



**PRINCIPAL SPECIFICATIONS**

| <b>Model Number</b> | <b>Frequency Range, GHz</b> | <b>Coupling<sup>α</sup>, dB, Nom.</b> | <b>Frequency Sensitivity, dB, Max.</b> | <b>Directivity, dB, Min.</b> | <b>*Insertion Loss, dB, Max.</b> | <b>VSWR, Max.,</b> |                     | <b>Outline Ref. Dim.</b> |
|---------------------|-----------------------------|---------------------------------------|--|------------------------------|----------------------------------|--------------------|---------------------|--------------------------|
|                     |                             |                                       |  |                              |                                  | <b>Main Line</b>   | <b>Coupled Line</b> |                          |
| CSM-6M-.75G         | 0.5 - 1.0                   | 6 ±1.0                                | ±0.60                                  | 25                           | 0.20                             | 1.15:1             | 1.15:1              | 1                        |
| CSM-10M-.75G        |                             | 10 ±1.25                              | ±0.75                                  | 25                           | 0.20                             | 1.10:1             | 1.10:1              | 1                        |
| CSM-20M-.75G        |                             | 20 ±1.25                              | ±0.75                                  | 25                           | 0.15                             | 1.10:1             | 1.10:1              | 1                        |
| CSM-30M-.75G        |                             | 30 ±1.25                              | ±0.75                                  | 25                           | 0.15                             | 1.10:1             | 1.10:1              | 2                        |
| CSM-6M-1.5G         | 1.0 - 2.0                   | 6 ±1.0                                | ±0.60                                  | 25                           | 0.20                             | 1.15:1             | 1.15:1              | 3                        |
| CSM-10M-1.5G        |                             | 10 ±1.25                              | ±0.75                                  | 25                           | 0.20                             | 1.10:1             | 1.10:1              | 3                        |
| CSM-20M-1.5G        |                             | 20 ±1.25                              | ±0.75                                  | 25                           | 0.15                             | 1.10:1             | 1.10:1              | 3                        |
| CSM-30M-1.5G        |                             | 30 ±1.25                              | ±0.75                                  | 25                           | 0.15                             | 1.10:1             | 1.10:1              | 4                        |
| CSM-6M-3G           | 2.0 - 4.0                   | 6 ±1.0                                | ±0.60                                  | 22                           | 0.20                             | 1.15:1             | 1.15:1              | 5                        |
| CSM-10M-3G          |                             | 10 ±1.25                              | ±0.75                                  | 22                           | 0.20                             | 1.15:1             | 1.15:1              | 5                        |
| CSM-20M-3G          |                             | 20 ±1.25                              | ±0.75                                  | 22                           | 0.15                             | 1.15:1             | 1.15:1              | 5                        |
| CSM-30M-3G          |                             | 30 ±1.25                              | ±0.75                                  | 22                           | 0.15                             | 1.15:1             | 1.15:1              | 6                        |
| CSM-6M-4G           | 2.6 - 5.2                   | 6 ±1.0                                | ±0.60                                  | 20                           | 0.20                             | 1.25:1             | 1.25:1              | 7                        |
| CSM-10M-4G          |                             | 10 ±1.25                              | ±0.75                                  | 20                           | 0.20                             | 1.25:1             | 1.25:1              | 7                        |
| CSM-20M-4G          |                             | 20 ±1.25                              | ±0.75                                  | 20                           | 0.20                             | 1.25:1             | 1.25:1              | 7                        |
| CSM-30M-4G          |                             | 30 ±1.25                              | ±0.75                                  | 20                           | 0.20                             | 1.25:1             | 1.25:1              | 8                        |
| CSM-6M-6G           | 4.0 - 8.0                   | 6 ±1.0                                | ±0.60                                  | 20                           | 0.25                             | 1.25:1             | 1.25:1              | 7                        |
| CSM-10M-6G          |                             | 10 ±1.25                              | ±0.75                                  | 20                           | 0.25                             | 1.25:1             | 1.25:1              | 7                        |
| CSM-20M-6G          |                             | 20 ±1.25                              | ±0.75                                  | 20                           | 0.25                             | 1.25:1             | 1.25:1              | 7                        |
| CSM-30M-6G          |                             | 30 ±1.25                              | ±0.75                                  | 20                           | 0.25                             | 1.25:1             | 1.25:1              | 8                        |
| CSM-6M-10G          | 7 - 12.4                    | 6 ±1.0                                | ±0.50                                  | 17                           | 0.30                             | 1.30:1             | 1.30:1              | 7                        |
| CSM-10M-10G         |                             | 10 ±1.0                               | ±0.50                                  | 17                           | 0.30                             | 1.30:1             | 1.30:1              | 7                        |
| CSM-20M-10G         |                             | 20 ±1.0                               | ±0.50                                  | 17                           | 0.30                             | 1.30:1             | 1.30:1              | 7                        |
| CSM-30M-10G         |                             | 30 ±1.0                               | ±0.50                                  | 17                           | 0.30                             | 1.30:1             | 1.30:1              | 8                        |
| CSM-6M-12G          | 7.5 - 16                    | 6 ±1.0                                | ±0.60                                  | 12                           | 0.60                             | 1.35:1             | 1.40:1              | 7                        |
| CSM-10M-12G         |                             | 10 ±1.25                              | ±0.75                                  | 12                           | 0.60                             | 1.35:1             | 1.40:1              | 7                        |
| CSM-20M-12G         |                             | 20 ±1.25                              | ±0.75                                  | 15                           | 0.50                             | 1.35:1             | 1.40:1              | 9                        |
| CSM-30M-12G         |                             | 30 ±1.25                              | ±0.75                                  | 15                           | 0.50                             | 1.35:1             | 1.40:1              | 9                        |
| CSM-6M-15G          | 12.4 - 18                   | 6 ±1.0                                | ±0.50                                  | 15                           | 0.60                             | 1.30:1             | 1.40:1              | 7                        |
| CSM-10M-15G         |                             | 10 ±1.0                               | ±0.50                                  | 15                           | 0.60                             | 1.30:1             | 1.40:1              | 7                        |
| CSM-20M-15G         |                             | 20 ±1.0                               | ±0.50                                  | 15                           | 0.50                             | 1.30:1             | 1.40:1              | 9                        |
| CSM-30M-15G         |                             | 30 ±1.0                               | ±0.50                                  | 15                           | 0.50                             | 1.30:1             | 1.40:1              | 9                        |

