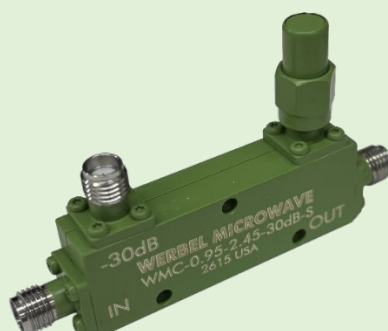


## Directional Coupler, 0.95-2.45 GHz, 20 dB, SMA Female

## WMC-0.95-2.45-20dB-S



This directional coupler operates from 0.95 to 2.45 GHz and is well suited for L-band and lower microwave applications requiring reliable signal sampling and monitoring. The frequency range covers many GPS/GNSS, telemetry, navigation, communications, and wireless systems, making the coupler a practical choice for test equipment, signal monitoring, transmitter applications, and general RF system integration. Its broadband coverage also supports applications spanning cellular, ISM, and other communications bands within the operating range.

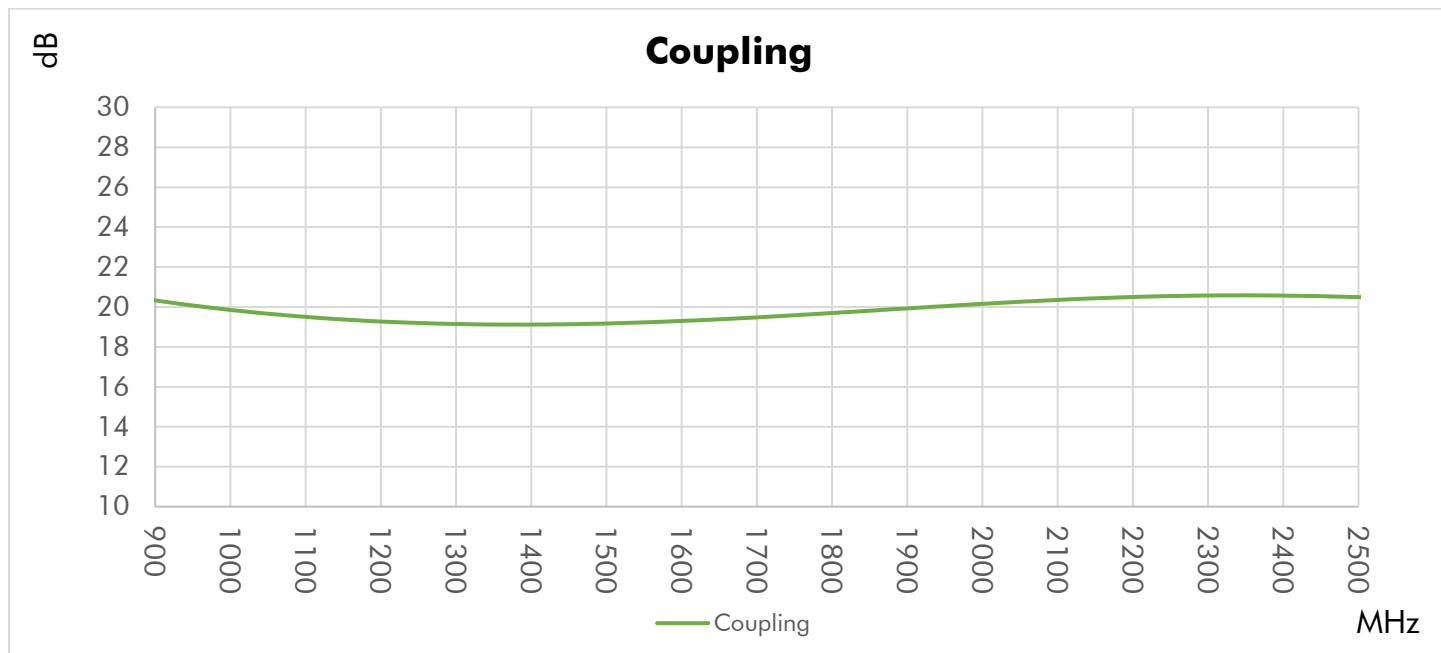
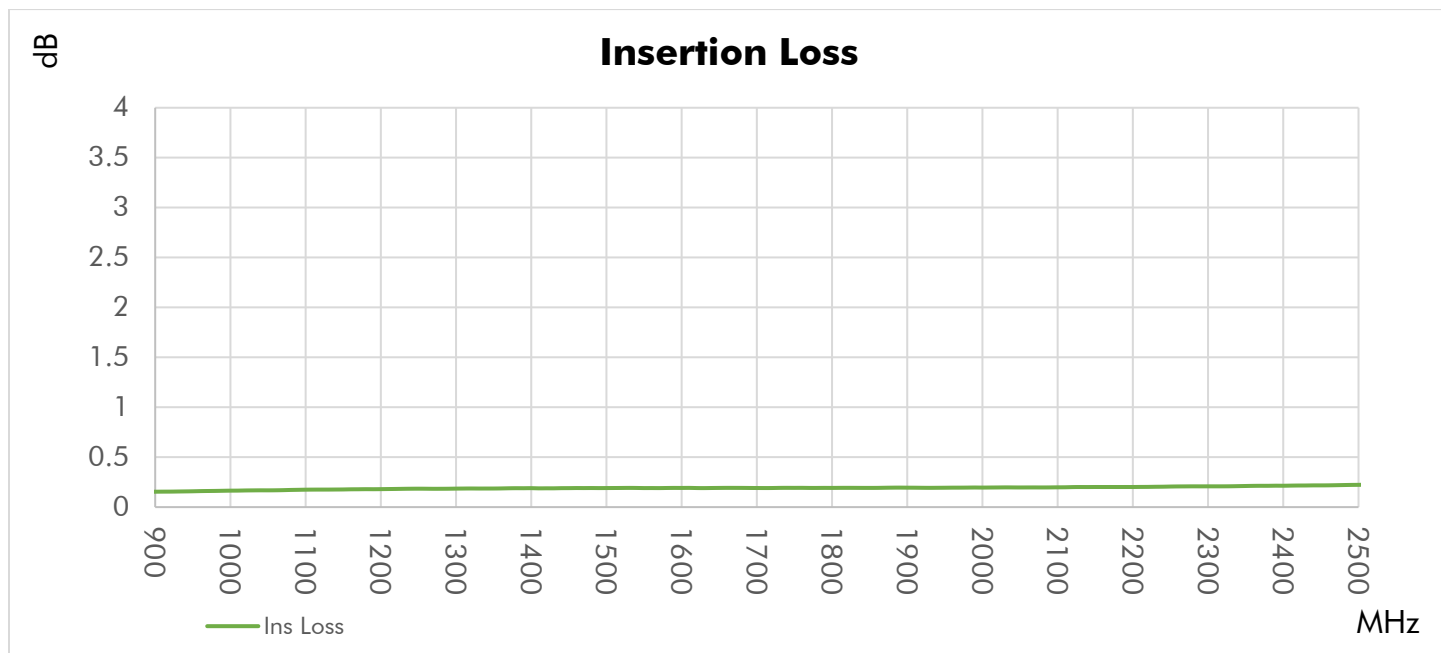
| Parameter                        | Min.         | Typ.       | Max.       | Unit     |
|----------------------------------|--------------|------------|------------|----------|
| Frequency Range                  | 0.95         | -          | 2.45       | GHz      |
| Impedance                        | 50           |            |            | $\Omega$ |
| Coupling                         | -            | 20         | $\pm 1.25$ | dB       |
| Frequency Sensitivity (Flatness) | -            | $\pm 0.75$ | -          | dB       |
| Mainline Loss <sup>1</sup>       | -            | 0.15       | 0.25       | dB       |
| Directivity                      | 20           | 25         | -          | dB       |
| Mainline Return Loss             | 22           | 30+        | -          | dB       |
| Secondary Line Return Loss       | 22           | 30+        | -          | dB       |
| Isolation                        | -            | 35         | -          | dB       |
| Forward Power (CW) <sup>2</sup>  | -            | -          | 50         | W        |
| Reverse Power (CW) <sup>2</sup>  | -            | -          | 50         | W        |
| Termination Power                | -            | -          | 1          | W        |
| DC Current                       | Input-Output |            |            | A        |

