

3 Way-0° 50Ω 1 to 200 MHz

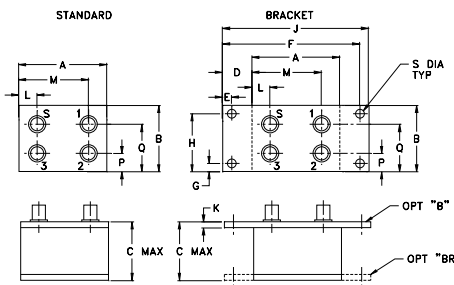
## Maximum Ratings

|                             |                |
|-----------------------------|----------------|
| Operating Temperature       | -55°C to 100°C |
| Storage Temperature         | -55°C to 100°C |
| Power Input (as a splitter) | 1W max.        |
| Internal Dissipation        | 0.375W max.    |

## Coaxial Connections

|          |   |
|----------|---|
| SUM PORT | S |
| PORT 1   | 1 |
| PORT 2   | 2 |
| PORT 3   | 3 |

## Outline Drawing



## Outline Dimensions (inch/mm)

|       |       |       |       |      |       |      |       |
|-------|-------|-------|-------|------|-------|------|-------|
| A     | B     | C     | D     | E    | F     | G    | H     |
| 1.50  | 1.13  | 1.00  | .50   | .155 | 2.345 | .138 | .987  |
| 38.10 | 28.70 | 25.40 | 12.70 | 3.94 | 59.56 | 3.51 | 25.07 |

|       |      |       |       |    |      |       |      |       |
|-------|------|-------|-------|----|------|-------|------|-------|
| J     | K    | L     | M     | N  | P    | Q     | S    | wt    |
| 2.50  | .10  | .50   | 1.00  | -- | .31  | .81   | .150 | grams |
| 63.50 | 2.54 | 12.70 | 25.40 | -- | 7.87 | 20.57 | 3.81 | 60.0  |

## Features

- rugged shielded case

## Applications

- VHF
- instrumentation
- radio communication system



Generic photo used for illustration purposes only

CASE STYLE: P26

Connectors Model

SMA ZMSC-3-1+

BRACKET (OPTION "B")

BRACKET (OPTION "BR")

+RoHS Compliant

The + suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

## Electrical Specifications

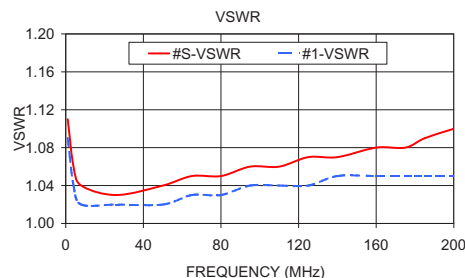
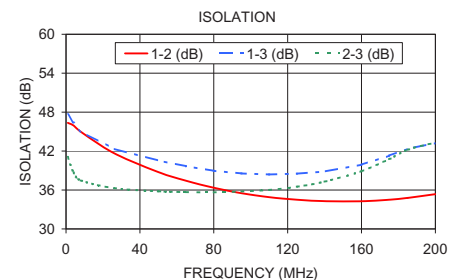
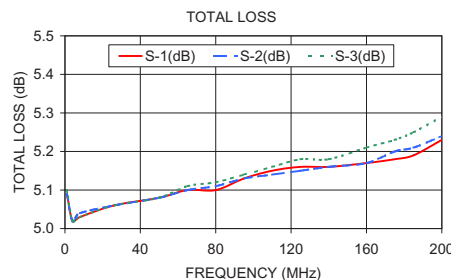
| FREQ. RANGE (MHz) | ISOLATION (dB) |     |      |     |      |     | INSERTION LOSS (dB) ABOVE 4.8 dB |      |      |      |      |      | PHASE UNBALANCE (Degrees) |      |      | AMPLITUDE UNBALANCE (dB) |      |      |
|-------------------|----------------|-----|------|-----|------|-----|----------------------------------|------|------|------|------|------|---------------------------|------|------|--------------------------|------|------|
|                   | L              |     | M    |     | U    |     | L                                |      | M    |      | U    |      | L                         |      | M    |                          | U    |      |
|                   | Typ.           | Min | Typ. | Min | Typ. | Min | Typ.                             | Max. | Typ. | Max. | Typ. | Max. | Max.                      | Max. | Max. | Max.                     | Max. | Max. |
| $f_L$ - $f_U$     | 45             | 35  | 40   | 25  | 40   | 25  | 0.3                              | 0.5  | 0.4  | 0.7  | 0.6  | 1.0  | 1                         | 2    | 4    | 0.15                     | 0.2  | 0.3  |