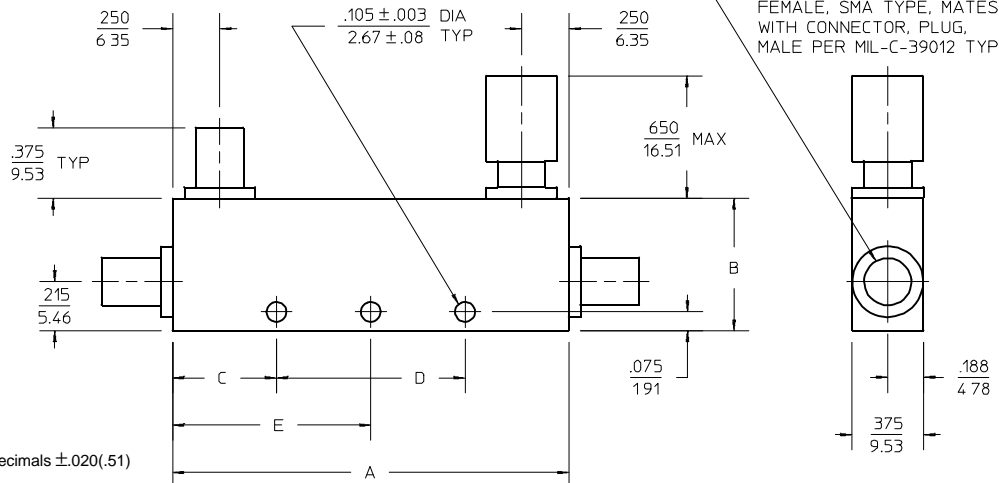
<sup>α</sup>Coupling is referenced to the **input**