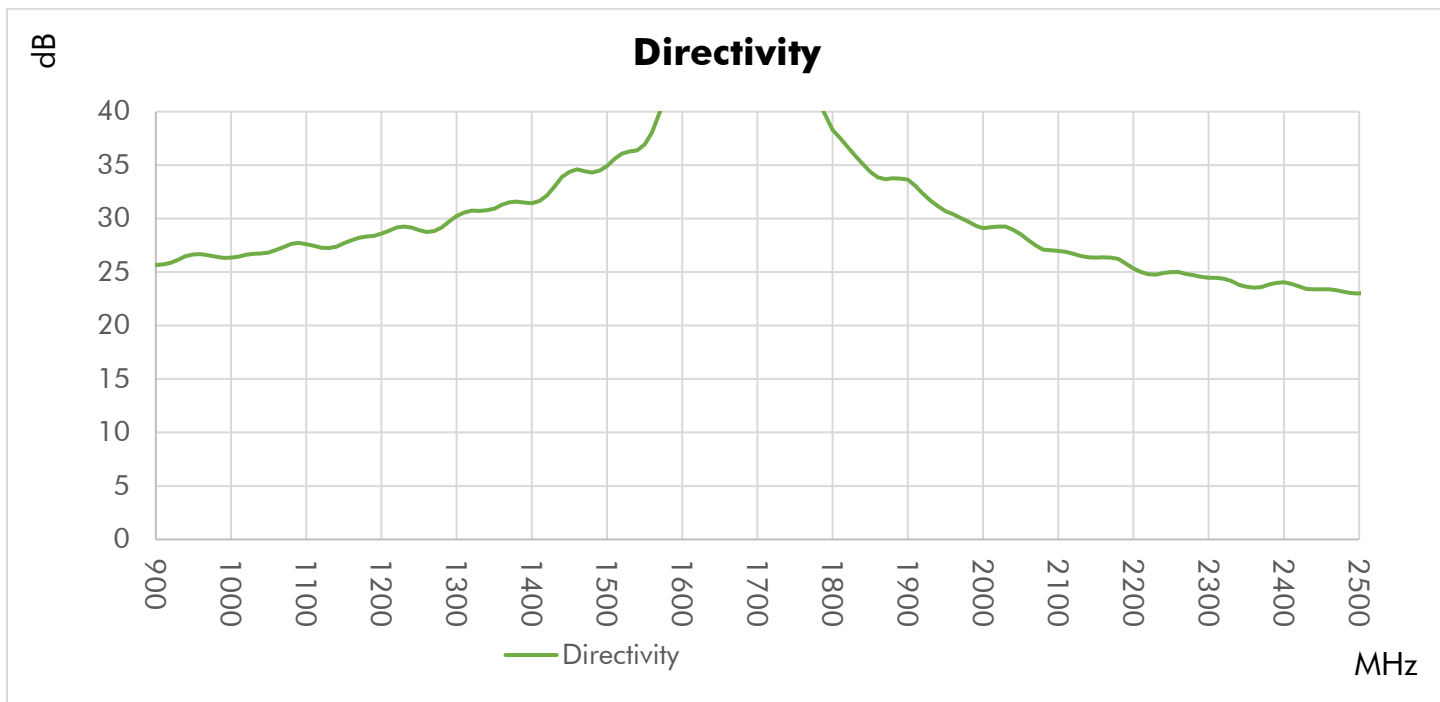
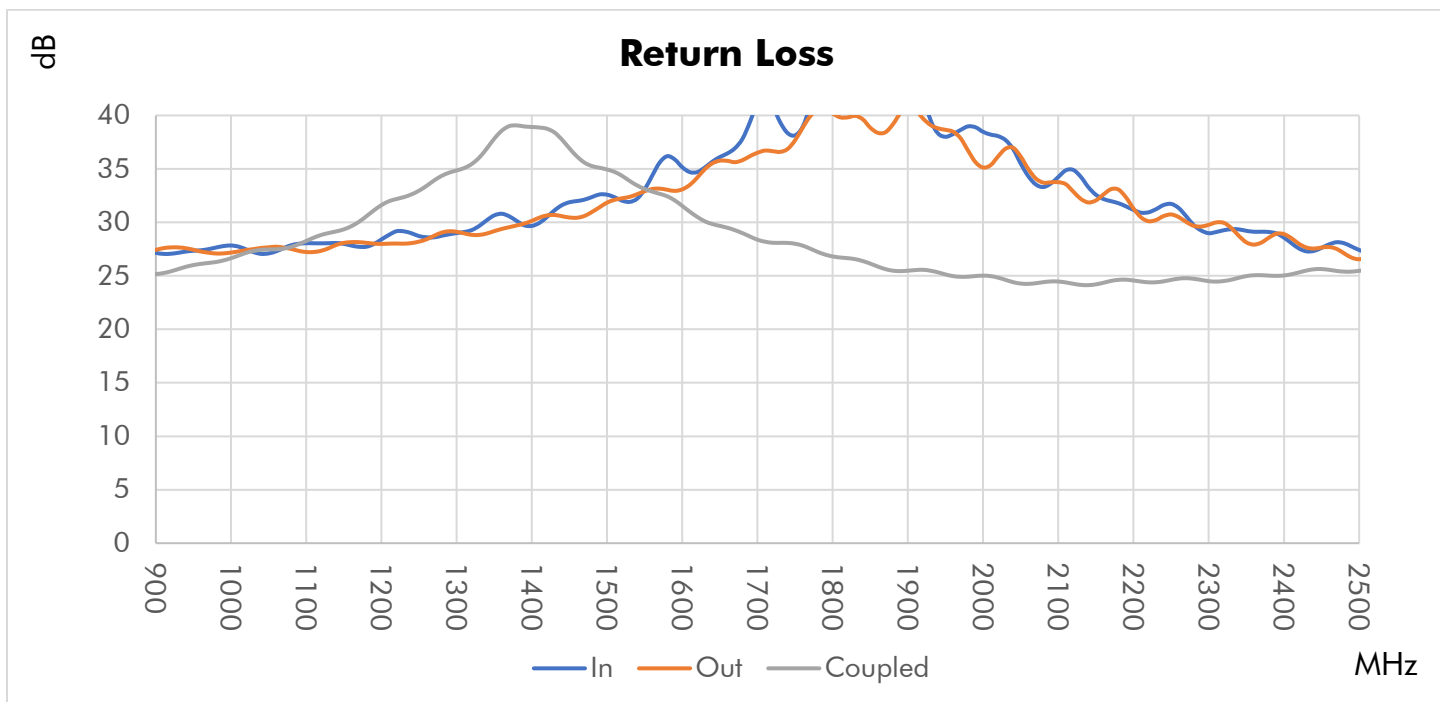
|                                    |                         |
|------------------------------------|-------------------------|
| Connector Interface                | SMA Female              |
| Operating Temperature <sup>3</sup> | -55 to +85 °C           |
| Storage Temperature                | -55 to +100 °C          |
| Nominal Weight                     | 28 g (1 oz)             |
| Operating Humidity                 | 10-90% (non-condensing) |
| Operating Environment              | Indoor Use Only         |
| HTSUS Code                         | 8525.50.3035            |
| ECCN                               | EAR99                   |

