



TDPX filter connectors are used primarily on commercial and military aircraft for radio and instrumentation equipment and are available in single thru four gang version with standard ARINC shells and polarizing posts. They are intermateable with the standard DPX connectors and available in 9 contact arrangements.

Meets applicable portions of MIL-Spec.

Note: The TDPX replaces the obsolete DPXJ Series

## Performance and Material Specifications

### MATERIALS AND FINISHES

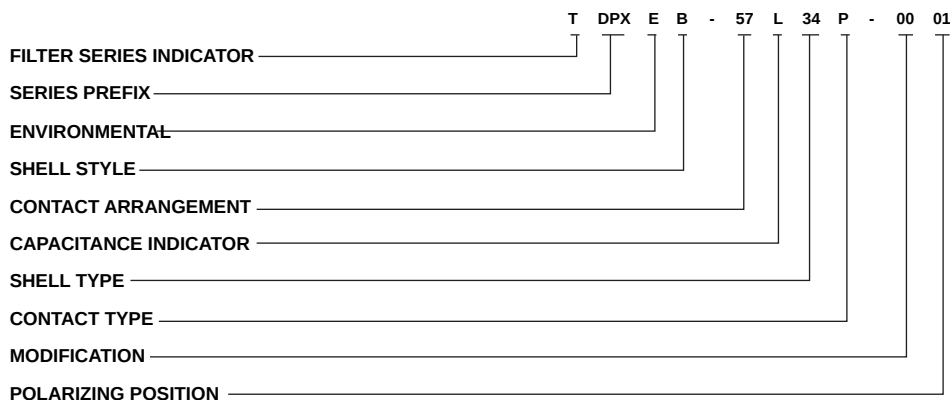
| Description                      | Material           | Finish                          |
|----------------------------------|--------------------|---------------------------------|
| Shell                            | Aluminum alloy     | Cadmium plate (yellow chromate) |
| Contacts                         | Copper alloy       | Gold over suitable underplate   |
| Insulator                        | High grade plastic | none                            |
| Interfacial and Peripheral Seals | Neoprene rubber    | none                            |
| Ground Plane                     | Beryllium copper   | Silver plate                    |
| Polarizing Posts                 | Stainless steel    | Passivate                       |

### ELECTRICAL

| Contacts Size                                                               | 20 & 22                         | 20, 16 & 22                           |                | 16           |                  |         |
|-----------------------------------------------------------------------------|---------------------------------|---------------------------------------|----------------|--------------|------------------|---------|
| Available Filter                                                            | Low Freq.                       | Mid Freq.                             | Std. Freq.     | High Freq.   | Low Freq.        |         |
| Catalog Reference                                                           | L                               | M                                     | T              | H            | L                |         |
| Voltage Rating                                                              | 200 VDC - 120 VAC rms 400 Hz    |                                       |                |              |                  |         |
| Current Rating (Amp DC)                                                     | 5 amp                           | 7.5 amp - size #20, 20 amp - size #16 |                |              | 20 amp           |         |
| Insulation Resistance, 2 min. electrification time max. at 25°C and 100 VDC | 5,000 megohms minimum @ 100 VDC |                                       |                |              |                  |         |
| DWV, sea level, with 500 microamps max. charge/discharge current            | 300 VDC                         | 500 VDC                               |                |              | 500 VDC          |         |
| Capacitance at 1 KHz, 0.1 V rms picofarads                                  | 32,000<br>45,000                | 8,000<br>12,000                       | 2,300<br>5,000 | 850<br>1,300 | 32,000<br>45,000 |         |
| Attenuation per MIL-STD-220 at 25°C with no applied voltage or current.     | Freq. MHz                       | Attenuation (dB)                      |                |              |                  |         |
|                                                                             | 0.1                             | 2 min.                                | -              | -            | -                | 2 min.  |
|                                                                             | 1                               | 15 min.                               | 2 min.         | -            | -                | 15 min. |
|                                                                             | 2                               | 20 min.                               | 5 min.         | 2 min.       | -                | 20 min. |
|                                                                             | 10                              | 35 min.                               | 20 min.        | 12 min.      | 2 min.           | 35 min. |
|                                                                             | 100                             | 60 min.                               | 55 min.        | 50 min.      | 30 min.          | 50 min. |
|                                                                             | 500 to 10,000                   | 65 min.                               | 60 min.        | 55 min.      | 50 min.          | 50 min. |
| Filter Type                                                                 | Pi                              | Pi                                    | Pi             | Pi           | Pi               |         |

†=Check Factory for availability of Size 22 "T" filters.

## How to Order - Single Gang



### FILTER SERIES INDICATOR

T - Transverse Monolith

### SERIES PREFIX

Single gang DPX

### ENVIRONMENTAL

E - For interfacial (pin)  
Delete for standard

### SHELL STYLE

B - Polarized ARINC B shell (preferred)  
D - DPXA flange (less polarizing posts)

### CONTACT ARRANGEMENT

See page 318.

### CAPACITANCE INDICATOR

L - Low Frequency  
M - Mid Frequency  
T - Standard Frequency  
Note: Use of "T" omitted in past nomenclature.  
H - High Frequency  
N - No filters this gang. Standard DPX insert assembly.

