



COAXIAL NON-ISOLATING

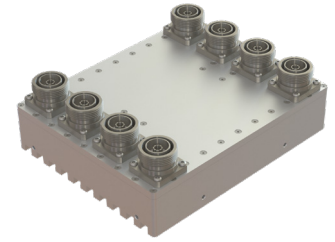
Power Splitter/Combiner

COM-2G42G58K0+

50Ω 8-Way-0° / 180° 2.4 to 2.5 GHz 7/16 DIN Female to WR340 9600 W

THE BIG DEAL

- Very high-power handling, up to 9600W CW
- Exceptionally low insertion loss, 0.1dB typ.
- Low amplitude unbalance (0.1dB typ.) and phase unbalance (1° typ.)

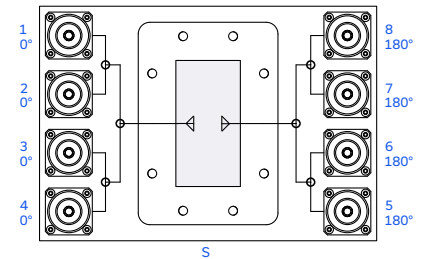


Generic photo used for illustration purposes only

APPLICATIONS

- RF energy generators
- Industrial heating
- Plasma generators
- S-band high-power amplifiers
- Magnetron power splitter

FUNCTIONAL DIAGRAM



PRODUCT OVERVIEW

Mini-Circuits' COM-2G42G58K0+ is an 8-way 0° / 180° non-isolating combiner providing very high power handling and exceptionally low insertion loss across 2400 to 2500 MHz. It is designed to maximize the efficiency of high-power amplifiers and generators working in the ISM 2.45GHz band and a variety of other S-band applications.

KEY FEATURES

Features	Advantages
Non-Isolating Differential Combiner	The COM-2G42G58K0+ is a non-isolating combiner (i.e. no internal isolating resistors). All performance parameters, when used as a combiner, are based upon 1-4 ports fed in phase and 5-8 ports fed in anti-phase. Differential architecture helps to improve EMI and minimize size of the combiner.
Power handling up to 9.6kW in a very compact size	This makes COM-2G42G58K0+ suitable for cost effective, high-power solid state power amplifier application
Low insertion loss, 0.1 dB	Low insertion loss results in low power dissipation and easy thermal management, high power combining efficiency
Optimized distribution of electrical, thermal and mechanical stress	Excellent ruggedness and long-term reliability
Low amplitude unbalance (0.1dB typ.) and phase unbalance (1° typ.)	High power combining efficiency. Precise signal distribution when used as the splitter
Modularity	Can be used in combination with 8x directly attached 1kW COM-2G42G51K0+ making a 32-way combiner assembly

REV. OR
NPO-004685
COM-2G42G58K0+
MCL NY
240923





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ELECTRICAL SPECIFICATIONS AT $T_{CASE} = +25^{\circ}C$

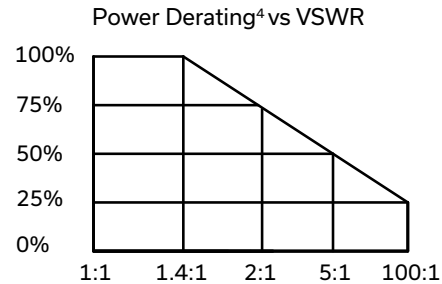
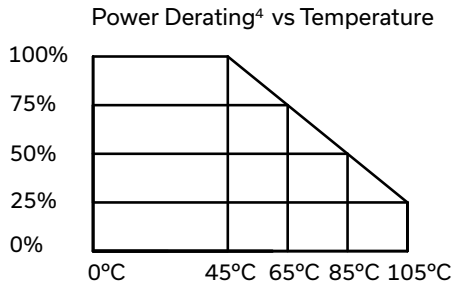
Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Frequency Range	-	2400	-	2500	MHz
Insertion Loss (above 9.03 dB) ¹	2400-2500	-	0.1	0.3	dB
Phase Unbalance (\pm) ^{1,2}	2400-2500	-	1	5	Degree
Amplitude Unbalance (\pm) ^{1,2}	2400-2500	-	0.1	0.3	dB
VSWR (Port S)	2400-2500	-	1.1	1.22	:1
Power Handling ¹	As Splitter ^{2,4}	2400-2500	-	9600	W
	As Combiner ^{3,4}	2400-2500	-	9600	

1. Ports 1-4 fed with in-phase input signals and ports 5-8 fed with anti-phase input signals when used as combiner, for derating vs temperature and VSWR, see graph below