L = low range [ $f_L$  to  $10 f_L$ ] M = mid range [ $10 f_L$  to  $f_U/2$ ] U = upper range [ $f_U/2$  to  $f_U$ ]

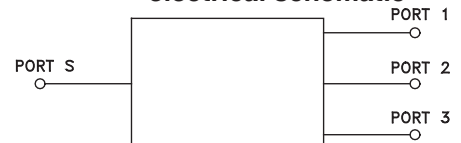
## Typical Performance Data

| Freq. (MHz) | Total Loss <sup>1</sup> (dB) |      |      | Amp. Unbal. (dB) | Isolation (dB) |       |       | Phase Unbal. (deg.) | VSWR S | VSWR 1 | VSWR 2 | VSWR 3 |
|-------------|------------------------------|------|------|------------------|----------------|-------|-------|---------------------|--------|--------|--------|--------|
|             | S-1                          | S-2  | S-3  |                  | 1-2            | 1-3   | 2-3   |                     |        |        |        |        |
| 1.00        | 5.09                         | 5.09 | 5.10 | 0.01             | 46.35          | 47.66 | 41.10 | 0.06                | 1.11   | 1.09   | 1.09   | 1.09   |
| 4.00        | 5.02                         | 5.02 | 5.02 | 0.01             | 45.95          | 46.40 | 38.74 | 0.07                | 1.06   | 1.04   | 1.03   | 1.04   |
| 8.00        | 5.03                         | 5.04 | 5.03 | 0.01             | 44.98          | 45.00 | 37.47 | 0.09                | 1.04   | 1.02   | 1.02   | 1.02   |
| 26.00       | 5.06                         | 5.06 | 5.06 | 0.00             | 41.67          | 42.34 | 36.29 | 0.19                | 1.03   | 1.02   | 1.02   | 1.02   |
| 50.00       | 5.08                         | 5.08 | 5.08 | 0.00             | 38.76          | 40.53 | 35.80 | 0.43                | 1.04   | 1.02   | 1.02   | 1.02   |
| 65.00       | 5.10                         | 5.10 | 5.11 | 0.01             | 37.43          | 39.67 | 35.68 | 0.53                | 1.05   | 1.03   | 1.02   | 1.02   |
| 80.00       | 5.10                         | 5.11 | 5.12 | 0.02             | 36.35          | 38.96 | 35.64 | 0.64                | 1.05   | 1.03   | 1.02   | 1.02   |
| 95.00       | 5.13                         | 5.13 | 5.14 | 0.01             | 35.50          | 38.55 | 35.78 | 0.79                | 1.06   | 1.04   | 1.02   | 1.02   |
| 110.00      | 5.15                         | 5.14 | 5.16 | 0.02             | 34.89          | 38.39 | 36.01 | 0.90                | 1.06   | 1.04   | 1.02   | 1.02   |
| 125.00      | 5.16                         | 5.15 | 5.18 | 0.02             | 34.50          | 38.52 | 36.51 | 0.95                | 1.07   | 1.04   | 1.02   | 1.02   |
| 140.00      | 5.16                         | 5.16 | 5.18 | 0.03             | 34.28          | 38.84 | 37.29 | 1.08                | 1.07   | 1.05   | 1.02   | 1.02   |
| 160.00      | 5.17                         | 5.17 | 5.21 | 0.04             | 34.27          | 39.90 | 38.89 | 1.17                | 1.08   | 1.05   | 1.02   | 1.02   |
| 175.00      | 5.18                         | 5.20 | 5.23 | 0.05             | 34.50          | 41.29 | 40.75 | 1.29                | 1.08   | 1.05   | 1.02   | 1.02   |
| 185.00      | 5.19                         | 5.21 | 5.25 | 0.06             | 34.78          | 42.35 | 42.20 | 1.31                | 1.09   | 1.05   | 1.02   | 1.02   |
| 200.00      | 5.23                         | 5.24 | 5.29 | 0.06             | 35.36          | 43.22 | 43.31 | 1.48                | 1.10   | 1.05   | 1.01   | 1.02   |

1. Total Loss = Insertion Loss + 4.8dB splitter loss.



## electrical schematic



## Notes

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# 3 Way-0° Power Splitter/Combiner