### SHELL TYPE

33 - Male (plug)  
34 - Female (receptacle)

### CONTACT TYPE

P-Pin; S-Socket

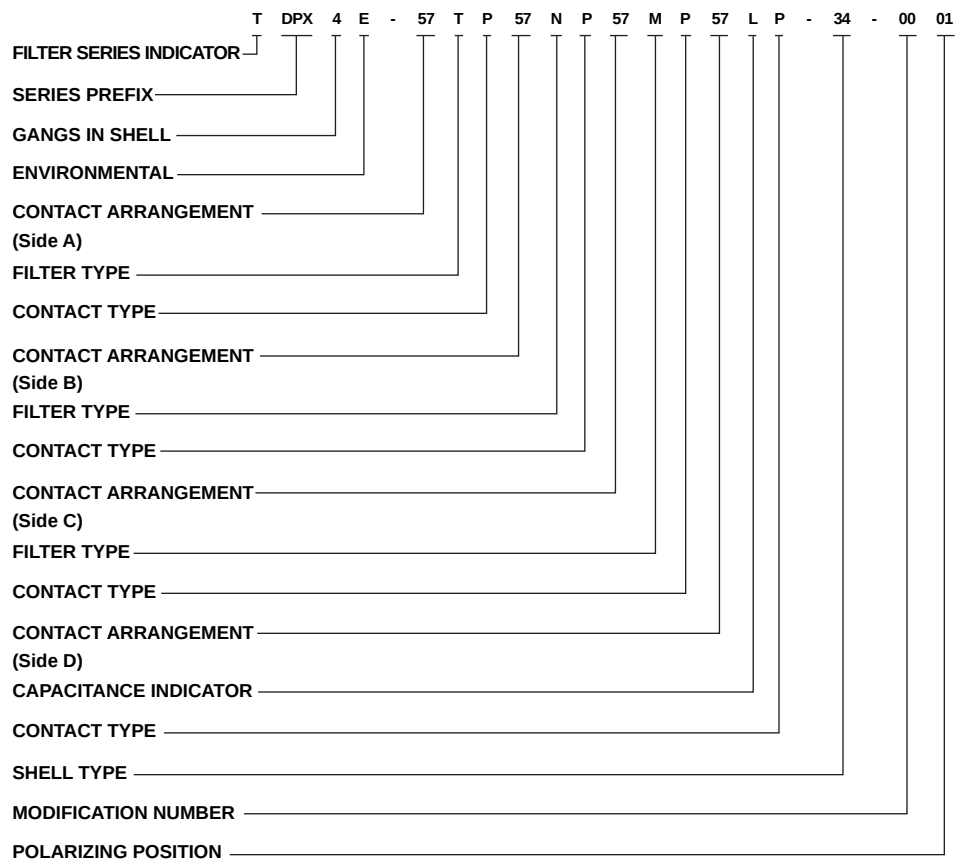
### MODIFICATION

TDPXD  
None  
TDPXB  
03 - Mounting holes countersunk 100° to .230 (5.84) dia.  
23 - With floating eyelets.  
Consult factory.

### POLARIZING POSITION

See pages 67 - 68.

## How to Order - Multiple Gang

**FILTER SERIES INDICATOR**

T - Transverse Monolith

**SERIES PREFIX**

DPX - DPX series with solder termination.

**GANGS IN SHELL**

2, 3, and 4 gang

**ENVIRONMENTAL**

E - For interfacial (pin)

Delete for standard.

**CONTACT ARRANGEMENT**

See page 31 for applicable arrangements. Please specify each arrangement number as indicated in ordering nomenclature for 2, 3, or 4 gang.

**CAPACITANCE INDICATOR (Each gang, as desired)\***

L - Low Frequency

M - Mid Frequency

T - Standard Frequency

Note: Use of "T" omitted in past nomenclature

H - High Frequency

N - No filter this gang. Standard DPX insert assembly.

**CONTACT TYPE**

P for pin; S for socket. Designation follows each arrangement as ordered for 2, 3, or 4 gang versions. (Printed circuit contact/termination is available. Consult factory for specifications.)

**SHELL TYPE**

33B for male (ARINC B)

34B for female (ARINC B)

33 for male

34 for female

Note: ARINC B specified for DPX2 only.

**POLARIZING POSITION (see pages 67-68)**

The last two digits in the four-digit dash number refer to the polarizing post position. When the last two digits are omitted, the polarizing posts will be assembled in position 01, but the position number is not stamped on the connector. This allows the customer to position the posts themselves and then stamp the appropriate number on the shell. If the last two digits are 00, the polarizing posts are deleted.

**MODIFICATION NUMBERS**

- 0001 indicates standard design for all styles.

**TDPX2-33B:**

- 0301 - Mounting holes .120 dia.  
Countersunk 100° to .230 dia.

**TDPX2-34:**

- 0101 - With #4-40 clinch nuts in mounting holes.

**TDPX3-34:**

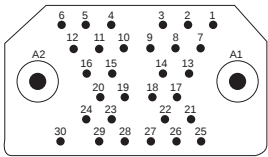
- 0101 - With 6 #4-40 clinch nuts in mounting holes.

**TDPX4-34:**

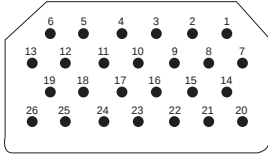
- 0101 - With 10 #4-40 clinch nuts in mounting holes.