2. All ports must be terminated with 50 Ω.

3. As a combiner of coherent signals, max. power per port is 1200W.

POWER DERATING CURVE



4. Power derating chart is based on units operated in CW mode

ABSOLUTE MAXIMUM RATINGS⁵

Parameter	Ratings
Operating Case Temperature ⁶	0 °C to +105 °C
Storage Temperature	0 °C to +105 °C

5. Permanent damage may occur if any of these limits are exceeded.

6. Units can be operated up to 105°C. Please refer to power derating chart.



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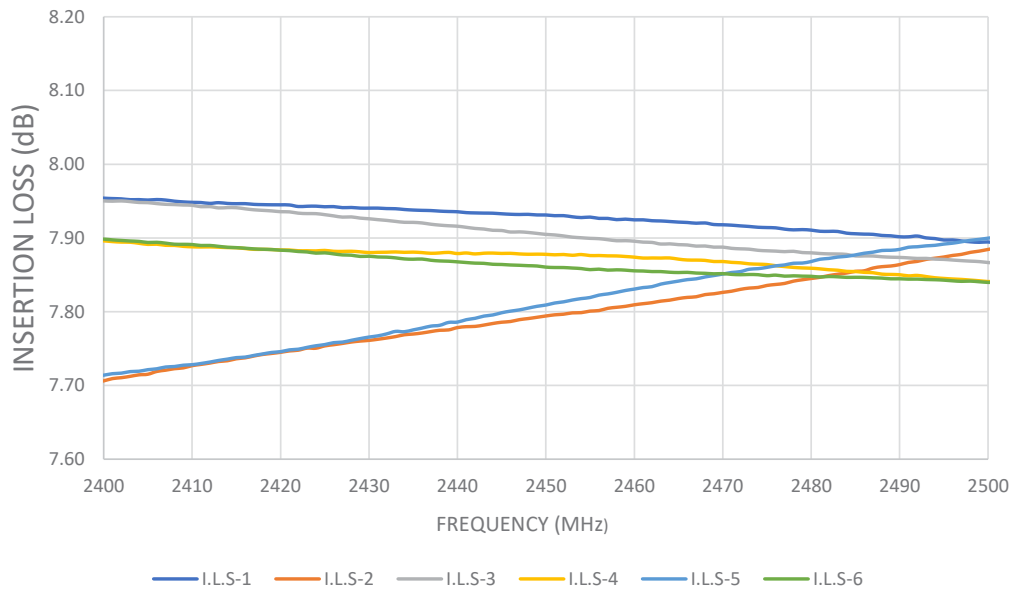
COM-2G42G58K0+

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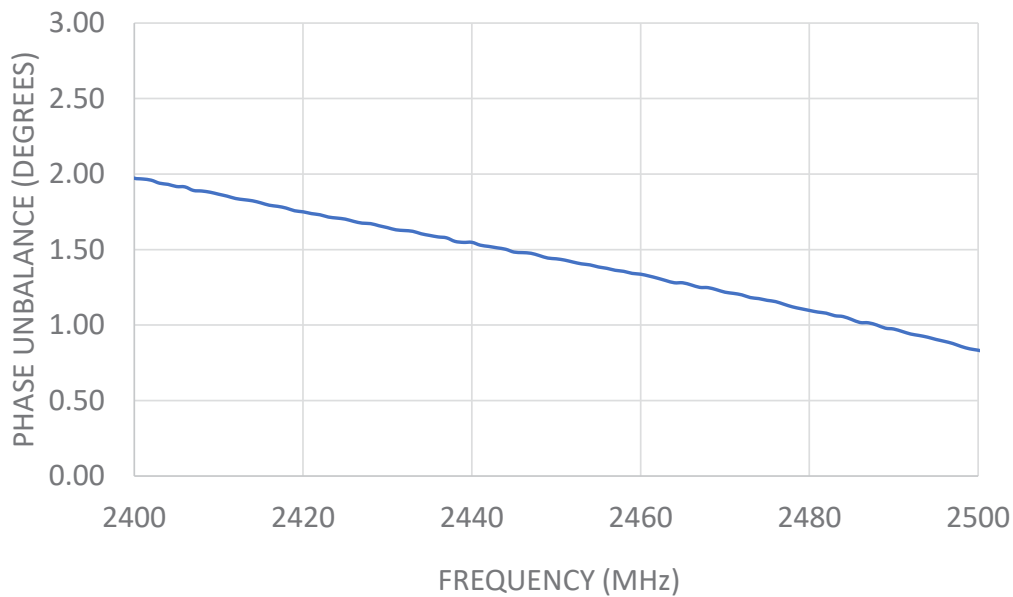
50Ω 8-Way-0° / 180° 2.4 to 2.5 GHz 7/16 DIN Female to WR340 9600 W

