



## KF22 Series Right Angle PCB Mount .318" Footprint with Ferrite

### Ordering Information

| KF22                                                                                                              | - | B          | 25                 | S            | - | N                |                 |
|-------------------------------------------------------------------------------------------------------------------|---|------------|--------------------|--------------|---|------------------|-----------------|
| Series                                                                                                            |   | Shell Size | Number of Contacts | Contact Type |   | Mounting Options | Plating Options |
| <b>Series</b><br>KF22 - Kycon D-Subminiature Connector, Right Angle PCB Termination, .318 Footprint, with Ferrite |   |            |                    |              |   |                  |                 |
| <b>Shell Size</b><br>E - 9 Contacts<br>A - 15 Contacts<br>B - 25 Contacts<br>C - 37 Contacts                      |   |            |                    |              |   |                  |                 |
| <b>Number of Contacts</b><br>9, 15, 25, 37                                                                        |   |            |                    |              |   |                  |                 |
| <b>Contact Type</b><br>P - Pin Contact (Plug)<br>S - Socket Contact (Receptacle)                                  |   |            |                    |              |   |                  |                 |
| <b>Mounting Options</b> (see page 35)                                                                             |   |            |                    |              |   |                  |                 |
| <b>Plating Options and Performance Specifications</b> (see page 4)                                                |   |            |                    |              |   |                  |                 |

### Ferrite Specifications

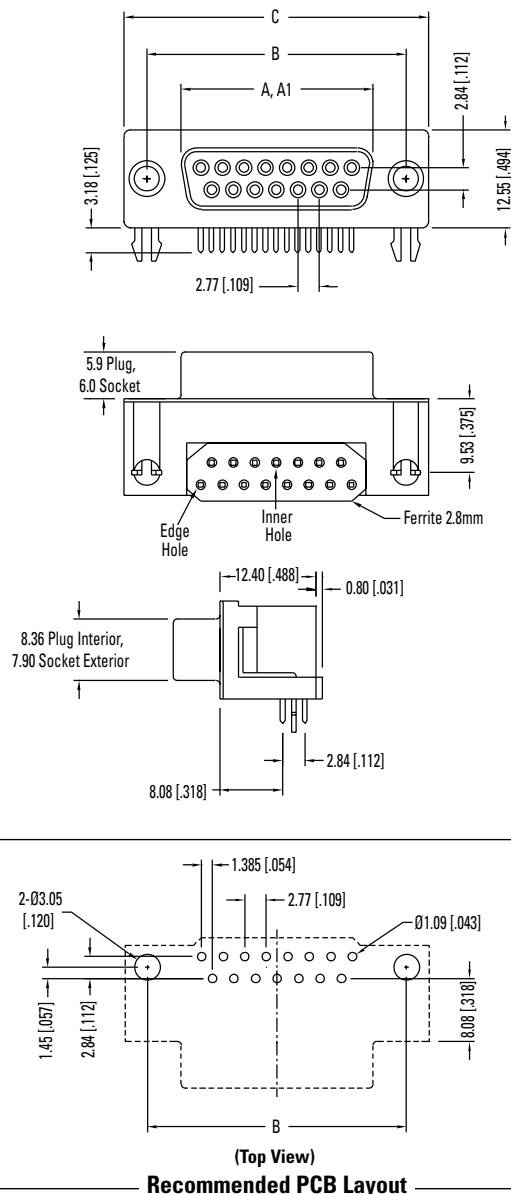
| Test Frequency | Edge Hole  | Inner Hole |
|----------------|------------|------------|
| 30 MHz         | 17-27 Ohms | 22-30 Ohms |
| 50 MHz         | 22-30 Ohms | 29-37 Ohms |
| 100 MHz        | 29-34 Ohms | 35-40 Ohms |