ZMSC-3-1+

## Typical Performance Data

| FREQ.<br>(MHz) | TOTAL LOSS <sup>1</sup> |      |      | AMP.<br>UNBAL.<br>(dB) | ISOLATION |       |       | PHASE<br>UNBAL.<br>(deg.) | FREQ.<br>(MHz) | VSWR |      |      |      |
|----------------|-------------------------|------|------|------------------------|-----------|-------|-------|---------------------------|----------------|------|------|------|------|
|                | S-1                     | S-2  | S-3  |                        | 1-2       | 1-3   | 2-3   |                           |                | S    | 1    | 2    | 3    |
| 1              | 5.09                    | 5.09 | 5.10 | 0.01                   | 46.35     | 47.66 | 41.10 | 0.06                      | 1              | 1.11 | 1.09 | 1.09 | 1.09 |
| 2              | 5.05                    | 5.06 | 5.06 | 0.01                   | 46.41     | 47.66 | 40.48 | 0.06                      | 2              | 1.08 | 1.06 | 1.05 | 1.06 |
| 4              | 5.02                    | 5.02 | 5.02 | 0.01                   | 45.95     | 46.40 | 38.74 | 0.07                      | 4              | 1.06 | 1.04 | 1.03 | 1.04 |
| 6              | 5.02                    | 5.02 | 5.03 | 0.01                   | 45.44     | 45.55 | 37.92 | 0.02                      | 6              | 1.04 | 1.03 | 1.03 | 1.03 |
| 8              | 5.03                    | 5.04 | 5.03 | 0.01                   | 44.98     | 45.00 | 37.47 | 0.09                      | 8              | 1.04 | 1.02 | 1.02 | 1.02 |
| 10             | 5.03                    | 5.03 | 5.03 | 0.00                   | 44.52     | 44.47 | 37.20 | 0.05                      | 10             | 1.03 | 1.02 | 1.02 | 1.02 |
| 18             | 5.05                    | 5.05 | 5.05 | 0.00                   | 42.88     | 43.17 | 36.57 | 0.13                      | 18             | 1.03 | 1.02 | 1.02 | 1.02 |
| 26             | 5.06                    | 5.06 | 5.06 | 0.00                   | 41.67     | 42.34 | 36.29 | 0.19                      | 26             | 1.03 | 1.02 | 1.02 | 1.02 |
| 34             | 5.07                    | 5.07 | 5.08 | 0.01                   | 40.58     | 41.69 | 36.09 | 0.32                      | 34             | 1.03 | 1.02 | 1.02 | 1.02 |
| 42             | 5.08                    | 5.08 | 5.08 | 0.00                   | 39.64     | 41.08 | 35.90 | 0.30                      | 42             | 1.03 | 1.02 | 1.02 | 1.02 |
| 50             | 5.08                    | 5.08 | 5.08 | 0.00                   | 38.76     | 40.53 | 35.80 | 0.43                      | 50             | 1.04 | 1.02 | 1.02 | 1.02 |
| 55             | 5.09                    | 5.09 | 5.09 | 0.00                   | 38.29     | 40.17 | 35.77 | 0.45                      | 55             | 1.04 | 1.03 | 1.02 | 1.02 |
| 60             | 5.10                    | 5.10 | 5.10 | 0.01                   | 37.83     | 39.91 | 35.72 | 0.48                      | 60             | 1.04 | 1.03 | 1.02 | 1.02 |
| 65             | 5.10                    | 5.10 | 5.11 | 0.01                   | 37.43     | 39.67 | 35.68 | 0.53                      | 65             | 1.05 | 1.03 | 1.02 | 1.02 |
| 70             | 5.11                    | 5.11 | 5.11 | 0.01                   | 37.04     | 39.45 | 35.64 | 0.57                      | 70             | 1.05 | 1.03 | 1.02 | 1.02 |
| 75             | 5.11                    | 5.11 | 5.12 | 0.01                   | 36.70     | 39.20 | 35.70 | 0.59                      | 75             | 1.05 | 1.03 | 1.02 | 1.02 |
| 80             | 5.10                    | 5.11 | 5.12 | 0.02                   | 36.35     | 38.96 | 35.64 | 0.64                      | 80             | 1.05 | 1.03 | 1.02 | 1.02 |
| 85             | 5.10                    | 5.12 | 5.12 | 0.01                   | 36.03     | 38.81 | 35.67 | 0.68                      | 85             | 1.05 | 1.03 | 1.02 | 1.02 |
| 90             | 5.12                    | 5.12 | 5.13 | 0.01                   | 35.80     | 38.70 | 35.71 | 0.78                      | 90             | 1.06 | 1.04 | 1.02 | 1.02 |
