



DIRECTIONAL COUPLERS

CTM-M-G SERIES



TECHNICAL FEATURE

FEATURES

- 0.5 - 18 GHz
- Multi-Octave Bands
- 50 W Power Handling
- 6, 10 & 20 dB Coupling
- Stripline Construction
- SMA Connectors

PRINCIPAL SPECIFICATIONS

| Model Number | Frequency Range GHz | Coupling ^α dB Nom. | Frequency Sensitivity, dB, Nom. | Directivity, dB, Min. | *Insertion Loss, dB Max. | VSWR Max. | | Outline Ref Dim. |
|---------------|---------------------|-------------------------------|---------------------------------|-----------------------|--------------------------|-----------|--------------|------------------|
| | | | | | | Main Line | Coupled Line | |
| CTM-6M-1.25G | 0.5 - 2.0 | 6 ± 1.0 | ± 0.75 | 23 | 0.35 | 1.20:1 | 1.20:1 | 1 |
| CTM-10M-1.25G | | 10 ± 1.0 | ± 0.75 | 23 | 0.35 | 1.20:1 | 1.20:1 | 2 |
| CTM-20M-1.25G | | 20 ± 1.0 | ± 0.75 | 23 | 0.35 | 1.20:1 | 1.20:1 | 2 |
| CTM-6M-2.5G | 1.0 - 4.0 | 6 ± 1.0 | ± 0.50 | 23 | 0.45 | 1.20:1 | 1.20:1 | 3 |
| CTM-10M-2.5G | | 10 ± 1.0 | ± 0.50 | 23 | 0.35 | 1.20:1 | 1.20:1 | 3 |
| CTM-20M-2.5G | | 20 ± 1.0 | ± 0.50 | 23 | 0.40 | 1.20:1 | 1.20:1 | 4 |
| CTM-6M-5G | 2.0 - 8.0 | 6 ± 1.0 | ± 0.30 | 20 | 0.50 | 1.25:1 | 1.25:1 | 5 |
| CTM-10M-5G | | 10 ± 1.0 | ± 0.40 | 20 | 0.35 | 1.25:1 | 1.25:1 | 5 |
| CTM-20M-5G | | 20 ± 1.0 | ± 0.40 | 20 | 0.40 | 1.25:1 | 1.25:1 | 6 |
| CTM-10M-8G | 4.0 - 12.4 | 10 ± 1.0 | ± 0.40 | 17 | 0.50 | 1.30:1 | 1.30:1 | 7 |
| CTM-20M-8G | | 20 ± 1.0 | ± 0.40 | 17 | 0.50 | 1.30:1 | 1.30:1 | 8 |
| CTM-10M-12G | 7.0 - 18.0 | 10 ± 1.25 | ± 0.75 | 15 | 0.60 | 1.35:1 | 1.40:1 | 9 |
| CTM-20M-12G | 6.0 - 18.0 | 20 ± 1.25 | ± 0.60 | 15 | 0.60 | 1.35:1 | 1.40:1 | 9 |

^αCoupling is referenced to the input

*Insertion Loss above Coupling Loss

POWER SPECIFICATIONS

Coupled Power "Loss":

| | |
|--------------|----------|
| 6 dB units: | 1.25 dB |
| 10 dB units: | 0.46 dB |
| 20 dB units: | 0.044 dB |

Peak Power: 3 kW max.

CW 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. |

GENERAL SPECIFICATIONS

Impedance: 50 Ω nom.

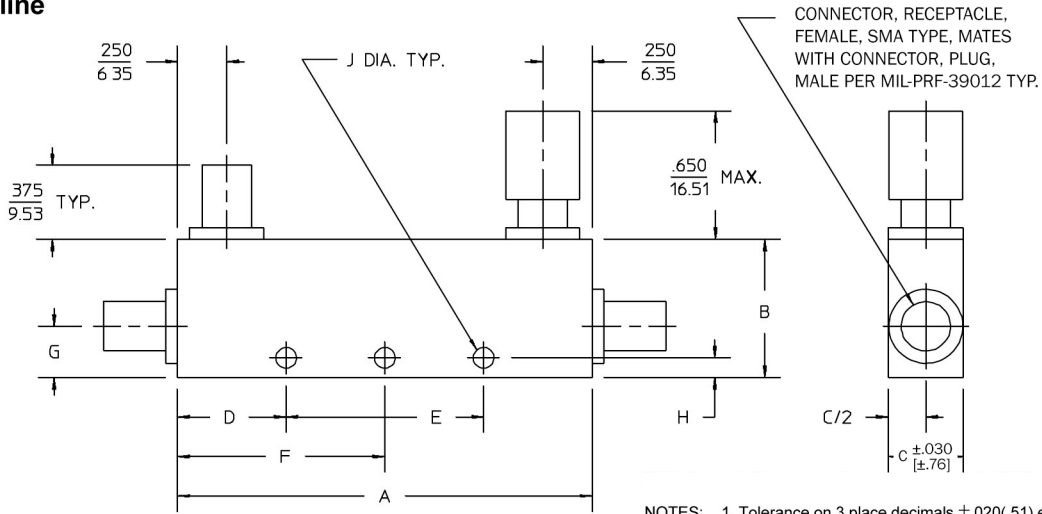
Operating Temp.: -55 ° to +85 °C

SMA Connectors: Female, to meet the interface requirements of MIL-PRF-39012

Other Connectors: TNC and N type optionally available. Inquire at factory.