|                           |                               |
|---------------------------|-------------------------------|
| RoHS Status <sup>4</sup>  | RoHS3 Compliant               |
| REACH Status <sup>4</sup> | REACH Unaffected              |
| Enclosure Material        | Aluminum                      |
| Connectors Material       | Stainless Steel               |
| Contacts Material         | Beryllium Copper, Gold Plated |
| Insulators Material       | Virgin PTFE                   |
| Finish                    | Green Paint                   |

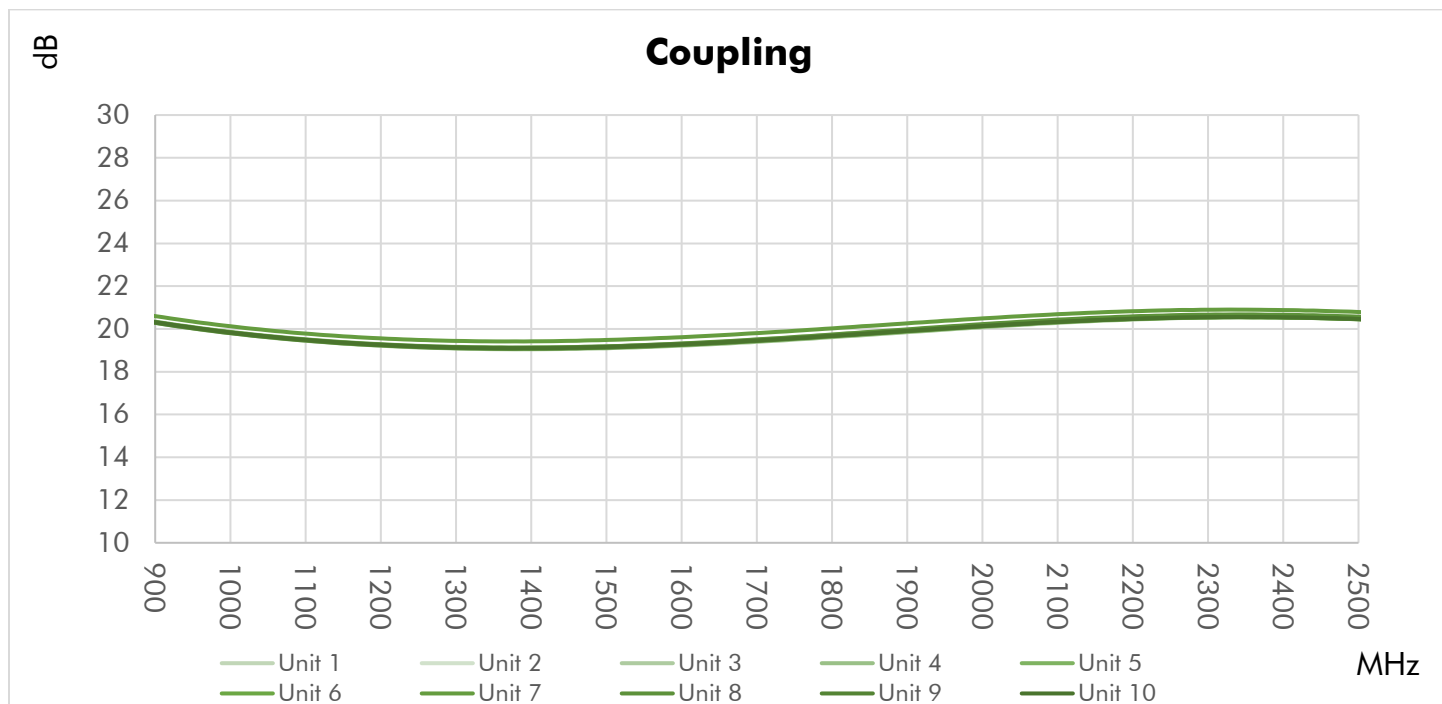
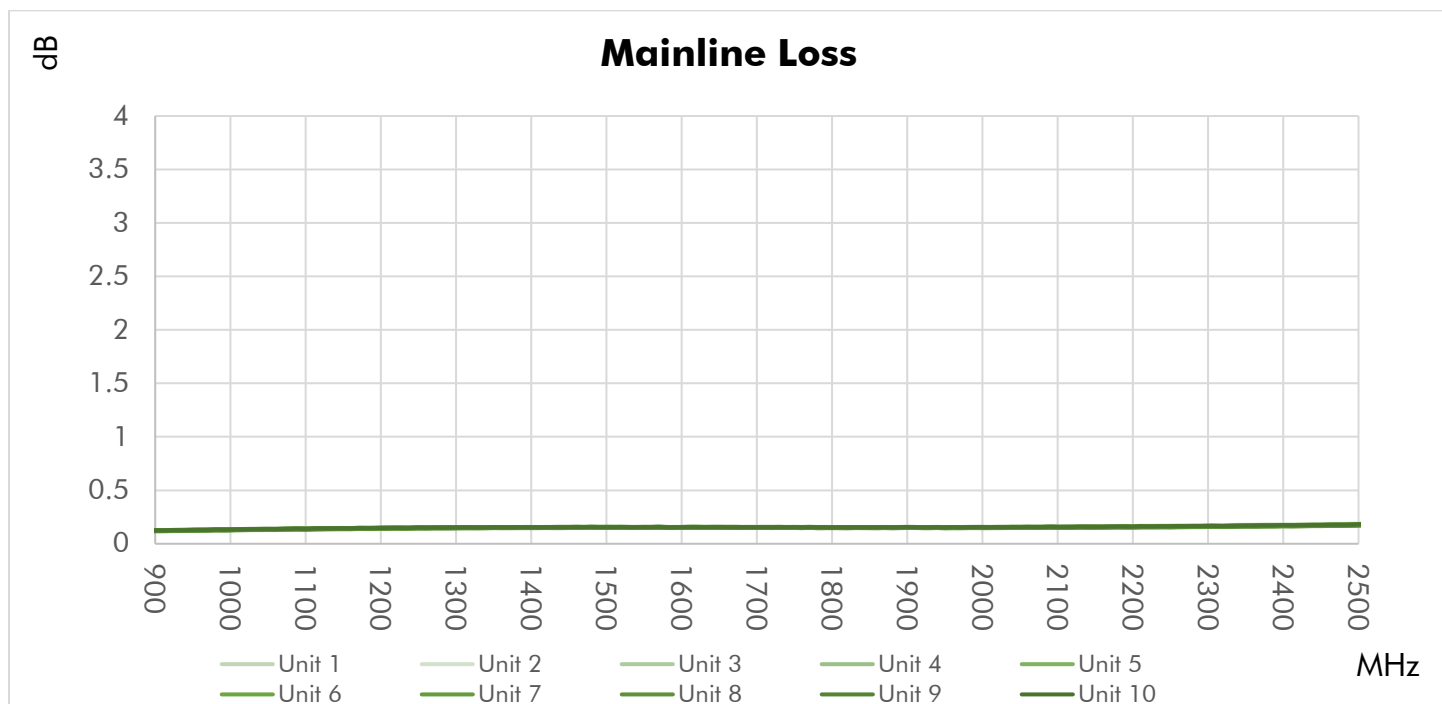
1. Mainline loss includes coupling loss.
2. All output ports should be terminated in a 50-ohm load with 1.2:1 max VSWR.
3. Electrical specifications are at +25 °C.
4. To the best of our knowledge at the time of publication.