| 95             | 5.13                    | 5.13 | 5.14 | 0.01                   | 35.50     | 38.55 | 35.78 | 0.79                      | 95             | 1.06 | 1.04 | 1.02 | 1.02 |
| 100            | 5.14                    | 5.14 | 5.15 | 0.01                   | 35.27     | 38.46 | 35.88 | 0.79                      | 100            | 1.06 | 1.04 | 1.02 | 1.02 |
| 105            | 5.14                    | 5.14 | 5.16 | 0.02                   | 35.11     | 38.43 | 35.93 | 0.85                      | 105            | 1.06 | 1.04 | 1.02 | 1.02 |
| 110            | 5.15                    | 5.14 | 5.16 | 0.02                   | 34.89     | 38.39 | 36.01 | 0.90                      | 110            | 1.06 | 1.04 | 1.02 | 1.02 |
| 115            | 5.15                    | 5.15 | 5.17 | 0.02                   | 34.74     | 38.41 | 36.19 | 0.91                      | 115            | 1.07 | 1.04 | 1.02 | 1.02 |
| 120            | 5.14                    | 5.15 | 5.16 | 0.02                   | 34.60     | 38.46 | 36.35 | 0.90                      | 120            | 1.07 | 1.04 | 1.02 | 1.02 |
| 125            | 5.16                    | 5.15 | 5.18 | 0.02                   | 34.50     | 38.52 | 36.51 | 0.95                      | 125            | 1.07 | 1.04 | 1.02 | 1.02 |
| 130            | 5.15                    | 5.15 | 5.18 | 0.02                   | 34.39     | 38.59 | 36.72 | 0.97                      | 130            | 1.07 | 1.05 | 1.02 | 1.02 |
| 135            | 5.16                    | 5.17 | 5.19 | 0.03                   | 34.32     | 38.72 | 36.98 | 1.04                      | 135            | 1.07 | 1.05 | 1.02 | 1.02 |
| 140            | 5.16                    | 5.16 | 5.18 | 0.03                   | 34.28     | 38.84 | 37.29 | 1.08                      | 140            | 1.07 | 1.05 | 1.02 | 1.02 |
| 145            | 5.15                    | 5.16 | 5.19 | 0.03                   | 34.23     | 39.03 | 37.62 | 1.08                      | 145            | 1.07 | 1.05 | 1.02 | 1.02 |
| 150            | 5.16                    | 5.17 | 5.20 | 0.03                   | 34.19     | 39.28 | 38.01 | 1.09                      | 150            | 1.07 | 1.05 | 1.02 | 1.02 |
| 155            | 5.16                    | 5.17 | 5.20 | 0.04                   | 34.24     | 39.59 | 38.43 | 1.19                      | 155            | 1.08 | 1.05 | 1.02 | 1.02 |
| 160            | 5.17                    | 5.17 | 5.21 | 0.04                   | 34.27     | 39.90 | 38.89 | 1.17                      | 160            | 1.08 | 1.05 | 1.02 | 1.02 |
| 165            | 5.18                    | 5.19 | 5.23 | 0.05                   | 34.33     | 40.34 | 39.46 | 1.23                      | 165            | 1.08 | 1.05 | 1.02 | 1.02 |
| 170            | 5.18                    | 5.19 | 5.24 | 0.06                   | 34.38     | 40.73 | 40.03 | 1.25                      | 170            | 1.08 | 1.05 | 1.02 | 1.02 |
| 175            | 5.18                    | 5.20 | 5.23 | 0.05                   | 34.50     | 41.29 | 40.75 | 1.29                      | 175            | 1.08 | 1.05 | 1.02 | 1.02 |
| 180            | 5.18                    | 5.19 | 5.24 | 0.06                   | 34.65     | 41.79 | 41.51 | 1.34                      | 180            | 1.08 | 1.05 | 1.02 | 1.02 |
| 185            | 5.19                    | 5.21 | 5.25 | 0.06                   | 34.78     | 42.35 | 42.20 | 1.31                      | 185            | 1.09 | 1.05 | 1.02 | 1.02 |
| 190            | 5.20                    | 5.22 | 5.27 | 0.06                   | 34.96     | 42.75 | 42.84 | 1.42                      | 190            | 1.09 | 1.05 | 1.02 | 1.02 |
| 195            | 5.22                    | 5.23 | 5.28 | 0.06                   | 35.14     | 43.09 | 43.35 | 1.38                      | 195            | 1.09 | 1.05 | 1.01 | 1.02 |
| 200            | 5.23                    | 5.24 | 5.29 | 0.06                   | 35.36     | 43.22 | 43.31 | 1.48                      | 200            | 1.10 | 1.05 | 1.01 | 1.02 |

