## The Big Deal

- Wideband coverage, DC to 3000 MHz
- Good return loss
- Good power handling, 1W


## Product Overview

Mini-Circuits' SFFF-5075+ is a coaxial $50 / 75 \Omega$ matching pad covering the DC to 3000 MHz frequency range, supporting impedance matching in a wide range of systems. Including CATV, broadband networks and more. This model is ideal for $50 / 75 \Omega$ impedance matching in systems where minimizing mismatch and signal reflections is a priority. The matching pad housed in a rugged unibody construction with SMA-female ( $50 \Omega$ ) to F-female ( $75 \Omega$ ) connectors.

Key Features

| Feature | Advantages |
| :--- | :--- |
| Wideband, DC to 3000 MHz | Supports a wide variety of applications including CATV systems and equipment. |
| Compact size, $0.67 " \times 2.26 "$ | Accommodates tight space requirements for crowded system layouts. |
| Connectorized package | Easy to interface with other devices and well suited for test setups. Also supports connection between <br> components with different connector types. |

## Notes

A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled
to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

## Coaxial

| Maximum Ratings |
| :--- |
| Operating Temperature$\quad-45^{\circ} \mathrm{C}$ to $85^{\circ} \mathrm{C}$ |
| Storage Temperature $\quad-55^{\circ} \mathrm{C}$ to $100^{\circ} \mathrm{C}$ |
| Input Power $\quad 1 \mathrm{~W}$ |
| Pemment damage may occur if any of these limits are exceeded. |

Coaxial Connections

| $75 \Omega$ | F-Female |
| ---: | ---: |
| $50 \Omega$ | SMA-Female |


| A | B | C | D | E | Wt. |
| :--- | ---: | :--- | ---: | ---: | ---: |
| -- | .67 | -- | 2.26 | -- | grams |
| -- | 17.02 | -- | 57.40 | -- | 32.2 |

Note: Please refer to case style drawing for details

Functional Schematic



## Features

- Wideband coverage, DC to 3000 MHz
- Good return loss
- Rugged unibody construction
- Unidirectional only, 50-75


## Applications

- Impedance matching
- CATV Systems


Generic photo used for illustration purposes only
CASE STYLE: FF1833
Connectors Model
$75 \Omega$ F-F SFFF-5075+ $50 \Omega$ F-SMA
+RoHS Compliant
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Electrical Specifications at $25^{\circ} \mathrm{C}$

| Parameter | Frequency (MHz) | Min. | Typ. | Max. | Unit |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Frequency Range |  | DC | -- | 3000 | MHz |
| Attenuation Nominal <br>  Flatness ${ }^{1}$ | $\begin{aligned} & \text { DC - } 3000 \\ & \text { DC - } 3000 \end{aligned}$ |  | $5.9$ | $0.4$ | dB |
| $75 \Omega$ Return Loss | $\begin{gathered} \text { DC - } 100 \\ 100-1200 \\ 1200-3000 \end{gathered}$ | $35$ | $\begin{aligned} & 50 \\ & 22 \\ & 15 \end{aligned}$ |  | dB |
| $50 \Omega$ Return Loss | $\begin{gathered} \text { DC - } 100 \\ 100-1200 \\ 1200-3000 \end{gathered}$ | $38$ | $\begin{aligned} & 50 \\ & 30 \\ & 15 \end{aligned}$ |  | dB |
| Input Power | DC - 3000 | -- | -- | 1 | w |

1. Flatness= variation over band divided by 2

Typical Performance Data at $25^{\circ} \mathrm{C}$

| Frequency <br> $(\mathbf{M H z})$ | Attenuation <br> $(\mathbf{d B})$ | Return Loss <br> $(\mathbf{d B})$ |  |
| :---: | :---: | :---: | :---: |
| 1.00 | 5.75 | $\mathbf{7 5 \Omega}$ | $50 \Omega$ |
| 25.75 | 5.76 | 52.05 | 57.19 |
| 50.50 | 5.76 | 50.74 | 58.76 |
| 75.25 | 5.77 | 47.04 | 60.39 |
| 100.00 | 5.78 | 44.66 | 6.19 |
| 375.00 | 5.84 | 42.98 | 63.95 |
| 650.00 | 5.87 | 33.48 | 51.80 |
| 925.00 | 5.91 | 29.74 | 46.25 |
| 1200.00 | 5.93 | 28.29 | 43.91 |
| 1400.00 | 5.96 | 27.53 | 42.88 |
| 1800.00 | 5.94 | 27.49 | 43.40 |
| 2200.00 | 5.91 | 28.42 | 41.10 |
| 2400.00 | 5.92 | 33.31 | 31.52 |
| 2600.00 | 5.90 | 34.55 | 27.61 |
| 2800.00 | 5.93 | 29.99 | 24.17 |
| 3000.00 | 5.93 | 25.76 | 21.42 |
|  |  | 22.91 | 19.09 |