## FERRITE D-SUBMINIATURE

### KF22 Series

### KF22 Series Dimensions

Pictured with Board Lock Option, Dimensions in mm [In]



| Shell Size       | A                     | AI                    | B                     | C                     |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| In mm            | ±.010<br>±0.25        | ±.010<br>±0.25        | ±.005<br>±0.13        | ±.015<br>±0.38        |
| <b>9</b><br>(E)  | <b>.643</b><br>16.33  | <b>.666</b><br>16.92  | <b>.984</b><br>24.99  | <b>1.213</b><br>30.81 |
| <b>15</b><br>(A) | <b>.971</b><br>24.66  | <b>.994</b><br>25.25  | <b>1.312</b><br>33.32 | <b>1.541</b><br>39.14 |
| <b>25</b><br>(B) | <b>1.511</b><br>38.38 | <b>1.534</b><br>38.96 | <b>1.852</b><br>47.04 | <b>2.088</b><br>53.04 |
| <b>37</b><br>(C) | <b>2.159</b><br>54.84 | <b>2.182</b><br>55.42 | <b>2.500</b><br>63.50 | <b>2.729</b><br>69.32 |

**A = Exterior of Female Shell (S)**  
**A1 = Interior of Male Shell (P)**

### Mounting Options

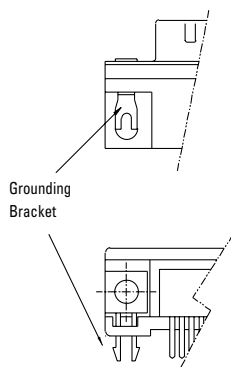
**K22, KF22,**

**K66, KF66**

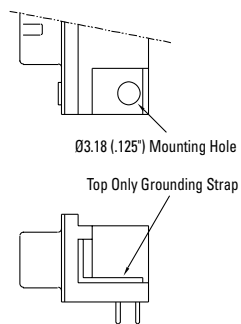
| Front Panel Mounting Options                                     | PCB Mounting Options  |                                                                           |                                                                                              |                     |
|------------------------------------------------------------------|-----------------------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|---------------------|
|                                                                  | Grounding Board Locks | Top Only Grounding Straps with Non-Threaded .125" Diameter Mounting Holes | Wrap Around Grounding Straps with Non-Threaded .125" Diameter Mounting Holes (K22/KF22/Only) | 4 Prong Board Locks |
| Riveted Threaded Inserts                                         | <b>N</b>              | <b>H</b>                                                                  | <b>O</b>                                                                                     | <b>NV</b>           |
| Riveted Threaded Inserts with 4-40 Hex. Jack Screws Installed    | <b>NJ</b>             | <b>HJ</b>                                                                 | <b>OJ</b>                                                                                    | <b>NVJ</b>          |
| 4-40 Round Jackscrews Riveted to Connector                       | <b>NR</b>             | <b>HR</b>                                                                 | <b>OR</b>                                                                                    | <b>NVR</b>          |
| Non-Threaded Riveted Inserts                                     | <b>NT</b>             | <b>HT</b>                                                                 | <b>OT</b>                                                                                    | <b>NVT</b>          |
| Riveted Threaded Inserts with M3/4-40 Hex. Jack Screws Installed | <b>NJM</b>            | <b>HJM</b>                                                                | <b>OJM</b>                                                                                   | <b>NVJM</b>         |

### PC Board Mounting Options

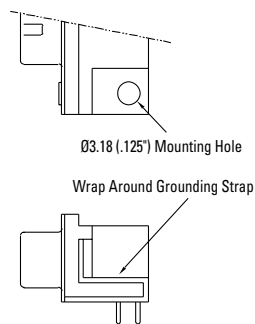
**N Option**



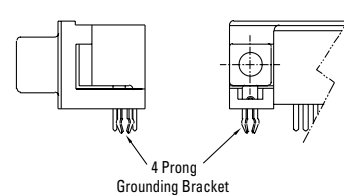
**H Option**



**O Option**



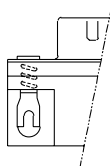
**NV Option**



### Front Panel Mounting Options

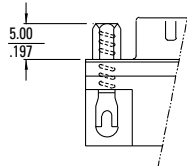
**Standard**

(4-40) Riveted Threaded Insert



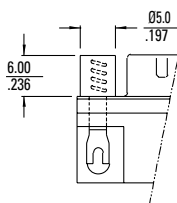
**-J Option**

(4-40) Riveted Threaded Insert with 4-40 Hex. JS1000 Jack Screws Installed to Connector



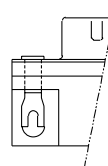
**-R Option**

(4-40) Round Jack Screws Riveted to Connector



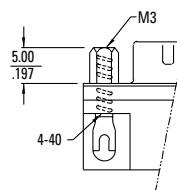
**-T Option**

Riveted Non-Threaded Insert 3.18/.125" Dia.