<sup>1</sup> Total Loss = Insertion Loss+ 4.8dB Splitter Loss

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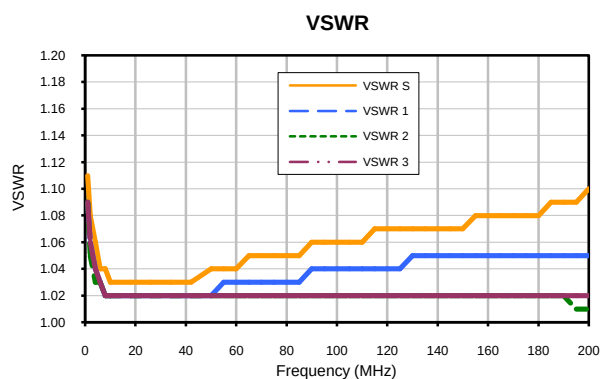
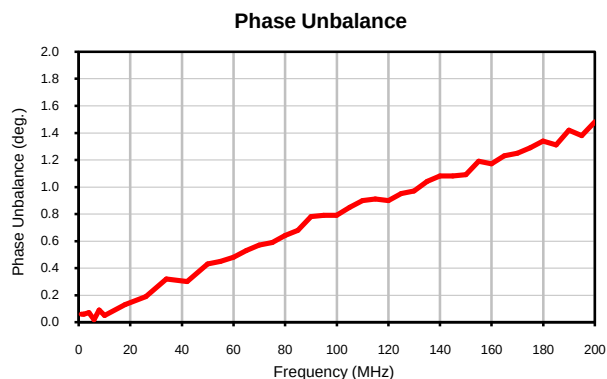
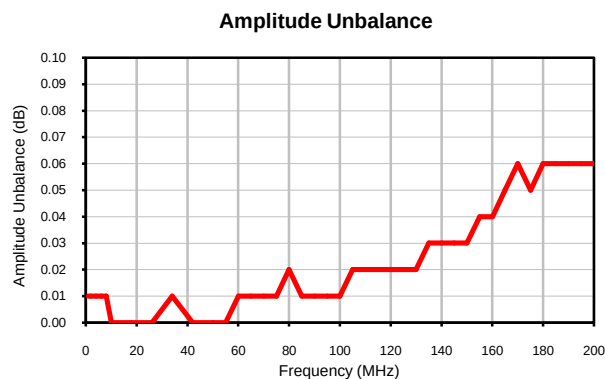
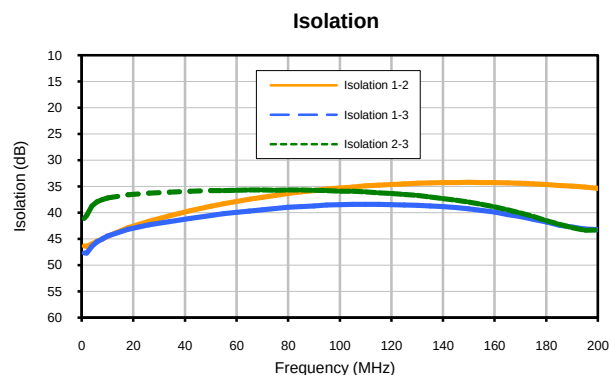
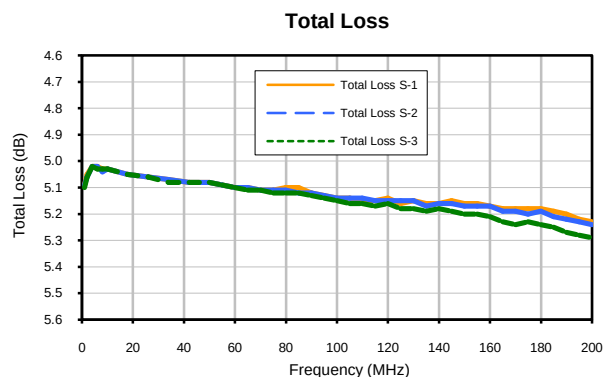
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REV. OR  
 ZMSC-3-1+  
 150810  
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# 3 Way-0° Power Splitter/Combiner