\*Insertion loss is over and above coupling "loss"

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**Package Outline**



- NOTES:**
1. Tolerance on 3 place decimals  $\pm 0.020(.51)$  except as noted.
  2. Dimensions in inches over millimeters.
  3. Weights are nominal on all outlines.
  4. Outline 2A differs from 2 in dimension A=5.88"

| OUTLINE | A                     | B                    | C                    | D                     | E                    | WT. OZ. (G) |
|---------|-----------------------|----------------------|----------------------|-----------------------|----------------------|-------------|
| 1       | $\frac{3.100}{78.74}$ | $\frac{.500}{12.70}$ | $\frac{.800}{20.32}$ | $\frac{1.500}{38.10}$ | —                    | 1.20 (34)   |
| 2       | $\frac{3.100}{78.74}$ | $\frac{.550}{13.97}$ | $\frac{.800}{20.32}$ | $\frac{1.500}{38.10}$ | —                    | 1.31 (37)   |
| 3       | $\frac{1.780}{45.21}$ | $\frac{.500}{12.70}$ | $\frac{.420}{10.67}$ | $\frac{.940}{23.88}$  | —                    | .88 (25)    |
| 4       | $\frac{1.780}{45.21}$ | $\frac{.550}{13.97}$ | $\frac{.420}{10.67}$ | $\frac{.940}{23.88}$  | —                    | .95 (27)    |
| 5       | $\frac{1.160}{29.46}$ | $\frac{.500}{12.70}$ | $\frac{.410}{10.41}$ | $\frac{.340}{8.64}$   | —                    | .71 (20)    |
| 6       | $\frac{1.160}{29.46}$ | $\frac{.550}{13.97}$ | $\frac{.410}{10.41}$ | $\frac{.340}{8.64}$   | —                    | .74 (21)    |
| 7       | $\frac{1.000}{25.40}$ | $\frac{.500}{12.70}$ | —                    | —                     | $\frac{.500}{12.70}$ | .67 (19)    |
| 8       | $\frac{1.000}{25.40}$ | $\frac{.550}{13.97}$ | —                    | —                     | $\frac{.500}{12.70}$ | .71 (20)    |
| 9       | $\frac{1.000}{25.40}$ | $\frac{.600}{15.24}$ | —                    | —                     | $\frac{.500}{12.70}$ | .74 (21)    |

**POWER SPECIFICATIONS**

|                        |              |               |
|------------------------|--------------|---------------|
| Coupled "Loss":        | 6 dB units:  | 1.25 dB       |
|                        | 10 dB units: | 0.46 dB       |
|                        | 20 dB units: | 0.044 dB      |
|                        | 30 dB units: | 0.004 dB      |
| Peak Power:            | CSM-M-15G:   | 1 kW max.     |
|                        | CSM-M-12G:   | 2 kW max.     |
|                        | All others:  | 3 kW max.     |
| Input Power (Forward): |              | 50 Watts max. |
| Reflected Power:       | 6 dB units:  | 2 Watts max.  |
|                        | 10 dB units: | 5 Watts max.  |
|                        | 20 dB units: | 50 Watts max. |
|                        | 30 dB units: | 50 Watts max. |

**GENERAL SPECIFICATIONS**

|                   |  |
|-------------------|--|
| Impedance:        | 50 $\Omega$ nom.                                   |
| SMA Connectors:   | Female, to meet the interface reqts of MIL-C-39012 |
| Operating Temp:   | - 55° to +85°C                                     |
| Other connectors: | TNC and N type available                           |

**General Notes:**

1. The CSM series directional couplers are miniature three port devices utilizing stripline technology in a connectorized package. Each is a quarter wave coupler operating across an octave band of frequencies. They are ideally suited to monitor forward or reflected power with minimal perturbation to the main line signal, signal sampling, control loops and for test signal injection devices in BITE.
2. These devices comply with MIL-C-15370 and may be supplied screened for compliance with additional specifications you designate for military and aerospace applications requiring the highest reliability.

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