**-JM Option**

(4-40) Riveted Threaded Insert with M3/4-40 Hex. Jack Screws Installed to Connector



***KYCON continues its leadership in D-Subminiature connectors by offering a complete line of sizes and options.***

**PC99 Colors Available:**

- HD15: Blue
- DB15: Gold
- DB25: Burgundy
- DB09: Teal



## D-SUBMINIATURE CONNECTORS

### Performance Specifications

#### Materials and Finish

**Shell**

Steel Material, Tin Finish, and Indentations (Dimples) on Plug Only

**Insert**

Standard: PBT Thermoplastic, Black Color, 30% Glass Filled, 94V-0 Rated  
Reflow Compatible: High Temperature Thermoplastic, Black Color, 30% Glass Filled, 94V-0 Rated

**Contact Material**

Pin: Brass .040 (1.02) Diameter Standard; .030 (0.76) Diameter High Density  
Socket: Phosphor Bronze (Precision Formed Contact)  
Brass (Precision Machined Contact)

**Contact Finish-Standard**

Gold Flash Over 0.0001 (0.00254) Nickel on Mating End of Contacts  
Tin/Lead Over Nickel or Gold Flash Over Nickel on Solder Tails

**Riveted Insert**

Brass Material, Nickel Finish

#### Mechanical Characteristics

**Contact Retention**

Precision Machined Contact 10 Lbs, Precision Formed Contact 10 Lbs

**Contact Extraction Force**

Typ. 4 Oz.

**Contact Insertion Force**

Typ. 9 Oz.

**Durability**

1,000 Insertion Cycles Min (With Standard Plating)

**Operating Temperature Rating**

-55°C to +125°C

#### Electrical Characteristics

**Contact Current Rating**

Precision Machined Contact 7.6 Amps  
Precision Formed Contact 5.0 Amps (Except K99 Series)

**Contact Resistance**

Precision Machined Contact 5 Milliohms Max  
Precision Formed Contact 8 Milliohms Max

**Dielectric Withstanding Voltage**

1000 V AC Min for 1 Minute

**Insulation Resistance**

5000 Megohms Min

#### Processing Characteristics

**Soldering Temperature Rating**

High Temperature Plastic: 230°C for 30 Seconds, 260°C for 10 Seconds

#### Plating Options

| Designator | Plating Description                                                                                 |
|------------|-----------------------------------------------------------------------------------------------------|
| Standard   | Gold Flash over Nickel on Contacts. Gold Flash over Nickel or Tin/Lead over Nickel on Solder Tails. |
| 15         | 15µ" Gold over Nickel on Mating End of Contacts. Tin/Lead over Nickel on Solder Tails.              |
| 30         | 30µ" Gold over Nickel on Mating End of Contacts. Tin/Lead over Nickel on Solder Tails.              |

**KYCON continues its leadership in Ferrite D-Subs by offering a complete line of styles, sizes, and pin configurations.**

### Features:

- Applications include Computer Peripherals, Data Processing, Telecommunications, Industrial Controls, and Local Area Networks
- High performance ferrite filter with superior high frequency attenuation characteristics
- Minimal effect on fundamental waveforms
- EMI/RFI noise suppression in data communication lines
- Cost effective way to meet FCC and VDE Class B requirements
- Does not require any more board space than a standard D-Sub
- No need to redesign board layout to accommodate separate filter placement
- UL Recognized File No. E140125

