                       | 5                       | .35 x .56                |
| IPP-7051    | 1930 - 1990     | 300                   | 0.15                     | 1.25:1     | 20.0                | 0.25                       | 5                       | .50 x 1.00               |
| IPP-7018    | 2000 - 4000     | 100                   | 0.35                     | 1.31:1     | 18.0                | 0.50                       | 5                       | .35 x .56                |
| IPP-7006    | 2000 - 6000     | 100                   | 0.30                     | 1.30:1     | 18.0                | 1.00                       | 5                       | .20 x .56                |
| IPP-7004    | 2500 - 6000     | 100                   | 0.30                     | 1.30:1     | 18.0                | 0.75                       | 5                       | .20 x .56                |
| IPP-7031    | 2600 - 6100     | 100                   | 0.30                     | 1.30:1     | 18.0                | 0.75                       | 5                       | .20 x .56                |
| IPP-7019    | 2700 - 3100     | 300                   | 0.30                     | 1.30:1     | 18.0                | 0.30                       | 5                       | .50 x 1.00               |
| IPP-7039    | 4000 - 8000     | 75                    | 0.30                     | 1.30:1     | 17.0                | 0.60                       | 6                       | .20 x .40                |
| IPP-7044    | 6000 - 8500     | 100                   | 0.40                     | 1.30:1     | 17.0                | 0.35                       | 6                       | .20 x .40                |
| IPP-7020    | 7000 - 8000     | 125                   | 0.30                     | 1.30:1     | 17.0                | 0.35                       | 5                       | .20 x .40                |