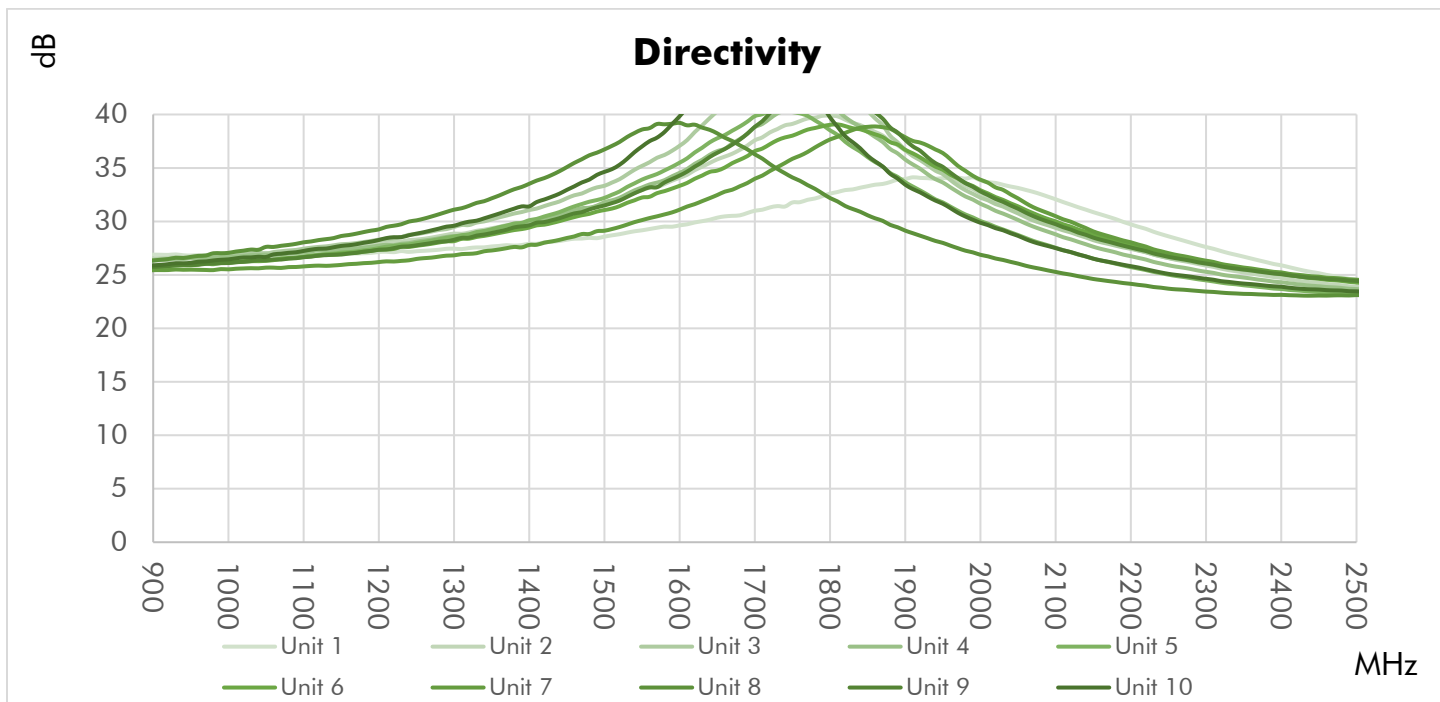
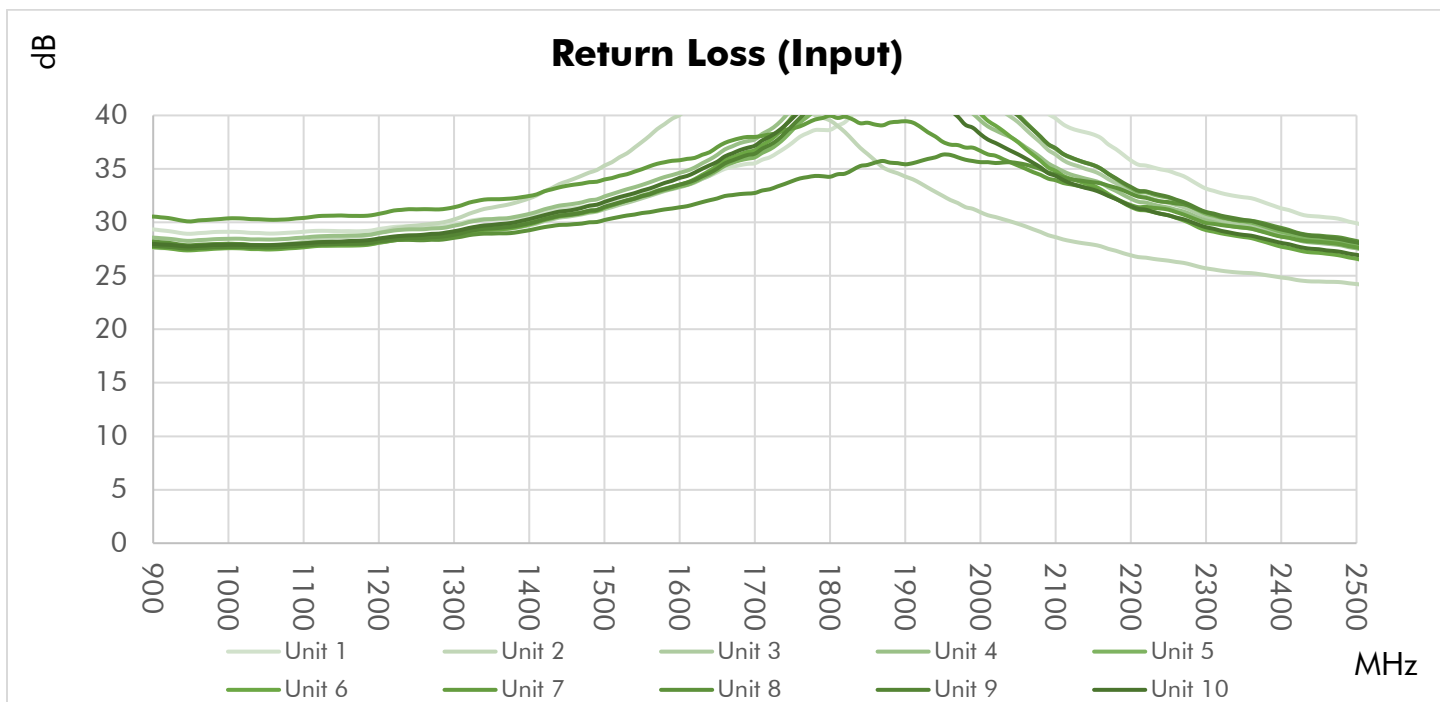
## Typical Performance at +25 °C