Contact Arrangements

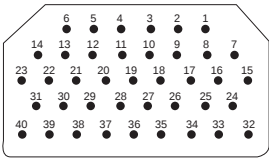
Arrangement No.  
No. of Contacts & Wire Size



32C2  
30 #20, 2 coax

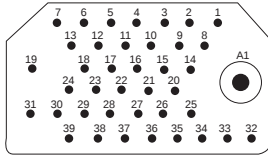


26  
26 #16

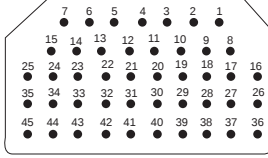


Arrangement No.  
No. of Contacts & Wire Size

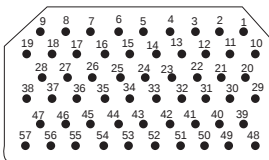
40  
40 #20



40C1  
39 #20, 1 coax

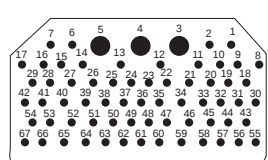


45  
45 #20

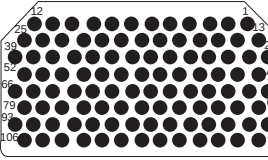


Arrangement No.  
No. of Contacts & Wire Size

57  
57 #20



67  
64 #20, 3 #16



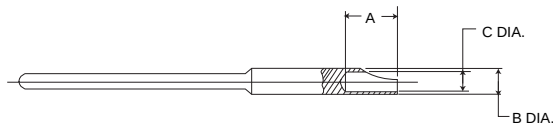
106\*  
106 #22

NOTE: Consult factory for part numbers for special combinations of filter, group contacts and power contacts, and for availability of filter socket contacts, for each contact arrangement.

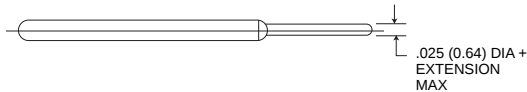
Contacts - Pin and Socket

Standard Contact Terminations

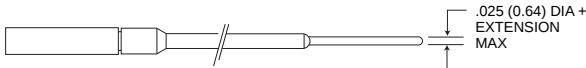
Finish: Gold plate per MIL-G-45204, Type 1, Class 1, over nickel plate per QQ-N-290.



Pin/Solder Pot



Pin/Printed Circuit

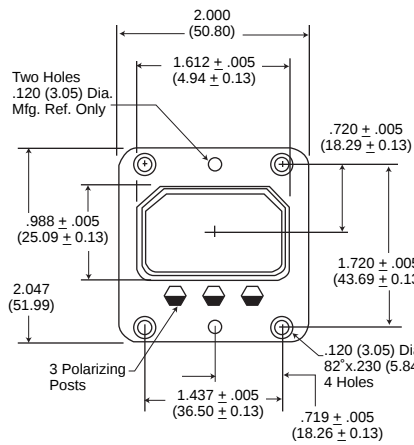


Socket/Printed Circuit

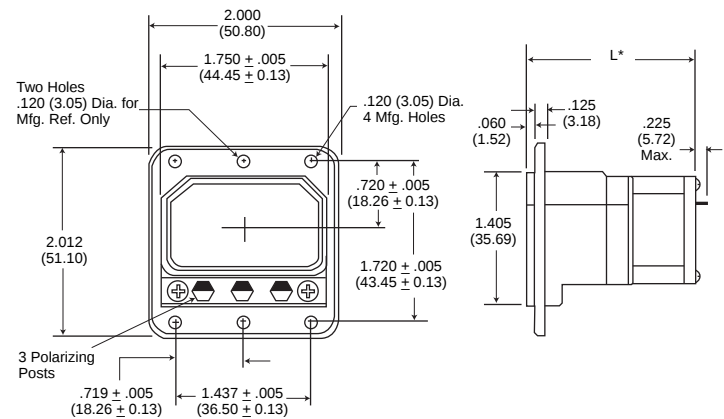
| Contact Size | A           | B           | C           | PC Tail Extension Max.                |
|--------------|-------------|-------------|-------------|---------------------------------------|
| 20           | .125 (3.18) | .065 (1.65) | .048 (1.22) | .200 (5.08), .285 (7.24), .375 (9.52) |
|              | .110 (2.79) | .061 (1.55) | .043 (1.09) |                                       |
| 16           | .170 (4.32) | .103 (2.62) | .078 (1.98) | .200 (5.08), .285 (7.24), .375 (9.52) |
|              | .150 (3.81) | .097 (2.46) | .069 (1.75) |                                       |
| 22           | .115 (2.92) | .005 (1.40) | .040 (1.02) | .200 (5.08), .285 (7.24), .375 (9.52) |
|              | .095 (2.41) | .051 (1.30) | .036 (0.91) |                                       |

## Single Gang

## TDPXB



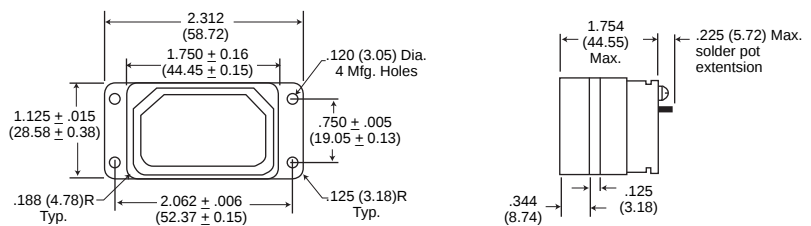
33 ARINC B Shell



34 ARINC B Shell

\* This length varies between the limits of 1.750 (44.45) and 1.437 (36.25) depending on the particular construction as determined by contact arrangement.