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| FREQ. | INSERTION LOSS | INPUT RETURN LOSS (50 ) | OUTPUT RETURN LOSS (75 ) |
| :---: | :---: | :---: | :---: |
| (MHz) | (dB) | (dB) | (dB) |
| 1.00 | 5.75 | 57.19 | 52.05 |
| 13.38 | 5.75 | 58.05 | 53.64 |
| 25.75 | 5.76 | 58.76 | 50.74 |
| 38.13 | 5.76 | 59.42 | 48.90 |
| 50.50 | 5.76 | 60.39 | 47.04 |
| 62.88 | 5.77 | 61.15 | 45.96 |
| 75.25 | 5.77 | 62.19 | 44.66 |
| 87.63 | 5.78 | 63.02 | 43.80 |
| 100.00 | 5.78 | 63.95 | 42.98 |
| 237.50 | 5.81 | 57.86 | 36.73 |
| 375.00 | 5.84 | 51.80 | 33.48 |
| 512.50 | 5.86 | 48.24 | 31.32 |
| 650.00 | 5.87 | 46.25 | 29.74 |
| 787.50 | 5.89 | 45.00 | 28.88 |
| 925.00 | 5.91 | 43.91 | 28.29 |
| 1062.50 | 5.92 | 43.42 | 27.80 |
| 1200.00 | 5.93 | 42.88 | 27.53 |
| 1400.00 | 5.96 | 43.40 | 27.49 |
| 1600.00 | 5.94 | 43.11 | 27.71 |
| 1800.00 | 5.94 | 41.10 | 28.42 |
| 2000.00 | 5.91 | 36.16 | 30.40 |
| 2200.00 | 5.91 | 31.52 | 33.31 |
| 2400.00 | 5.92 | 27.61 | 34.55 |
| 2600.00 | 5.90 | 24.17 | 29.99 |
| 2800.00 | 5.93 | 21.42 | 25.76 |
| 3000.00 | 5.93 | 19.09 | 22.91 |

## Typical Performance Curves




## Case Style

## Outline Dimensions



| CASE \#. | A | B | C | D | E | WT GRAMS |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| FF1833 | -- | .67 <br> $(17.02)$ | -- | 2.26 <br> -- <br> $(57.40)$ | - | 32.2 |
|  |  | -- | 32.2 |  |  |  |

Dimensions are in inches (mm). Tolerances: 2Pl. $\pm .03$; 3Pl. $\pm .015$

## Notes:

1. Case material: Brass.
2. Case Finish: Nickel plate.
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs \& shopping online see Mini-Circuits web site

## $\square$ Mini-Circuits

All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

| Specification | Test/Inspection Condition | Reference/Spec |
| :---: | :---: | :---: |
| Operating Temperature | $-55^{\circ} \text { to } 100^{\circ} \mathrm{C}$ <br> Ambient Environment | Individual Model Data Sheet |
| Storage Temperature | $-55^{\circ} \text { to } 100^{\circ} \mathrm{C}$ <br> Ambient Environment | Individual Model Data Sheet |
| Barometric Pressure | 100,000 Feet | MIL-STD-202, Method 105, Condition D |
| Humidity | $90 \% \mathrm{RH}, 65^{\circ} \mathrm{C}$ <br> Units may require bake-out after humidity to restore full performance. | MIL-STD-202, Method 103 |
| Thermal Shock | $-65^{\circ}$ to $125^{\circ} \mathrm{C}, 5$ cycles | MIL-STD-202, Method 107, Condition B |
| Vibration (High Frequency) | 20 g peak, $10-2000 \mathrm{~Hz}, 12$ times in each of three perpendicular directions (total 36) | MIL-STD-202, Method 204, Condition D |
| Mechanical Shock | $100 \mathrm{~g}, 6 \mathrm{~ms}$ sawtooth, 3 shocks each direction 3 axes (total 18) | MIL-STD-202, Method 213, Condition I |
| ENV28 Rev: B 09/26/13 M143494 File: ENV28.pdf |  |  |
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