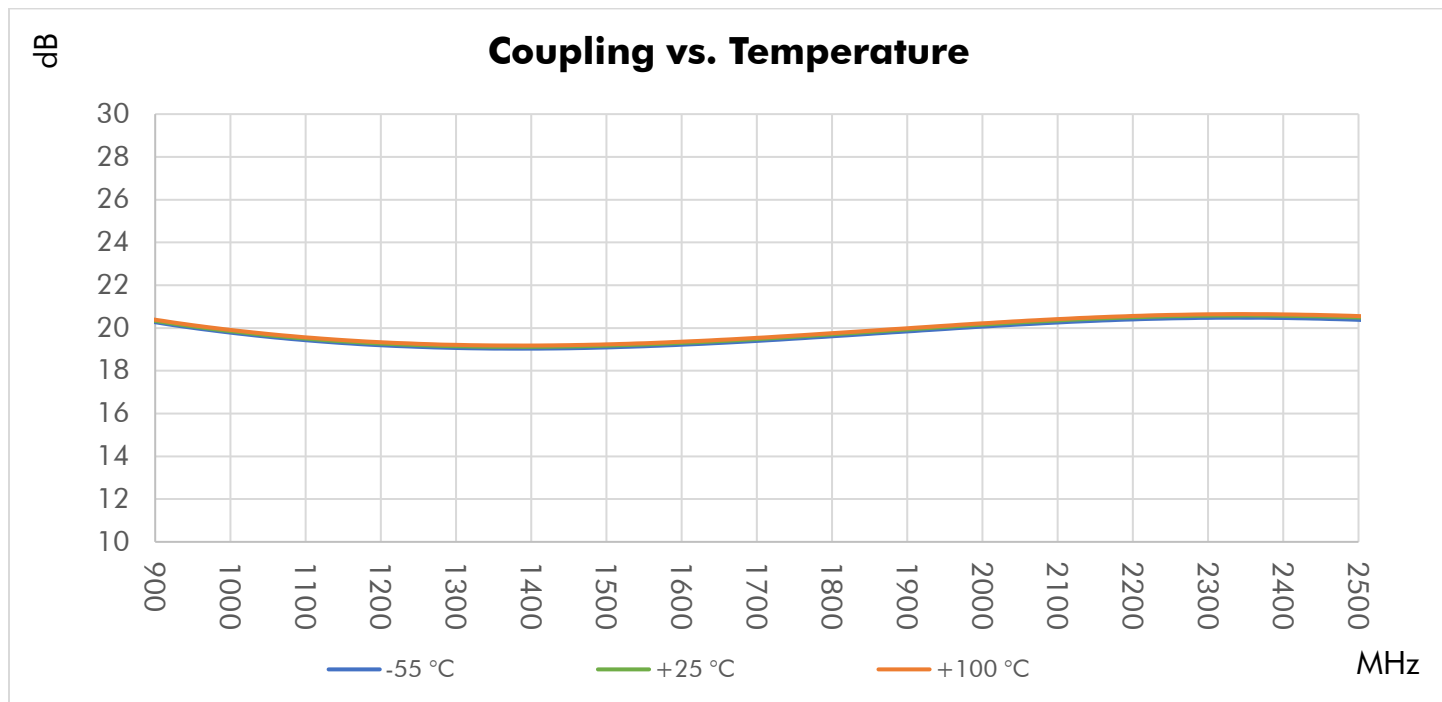
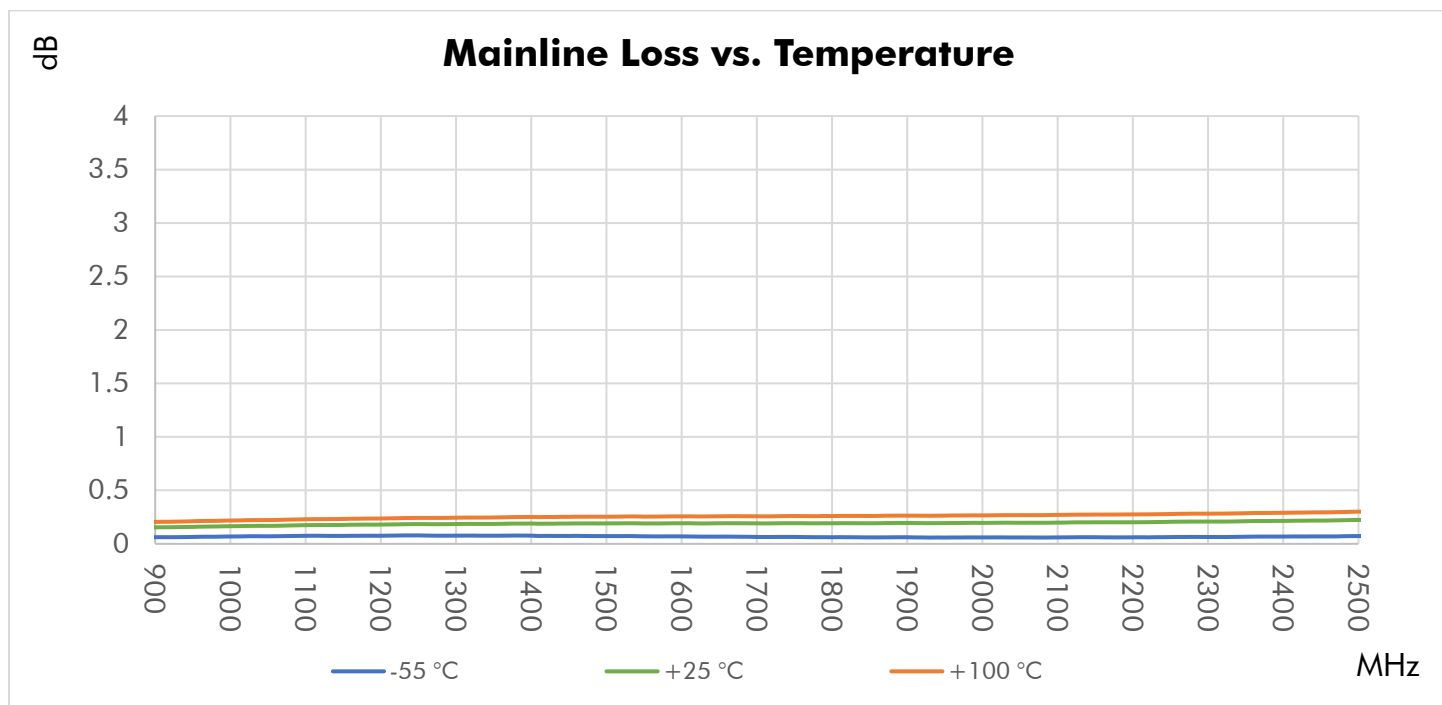