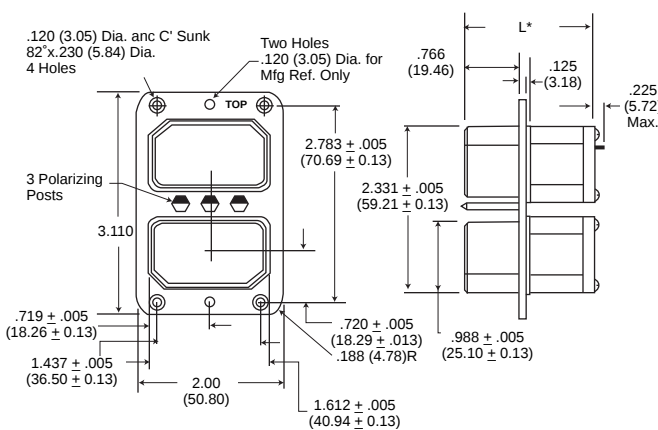
## TDPXD



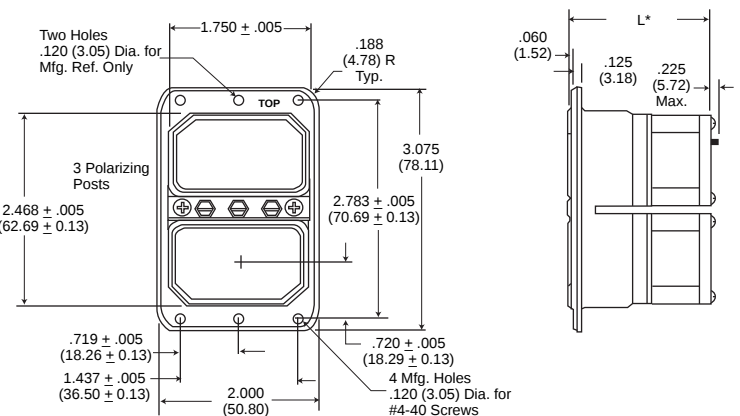
DPXA Shell Style

## Two Gang

## TDPX2



33B ARINC B Shell

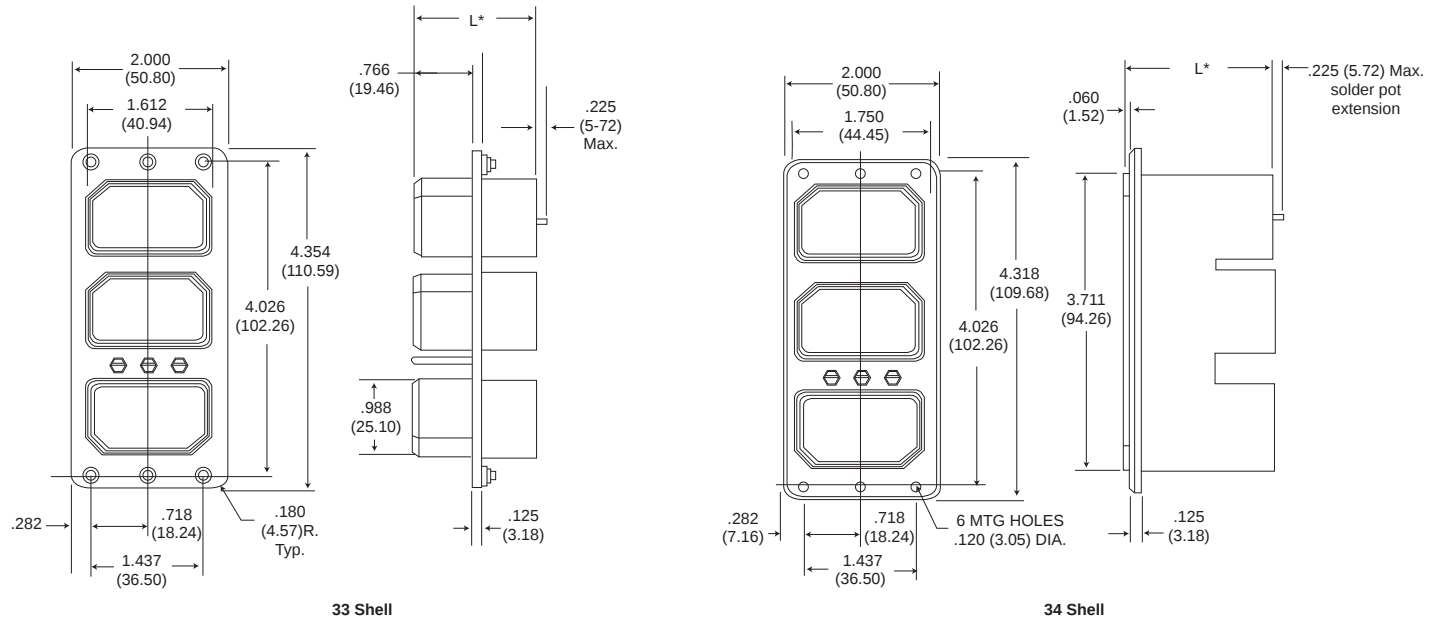


34B ARINC B Shell

\* This length varies between the limits of 1.750 (44.45) and 1.437 (36.25) depending on the particular construction as determined by contact arrangement.