## 90° DROP-IN COUPLERS



| PART NUMBER | FREQUENCY (MHz) | AVERAGE POWER (WATTS) | INSERTION LOSS (dB, MAX) | VSWR (MAX) | ISOLATION (dB, MIN) | AMPLITUDE BALANCE (+/- dB) | PHASE BALANCE (+/- DEG) | PACKAGE (W x L) (INCHES) |
|-------------|-----------------|-----------------------|--------------------------|------------|---------------------|----------------------------|-------------------------|--------------------------|
| IPP-2169    | 20 - 520        | 200                   | 0.80                     | 1.30:1     | 16.0                | 0.30                       | 10                      | 3.00 x 3.00              |
| IPP-2052    | 30 - 88         | 400                   | 0.25                     | 1.30:1     | 18.0                | 0.95                       | 5                       | 2.65 x 2.65              |
| IPP-2140    | 80 - 500        | 200                   | 0.60                     | 1.30:1     | 16.0                | 0.75                       | 6                       | 1.51 x 2.40              |
| IPP-2133    | 80 - 500        | 800                   | 0.35                     | 1.30:1     | 16.0                | 0.95                       | 5                       | 2.50 x 6.00              |
| IPP-2192    | 80 - 1000       | 250                   | 0.75                     | 1.35:1     | 16.0                | 1.20                       | 8                       | 2.50 x 3.70              |
| IPP-2010    | 88 - 108        | 800                   | 0.20                     | 1.25:1     | 20.0                | 0.40                       | 5                       | 2.50 x 5.00              |
| IPP-2069    | 100 - 500       | 150                   | 0.50                     | 1.30:1     | 16.0                | 0.75                       | 6                       | 1.50 x 3.30              |
| IPP-2092    | 100 - 520       | 200                   | 0.60                     | 1.30:1     | 16.0                | 0.75                       | 6                       | 1.51 x 2.07              |
| IPP-2011    | 100 - 500       | 400                   | 0.40                     | 1.25:1     | 18.0                | 0.70                       | 5                       | 2.50 x 5.00              |
| IPP-2012    | 100 - 500       | 800                   | 0.35                     | 1.30:1     | 16.0                | 0.80                       | 5                       | 2.50 x 5.00              |
| IPP-2001    | 120 - 230       | 200                   | 0.30                     | 1.25:1     | 20.0                | 0.50                       | 5                       | 0.80 x 2.20              |
| IPP-2087    | 130 - 180       | 800                   | 0.20                     | 1.25:1     | 18.0                | 0.30                       | 5                       | 2.65 x 2.65              |
| IPP-2019    | 130 - 180       | 200                   | 0.25                     | 1.25:1     | 20.0                | 0.40                       | 5                       | 0.80 x 2.20              |
| IPP-2057    | 200 - 1000      | 150                   | 0.50                     | 1.30:1     | 16.0                | 0.75                       | 5                       | 0.90 x 3.20              |
| IPP-2136    | 200 - 2000      | 100                   | 0.80                     | 1.40:1     | 16.0                | 0.90                       | 8                       | 1.00 x 3.30              |
| IPP-2058    | 225 - 400       | 200                   | 0.25                     | 1.20:1     | 20.0                | 0.50                       | 5                       | 0.56 x 1.62              |
| IPP-2031    | 225 - 450       | 400                   | 0.25                     | 1.25:1     | 20.0                | 0.50                       | 5                       | 0.80 x 2.20              |
| IPP-2038    | 225 - 450       | 800                   | 0.20                     | 1.25:1     | 20.0                | 0.50                       | 5                       | 2.65 x 2.65              |
| IPP-2002    | 400 - 1000      | 200                   | 0.25                     | 1.25:1     | 18.5                | 0.65                       | 5                       | 0.50 x 1.35              |
| IPP-2060    | 400 - 1000      | 400                   | 0.25                     | 1.25:1     | 20.0                | 0.70                       | 5                       | 0.50 x 2.00              |
| IPP-2102    | 400 - 1000      | 800                   | 0.20                     | 1.25:1     | 20.0                | 0.70                       | 5                       | 2.65 x 2.65              |
| IPP-2187    | 400 - 2500      | 200                   | 0.50                     | 1.30:1     | 17.0                | 0.80                       | 5                       | 1.30 x 2.20              |
| IPP-2006    | 500 - 1000      | 200                   | 0.25                     | 1.20:1     | 20.0                | 0.50                       | 5                       | 0.50 x 1.35              |
| IPP-2061    | 500 - 1000      | 400                   | 0.25                     | 1.25:1     | 20.0                | 0.55                       | 5                       | 0.50 x 2.00              |
| IPP-2013    | 500 - 2500      | 150                   | 0.50                     | 1.30:1     | 18.0                | 0.65                       | 5                       | 0.80 x 2.20              |
| IPP-2072    | 500 - 2500      | 200                   | 0.50                     | 1.32:1     | 17.0                | 0.70                       | 6                       | 0.80 x 2.20              |
| IPP-2018    | 500 - 3000      | 125                   | 0.60                     | 1.30:1     | 18.0                | 0.80                       | 5                       | 0.80 x 2.20              |
| IPP-2148    | 500 - 3000      | 200                   | 0.50                     | 1.32:1     | 17.0                | 0.70                       | 5                       | 0.80 x 2.20              |
| IPP-2024    | 800 - 1600      | 200                   | 0.25                     | 1.25:1     | 20.0                | 0.50                       | 5                       | 0.50 x 1.35              |
| IPP-2167    | 800 - 1650      | 400                   | 0.20                     | 1.30:1     | 18.0                | 0.60                       | 5                       | 0.50 x 1.35              |
| IPP-2036    | 800 - 2000      | 150                   | 0.25                     | 1.25:1     | 19.0                | 0.65                       | 5                       | 0.50 x 1.35              |
| IPP-2014    | 800 - 2500      | 200                   | 0.50                     | 1.30:1     | 18.0                | 0.60                       | 5                       | 0.80 x 2.20              |
| IPP-2093    | 800 - 2700      | 400                   | 0.40                     | 1.30:1     | 17.0                | 0.60                       | 5                       | 0.90 x 3.20              |
| IPP-2079    | 800 - 3000      | 200                   | 0.50                     | 1.30:1     | 16.0                | 0.65                       | 5                       | 0.80 x 2.20              |
| IPP-2007    | 1000 - 2000     | 200                   | 0.25                     | 1.20:1     | 20.0                | 0.50                       | 5                       | 0.50 x 1.35              |
| IPP-2041    | 1000 - 2000     | 400                   | 0.20                     | 1.25:1     | 20.0                | 0.40                       | 5                       | 0.50 x 1.35              |
| IPP-2042    | 1000 - 2000     | 1000                  | 0.20                     | 1.25:1     | 18.0                | 0.50                       | 5                       | 1.00 x 2.40              |
| IPP-2005    | 1000 - 2500     | 200                   | 0.25                     | 1.25:1     | 19.0                | 0.65                       | 5                       | 0.50 x 1.35              |
| *IPP-4011   | 1000 - 2500     | 300                   | 0.50                     | 1.30:1     | 14.0                | 0.90                       | 5                       | 0.80 x 2.20              |
| IPP-2004    | 1000 - 4200     | 80                    | 0.50                     | 1.30:1     | 18.0                | 0.50                       | 5                       | 0.80 x 2.20              |
| IPP-2062    | 1300 - 3000     | 150                   | 0.25                     | 1.25:1     | 18.0                | 0.60                       | 5                       | 0.50 x 1.35              |
| IPP-2015    | 2000 - 4000     | 100                   | 0.40                     | 1.25:1     | 18.0                | 0.50                       | 5                       | 0.50 x 1.35              |
| IPP-2074    | 2000 - 6000     | 100                   | 0.30                     | 1.30:1     | 18.0                | 1.00                       | 5                       | 0.25 x 1.30              |

\* Impedance transforming hybrid 50Ω - 25Ω.