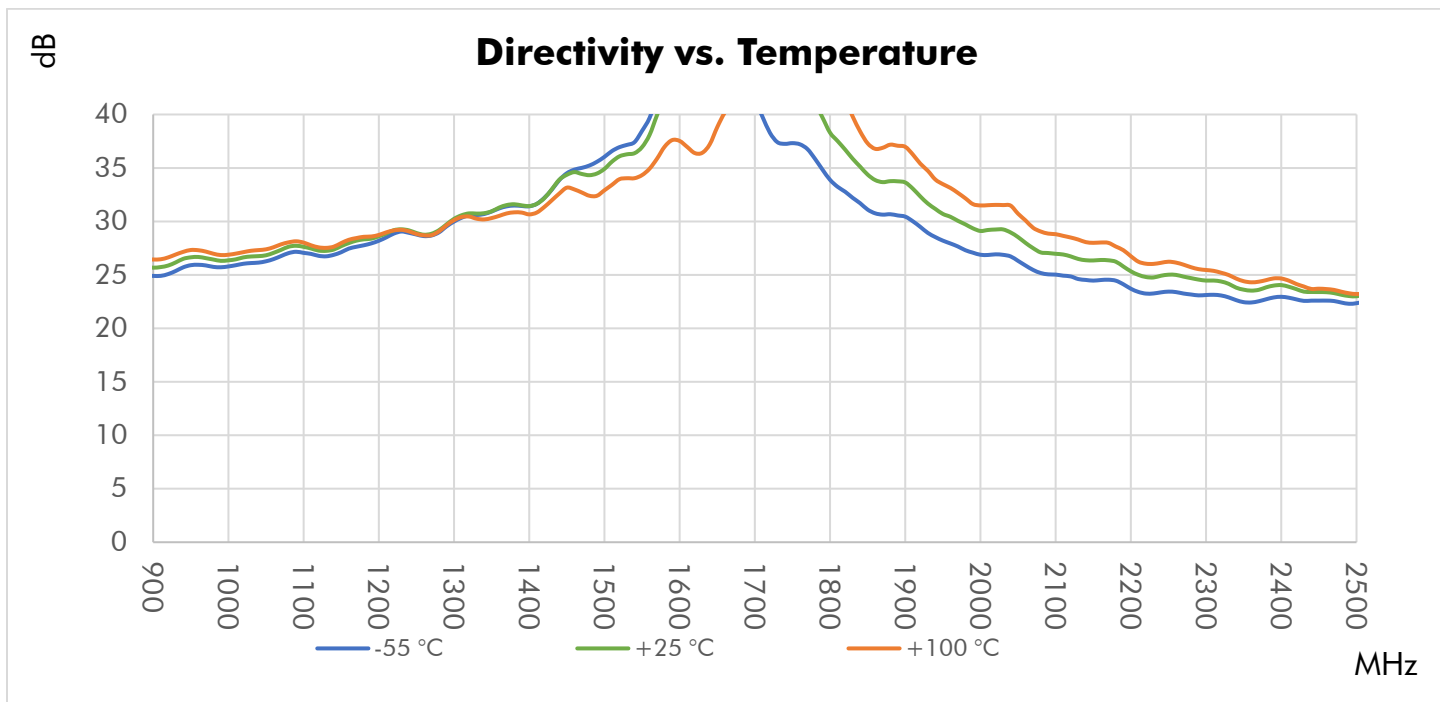
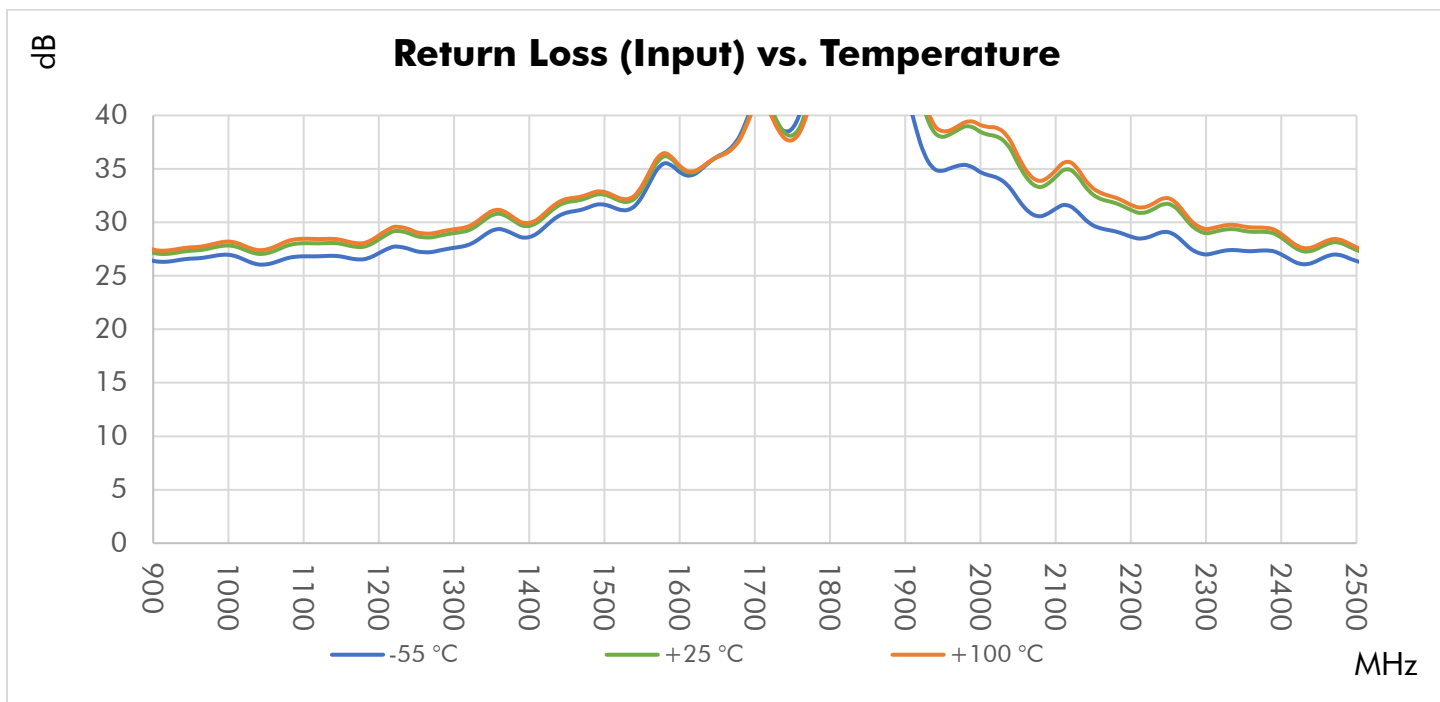
## Repeatability Among Random Selection