## Three Gang

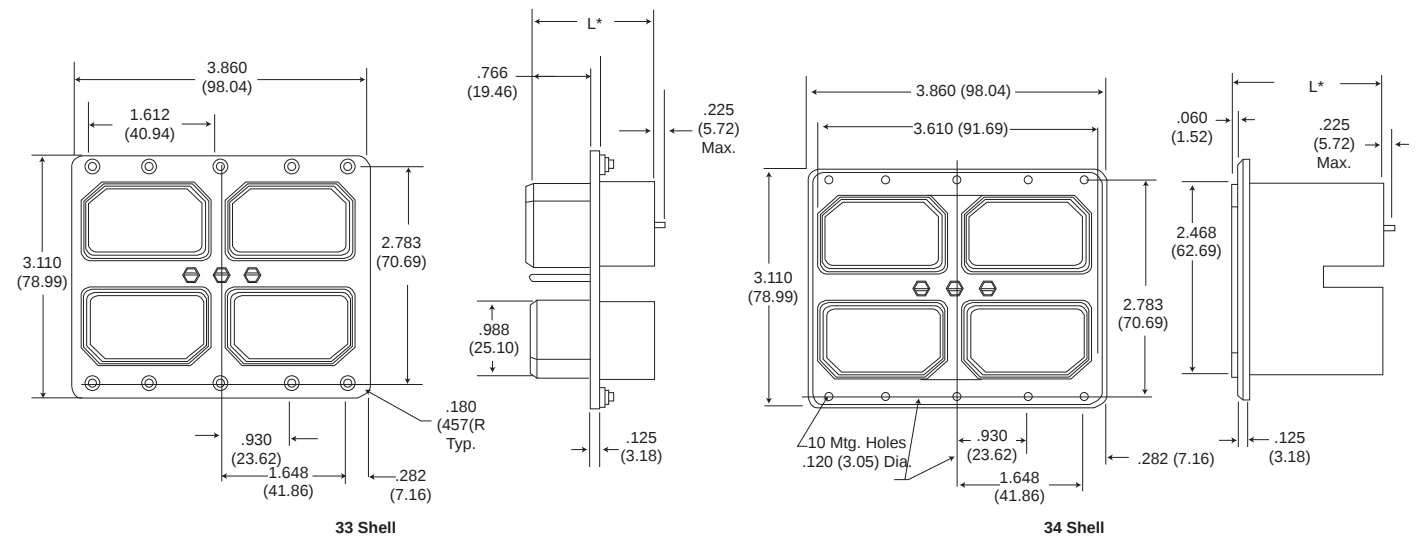
TDPX3



\* This length varies between the limits of 1.750 and 1.437 depending upon particular construction as determined by contact arrangement.

## Four Gang

TDPX4



\* This length varies between the limits of 44.45 and 36.25 depending upon particular construction as determined by contact arrangement.

Panel Cutouts - Pages 69-71.



TBKAD/E connectors represent a major milestone in presenting a new rack and panel connector for support of the air transportation market.

Several important design concerns have been addressed and solved in this series. High mating forces of pluggable modules in a rack have been reduced by approximately two-thirds. Filter adaptations include either single module or tandem (dual) module with crimp piggyback rear release contacts.

In the ARINC 600 connector series, size 22 contacts are the only size that utilize the Pos-Align Connector Construction feature. The hooded socket extends from its receptacle insulator in the filter design.

- Low insertion force contacts.
- Non-environmental versions.
- Polarizing posts that are removable from the mating face.
- Field replaceable inserts for size 22 and power contacts.
- Field replaceable filter modules with size 22 contacts.
- Up to 800 size 22 contacts in one connector.
- Crimp piggy back and pi contacts for filter module.
- Uses standard DPX crimp, insertion/extraction tooling.
- Waveguide connections available.

## How to Order

T BKA D 2 100 M 4 80 81 \*  
 FILTER SERIES INDICATOR \_\_\_\_\_  
 \*\* CONNECTOR SERIES \_\_\_\_\_  
 CLASS \_\_\_\_\_  
 SHELL SIZE \_\_\_\_\_  
 CONNECTOR LAYOUT DESCRIPTION \_\_\_\_\_  
 CAPACITANCE INDICATOR \_\_\_\_\_  
 SHELL STYLE \_\_\_\_\_  
 CONNECTOR MOUNTING MODIFIER \_\_\_\_\_  
 POLARIZING POSITION \_\_\_\_\_  
 SPECIAL MODIFIER \_\_\_\_\_

### FILTER SERIES INDICATOR

T - Transverse Monolith

### CONNECTOR SERIES

BKA (Per ARINC 600)

\*\* Consult factory for availability.