ZMSC-3-1+

## Typical Performance Curves



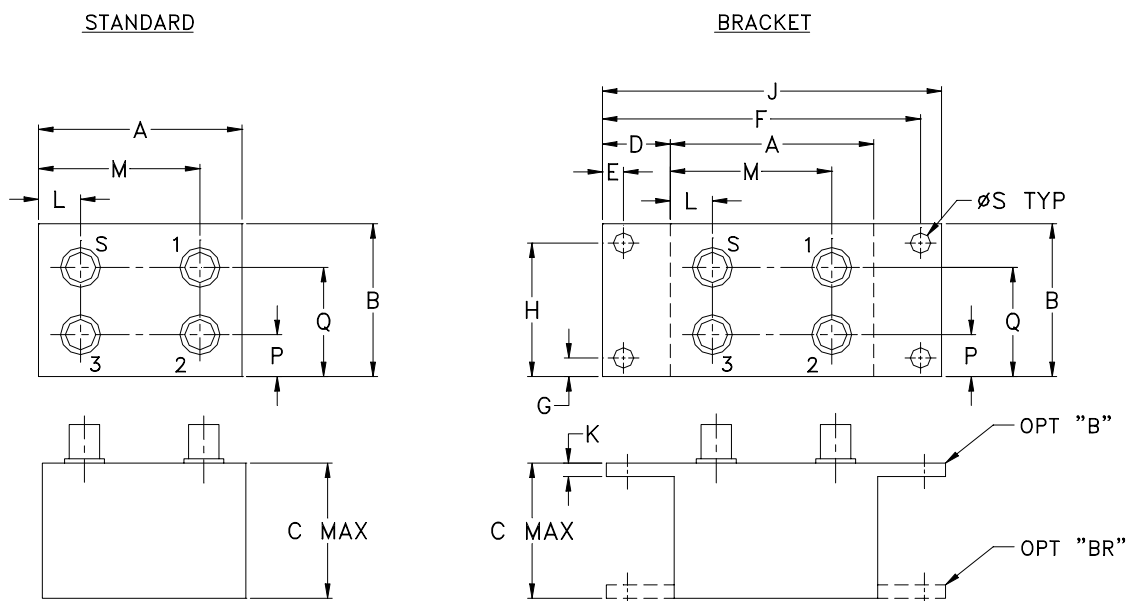
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P25  
P26

## Outline Dimensions



| CASE# | A               | B               | C               | D              | E              | F                | G              | H                | J               | K             | L              | M               | N  |
|-------|-----------------|-----------------|-----------------|----------------|----------------|------------------|----------------|------------------|-----------------|---------------|----------------|-----------------|----|
| P25   | 2.25<br>(57.15) | 1.38<br>(35.05) | 1.24<br>(31.50) | .50<br>(12.70) | .150<br>(3.81) | 3.100<br>(78.74) | .138<br>(3.51) | 1.238<br>(31.45) | 3.25<br>(82.55) | .10<br>(2.54) | .78<br>(19.81) | 1.47<br>(37.34) | -- |
| P26   | 1.50<br>(38.10) | 1.13<br>(28.70) | 1.00<br>(25.40) |                | .155<br>(3.94) | 2.345<br>(59.56) |                | .987<br>(25.07)  | 2.50<br>(63.50) |               | .50<br>(12.70) | 1.00<br>(25.40) | -- |

| CASE# | P             | Q               | R  | S              | WT. GRAMS |
|-------|---------------|-----------------|----|----------------|-----------|
| P25   | .38<br>(9.65) | 1.00<br>(25.40) | -- | .150<br>(3.81) | 110.0     |
| P26   | .31<br>(7.87) | .81<br>(20.57)  | -- |                | 60.0      |

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

### Notes:

- Case material: Aluminum alloy.
- Case finish:
  - For RoHS Case Styles: Clear chemical conversion coating, non-chrome or trivalent chrome based.
  - For Non-RoHS Case Styles: Yellow hexavalent chrome based conversion coating.
- Mounting bracket available on request. For bracket mounted on connector end add suffix B to part number and add \$5.00 to unit cost. For bracket mounted on the rear, add suffix BR to part number and add \$1.50 to unit cost.



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