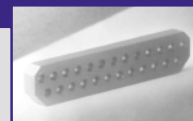


## FERRITE D-SUBMINIATURE CONNECTORS

### Directory

#### Right Angle

|                                             |           |
|---------------------------------------------|-----------|
| <b>KF22 - 0.318" footprint</b>              | <b>28</b> |
| <b>KF44 - 0.590" footprint</b>              | <b>29</b> |
| <b>KF66 - High Density 0.350" footprint</b> | <b>30</b> |
| <b>KF42 - Dual Port</b>                     | <b>31</b> |



#### Vertical

|                            |           |
|----------------------------|-----------|
| <b>KF85 - Low Profile</b>  | <b>32</b> |
| <b>KF86 - High Density</b> | <b>33</b> |
| <b>KF88 - High Profile</b> | <b>34</b> |



### Technical Information:

Ferrite filters provide an easy and efficient way of reducing both radiated and conducted interference. KYCON uses a medium permeability nickel zinc ferrite material that is most effective at attenuating frequencies above 30MHz.

$$Attenuation = 20 \log_{10} \frac{[Z_s + Z_F + Z_L]}{[Z_s + Z_L]} \text{ dB}$$

Where  $Z_s$  = Source Impedance

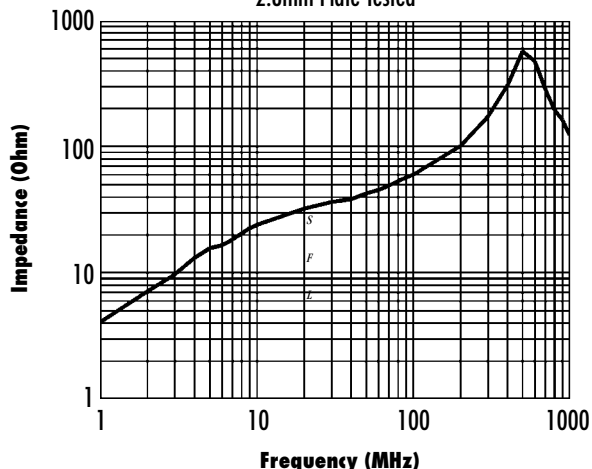
$Z_F$  = Ferrite Impedance

$Z_L$  = Load Impedance

With the above impedance values calculated at the interference frequency.

#### Typical Impedance of KYCON Ferrite D-Sub

2.8mm Plate Tested



The above chart is typical performance data for a 2.8mm thick ferrite plate at room temperature. Impedance will be reduced by increased temperature (down approx. 15% at 100°C at 25MHz) and by increased DC bias (down approx. 15% at 1 amp at 25MHz). Also, impedance varies with ferrite thickness. Please contact our technical support for data specific to your application.

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[KF22-E9S-H15](#) [KF22-C37P-OR30](#) [KF22-E9S-H30](#) [KF22-B25P-NT15](#) [KF22-E9P-OR15](#) [KF22-E9S-O](#) [KF22-E9P-](#)  
[HT30](#) [KF22-E9S-H](#) [KF22-E9P-HT15](#) [KF22-A15S-NVJ](#) [KF22-B25S-NVR](#) [KF22-B25S-NVJ](#) [KF22-A15P-OR15](#) [KF22-](#)  
[A15P-OR30](#) [KF22-C37P-O15](#) [KF22-C37P-NVJ](#) [KF22-A15S-NVJ30](#) [KF22-E9P-NJ30](#) [KF22-A15P-NVJ30](#) [KF22-](#)  
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[KF22-B25P-HT30](#) [KF22-A15S-NVJ15](#) [KF22-A15P-OR](#) [KF22-A15P-HJ](#) [KF22-A15P-HT](#) [KF22-A15P-HR](#) [KF22-A15P-](#)  
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[H15](#) [KF22-E9P-NVR](#) [KF22-B25P-OT15](#) [KF22-E9P-NVJ](#) [KF22-C37P-NV30](#) [KF22-B25P-NR30](#) [KF22-B25P-NR15](#)  
[KF22-A15P-NV30](#) [KF22-C37P-NV15](#) [KF22-B25P-OR15](#) [KF22-B25P-OR30](#) [KF22-C37P-HR](#) [KF22-C37P-HJ](#) [KF22-](#)  
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