### CLASS

D - Non-environmental  
(rear release, crimp contacts)

### CONNECTOR LAYOUT DESCRIPTION

Three digit number contained within the shell layout indicates total number of contacts available

| Connector Layout | Shell Size | Shell Cavity Identification |     |     |     |     |     |
|------------------|------------|-----------------------------|-----|-----|-----|-----|-----|
|                  |            | A                           | B   | C   | D   | E   | F   |
| -060             | 1          | -                           | 60  | -   |     |     |     |
| -A060            | 1          | 60                          | -   | -   |     |     |     |
| -120             | 1          | 60                          | 60  | -   |     |     |     |
| -100             | 2          | -                           | -   | 100 |     |     |     |
| -300             | 2          | 150                         | 150 | -   |     |     |     |
| -400             | 2          | 150                         | 150 | 100 |     |     |     |
| -600             | 3          | 150                         | 150 | -   | 150 | 150 | -   |
| -800             | 3          | 150                         | 150 | 100 | 150 | 150 | 100 |

### SHELL SIZE

- 1-Max. contact capacity - 125
- 2-Max. contact capacity - 400
- 3-Max. contact capacity - 800

### CAPACITANCE INDICATOR

- L - 32,000-45,000 PF
- M - 8,000-12,000 PF
- T - 3,300-5,000 PF
- H - 850-1,300 PF

### SHELL STYLE

- 3-Plug (rack side) consult factory
- 4-Receptacle (box side)

### CONNECTOR MOUNTING MODIFIER

- 00-Standard design .148 dia. holes
- 01-With #6-32 ESMA (#12 NCFMA2-62) clinch nuts

| Connector Size | # of Clinch Nuts Receptacle |
|----------------|-----------------------------|
| 1              | 4                           |
| 2              | 6                           |
| 3              | 10                          |

02-Size 1 receptacle only - less 3 printed circuit board mounting lugs

03-With #4-40 ESMA (#22 NCFMA2-40) clinch nuts

| Connector Size | # of Clinch Nuts Receptacle |
|----------------|-----------------------------|
| 1              | 4                           |
| 2              | 6                           |
| 3              | 10                          |

08-Size 2 and 3 receptacle only-with #4-40 ESMA (#22 NCFMA2-40) clinch nuts (all mounting holes)

09-Size 2 and 3 receptacle only-with #6-32 ESMA (#12 NCFMA2062) clinch nuts (all mounting holes)

23-with floating eyelets (.048 min. radial float) 4 corner holes per connector

Consult factory if other modifications are required.

### POLARIZING POSITION

01 thru 99 (per ARINC 600)

Blank-Polarizing posts or keys not installed but supplied with connector

### SPECIAL MODIFIER

Consult factory

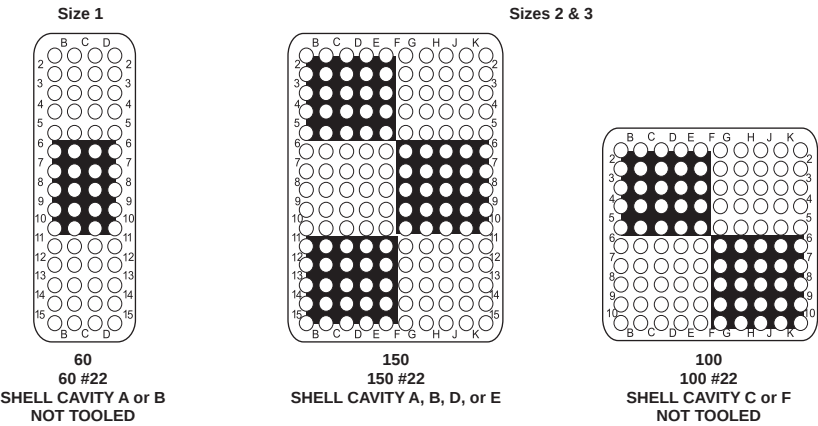
Performance and Material Specifications

| MATERIALS AND FINISHES |             | BKAD                        | SPECIFICATIONS |
|------------------------|-------------|-----------------------------|----------------|
| Shell                  | Material    | Aluminum Alloy              | QQ-A-591/A380  |
|                        | Finish      | Clear chromate over cadmium | QQ-P-416       |
| Insulator              | Material    | Thermoplastic               | N/A            |
| Contacts               | Material    | Copper alloy                | AA-C-533       |
|                        | Finish      | Gold over nickel            |                |
|                        | Termination | Crimp                       | N/A            |
| Ground Spring          | Material    | Coper alloy                 |                |
|                        | Finish      | Sliver                      |                |