DIRECTIONAL COUPLERS - CTM-M-G SERIES

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.

| OUTLINE | A | B | C | D | E | F | G | H | J | WT. OZ. (G) |
|---------|-----------------------|----------------------|---------------------|----------------------|-----------------------|----------------------|---------------------|---------------------|---------------------|-------------|
| 1 | $\frac{3.600}{91.44}$ | $\frac{.530}{13.46}$ | $\frac{.380}{9.65}$ | $\frac{.500}{12.70}$ | $\frac{2.600}{66.04}$ | — | $\frac{.220}{5.59}$ | $\frac{.075}{1.91}$ | $\frac{.105}{2.67}$ | 1.41 (40) |
| 2 | $\frac{3.600}{91.44}$ | $\frac{.600}{15.24}$ | $\frac{.380}{9.65}$ | $\frac{.500}{12.70}$ | $\frac{2.600}{66.04}$ | — | $\frac{.220}{5.59}$ | $\frac{.075}{1.91}$ | $\frac{.105}{2.67}$ | 1.59 (45) |
| 3 | $\frac{2.900}{73.66}$ | $\frac{.680}{17.27}$ | $\frac{.380}{9.65}$ | $\frac{.450}{11.43}$ | $\frac{2.000}{50.80}$ | — | $\frac{.340}{8.64}$ | $\frac{.150}{3.81}$ | $\frac{.149}{3.78}$ | 1.45 (41) |
| 4 | $\frac{2.900}{73.66}$ | $\frac{.600}{15.24}$ | $\frac{.380}{9.65}$ | $\frac{.450}{11.43}$ | $\frac{2.000}{50.80}$ | — | $\frac{.220}{5.59}$ | $\frac{.075}{1.91}$ | $\frac{.105}{2.67}$ | 1.41 (40) |
| 5 | $\frac{1.780}{45.21}$ | $\frac{.680}{17.27}$ | $\frac{.380}{9.65}$ | $\frac{.450}{11.43}$ | $\frac{.875}{22.23}$ | — | $\frac{.340}{8.64}$ | $\frac{.150}{3.81}$ | $\frac{.149}{3.78}$ | 1.02 (29) |
| 6 | $\frac{1.880}{47.75}$ | $\frac{.600}{15.24}$ | $\frac{.380}{9.65}$ | $\frac{.440}{11.18}$ | $\frac{1.000}{25.40}$ | — | $\frac{.220}{5.59}$ | $\frac{.075}{1.91}$ | $\frac{.105}{2.67}$ | 1.02 (29) |
| 7 | $\frac{1.220}{30.99}$ | $\frac{.550}{13.97}$ | $\frac{.380}{9.65}$ | $\frac{.420}{10.67}$ | $\frac{.375}{9.53}$ | — | $\frac{.220}{5.59}$ | $\frac{.075}{1.91}$ | $\frac{.105}{2.67}$ | .78 (22) |
| 8 | $\frac{1.220}{30.99}$ | $\frac{.600}{15.24}$ | $\frac{.380}{9.65}$ | $\frac{.420}{10.67}$ | $\frac{.375}{9.53}$ | — | $\frac{.220}{5.59}$ | $\frac{.075}{1.91}$ | $\frac{.105}{2.67}$ | .85 (24) |
| 9 | $\frac{1.000}{25.40}$ | $\frac{.500}{12.70}$ | $\frac{.380}{9.65}$ | — | — | $\frac{.500}{12.70}$ | $\frac{.220}{5.59}$ | $\frac{.075}{1.91}$ | $\frac{.105}{2.67}$ | .67 (19) |

General Notes:

- The CTM series directional couplers are miniature three port devices utilizing stripline technology in a connectorized package. Each is a multi-section quarter wave coupler designed to cover a broad bandwidth. They are ideally suited to monitor forward or reflected power with minimal perturbation to the main line signal, signal sampling, control loops and test signal injection devices in BITE.
- A variety of models may be custom ordered with coupling values up to 30 dB and covering frequency bands up to 18 GHz.
- These units comply with MIL-DTL-15370 and may be supplied screened for compliance with additional specifications you designate for military and space applications requiring the highest reliability.

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