## Typical Performance Over Temperature

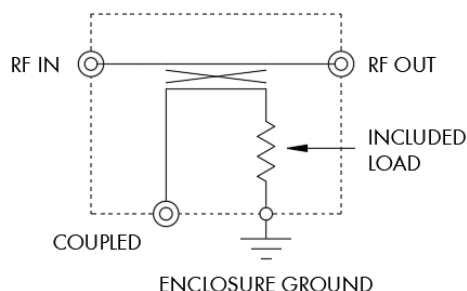




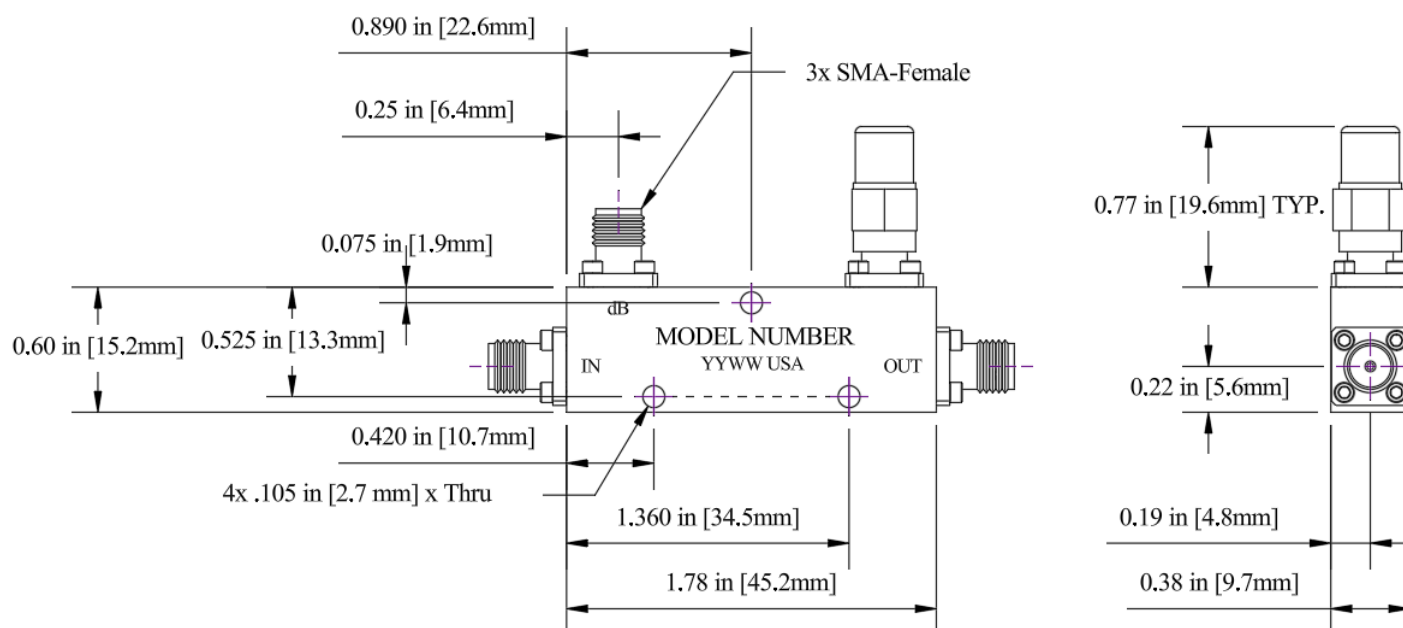
## Typical Performance Data

| Frequency<br>(MHz) | Return Loss<br>(dB) |       |       | Mainline Loss<br>(dB) | Coupling<br>(dB) | Directivity<br>(dB) |
|--------------------|---------------------|-------|-------|-----------------------|------------------|---------------------|
|                    | In                  | Out   | Cpl.  | In-Out                | In-Cpl.          |                     |
| 500                | 30.79               | 30.02 | 25.06 | 0.03                  | 24.13            | 25.05               |
| 550                | 29.13               | 29.72 | 24.79 | 0.04                  | 23.42            | 24.90               |
| 600                | 28.93               | 29.26 | 24.80 | 0.04                  | 22.81            | 24.80               |
| 650                | 28.70               | 28.31 | 24.32 | 0.04                  | 22.26            | 24.77               |
| 700                | 27.73               | 28.36 | 24.38 | 0.04                  | 21.77            | 24.84               |
| 750                | 28.02               | 27.74 | 24.54 | 0.04                  | 21.35            | 24.95               |
| 800                | 27.43               | 27.87 | 24.84 | 0.04                  | 20.97            | 25.04               |
| 850                | 27.76               | 27.37 | 25.09 | 0.05                  | 20.63            | 25.09               |
| 900                | 27.15               | 27.43 | 25.16 | 0.05                  | 20.33            | 25.07               |
| 950                | 27.35               | 27.44 | 26.01 | 0.05                  | 20.07            | 25.01               |
| 1000               | 27.84               | 27.18 | 26.65 | 0.05                  | 19.85            | 24.95               |
| 1100               | 28.05               | 27.23 | 28.26 | 0.05                  | 19.51            | 24.89               |
| 1200               | 28.41               | 27.99 | 31.61 | 0.05                  | 19.27            | 24.85               |
| 1300               | 29.00               | 29.12 | 34.86 | 0.06                  | 19.15            | 24.82               |
| 1400               | 29.67               | 30.14 | 38.92 | 0.06                  | 19.12            | 24.85               |
| 1500               | 32.59               | 31.85 | 34.94 | 0.06                  | 19.17            | 24.78               |
| 1600               | 35.15               | 33.09 | 31.54 | 0.06                  | 19.30            | 24.65               |
| 1700               | 41.28               | 36.51 | 28.38 | 0.06                  | 19.48            | 24.65               |
| 1800               | 47.81               | 40.17 | 26.81 | 0.06                  | 19.70            | 24.72               |
| 1900               | 48.11               | 40.95 | 25.48 | 0.07                  | 19.93            | 24.77               |
| 2000               | 38.46               | 35.13 | 25.02 | 0.07                  | 20.15            | 24.91               |
| 2100               | 34.25               | 33.76 | 24.47 | 0.07                  | 20.35            | 25.00               |
| 2200               | 31.16               | 31.29 | 24.56 | 0.07                  | 20.50            | 24.88               |
| 2300               | 28.99               | 29.78 | 24.50 | 0.07                  | 20.57            | 24.77               |
| 2400               | 28.58               | 28.90 | 25.03 | 0.07                  | 20.57            | 24.64               |
| 2500               | 27.42               | 26.55 | 25.47 | 0.07                  | 20.49            | 24.57               |
| 2600               | 27.06               | 26.23 | 26.41 | 0.08                  | 20.34            | 24.52               |
| 2700               | 25.86               | 25.37 | 26.93 | 0.08                  | 20.15            | 24.58               |
| 2800               | 24.90               | 24.93 | 27.70 | 0.08                  | 19.94            | 24.68               |
| 2900               | 24.56               | 25.14 | 28.01 | 0.08                  | 19.73            | 24.63               |
| 3000               | 24.28               | 24.22 | 28.02 | 0.08                  | 19.53            | 24.65               |

## Simplified Electrical Schematic



## Outline Dimensions



Dimensions are in inches, [mm] shown for convenience.  
Tolerances on 2-pl decimals:  $\pm .03$ . 3-pl decimals:  $\pm .015$ .

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