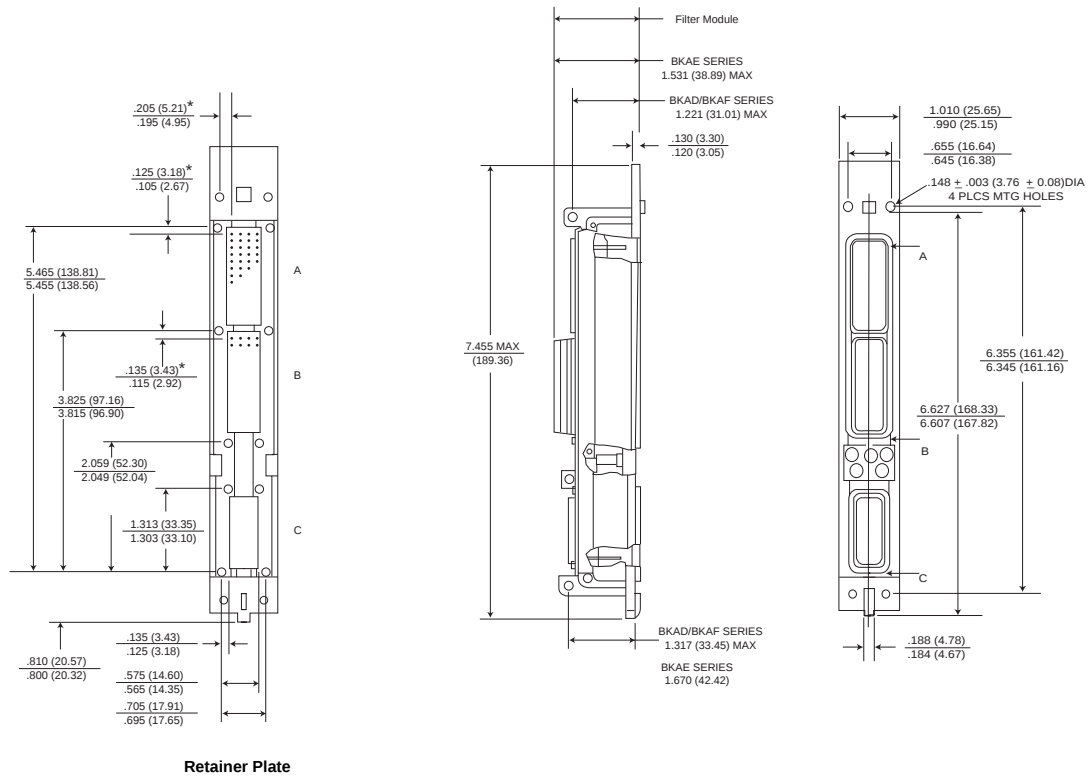
ELECTRICAL DATA (Size #16, Size #20 and Size #22)

|                                                                                    |                                              |           |           |            |
|------------------------------------------------------------------------------------|----------------------------------------------|-----------|-----------|------------|
| Filter Description                                                                 | Low Freq.                                    | Mid Freq. | Std Freq. | High Freq. |
| Catalog Indicator                                                                  | L                                            | M         | T         | H          |
| Voltage Rating                                                                     | 200 VDC-120 VAC rms 400 Hz                   |           |           |            |
| Current Rating (amp DC)                                                            | 15 amp size 16, 7.5 size 20, 5.0 amp size 22 |           |           |            |
| Insulation Resistance, 2 min. electrification time max. at 25°C                    | 5,000 megohms min. @ 100 VDC                 |           |           |            |
| DWV, sea level, with 500 microamps max. charge/discharge                           | 300V DC size 22<br>500V DC size 16 & 20      | 500VDC    | 500VDC    | 500VDC     |
| Capacitance at 1 KHz 0.1 V rms Picofarads                                          | 32000                                        | 8000      | 3300      | 850        |
|                                                                                    | 45000                                        | 12000     | 5000      | 1300       |
| Attenuation per MIL-STD-220 @ 25°C with no applied voltage or current              | Freq. MHz                                    |           |           |            |
|                                                                                    | 0.1                                          | 2 min.    | -         | -          |
|                                                                                    | 1.0                                          | 10 min.   | 2 min.    | -          |
|                                                                                    | 2                                            | 16 min.   | 7 min.    | 2 min.     |
|                                                                                    | 10                                           | 40 min.   | 18 min.   | 8 min.     |
|                                                                                    | 100                                          | 60 min.   | 55 min.   | 45 min.    |
|                                                                                    | 500 to 1000                                  | 65 min.   | 60 min.   | 55 min.    |
| Filter Type/Construction                                                           | Pi                                           | Pi        | Pi        | Pi         |
| Consult factory for higher or mixed attenuation values and higher voltage ratings. |                                              |           |           |            |

Contact Arrangements (Receptacle-Engaging Face Shown)

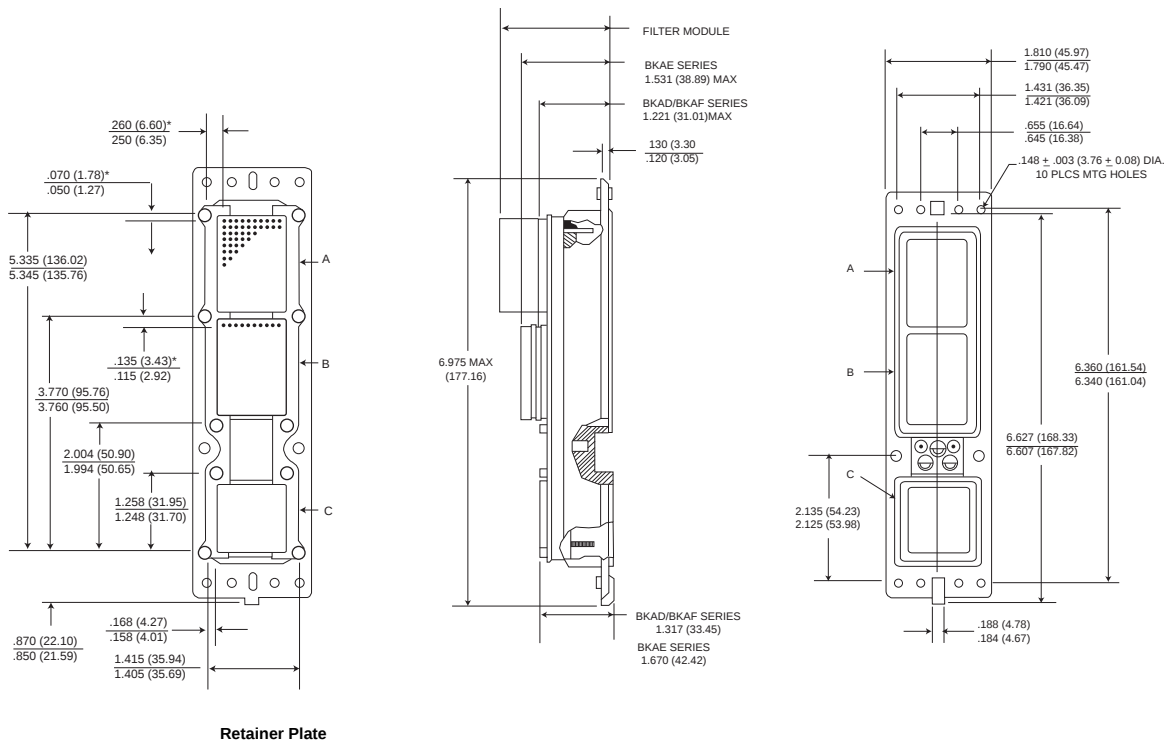


## Size 1 Receptacle



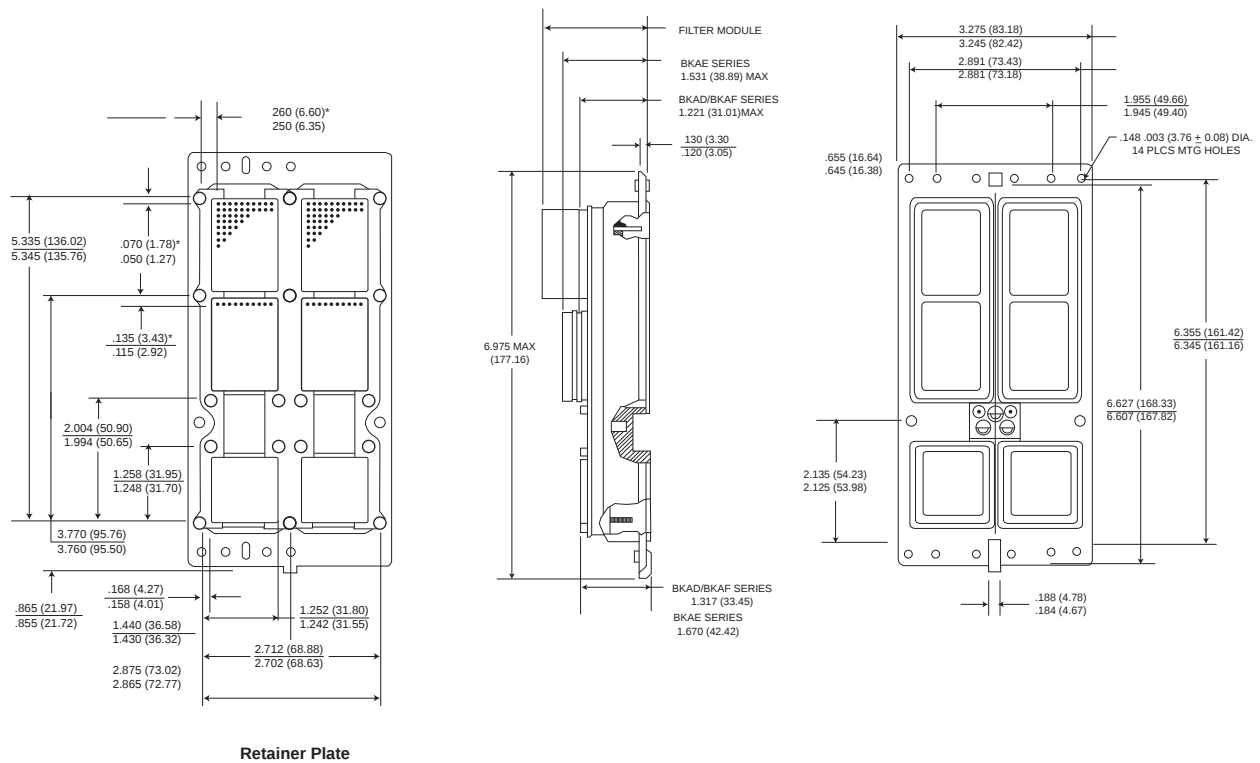
\* This dimension indicates distance from centerline of retaining screw to the centerline of first contact cavity.

## Size 2 Receptacle



\* This dimension indicates distance from centerline of retaining screw to the centerline of first contact cavity.

## Size 3 Receptacle



\* This dimension indicates distance from centerline of retaining screw to the centerline of first contact cavity.

## Panel Cutouts