TYPICAL PERFORMANCE DATA ACROSS FREQUENCY ($T_{CASE} = +25^{\circ}C$, 50Ω SYSTEM)

INSERTION LOSS vs FREQUENCY



PHASE UNBALANCE vs FREQUENCY





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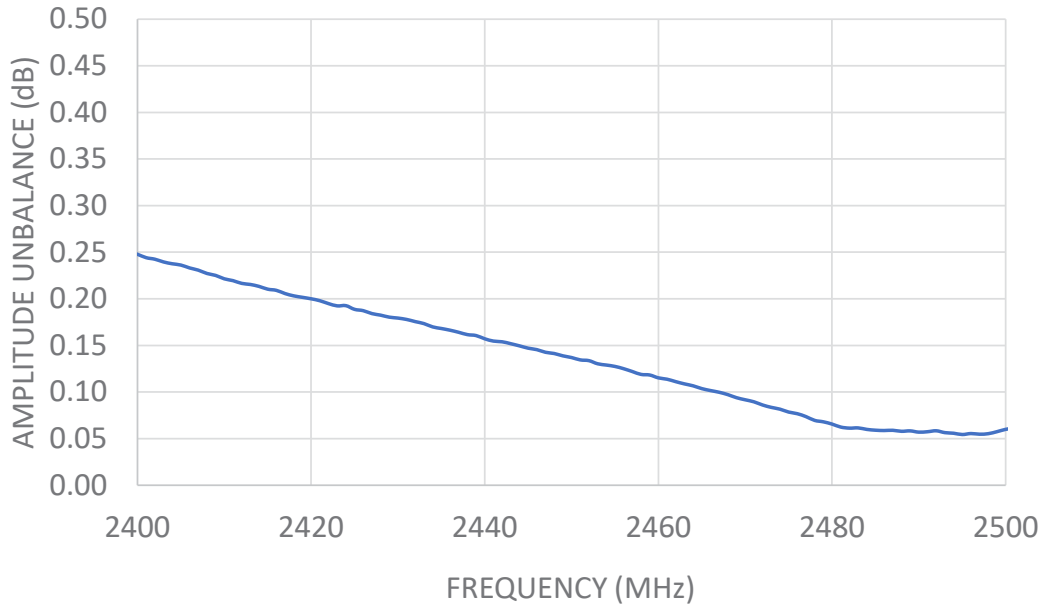
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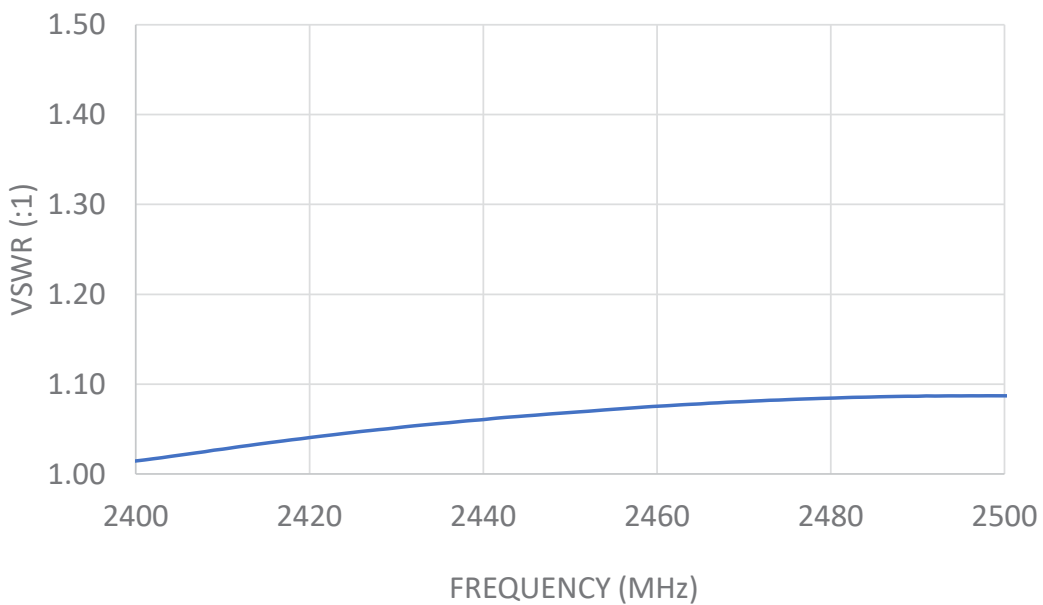
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TYPICAL PERFORMANCE DATA ACROSS FREQUENCY ($T_{CASE} = +25^{\circ}C$, 50Ω SYSTEM)

AMPLITUDE UNBALANCE vs FREQUENCY



VSWR vs FREQUENCY





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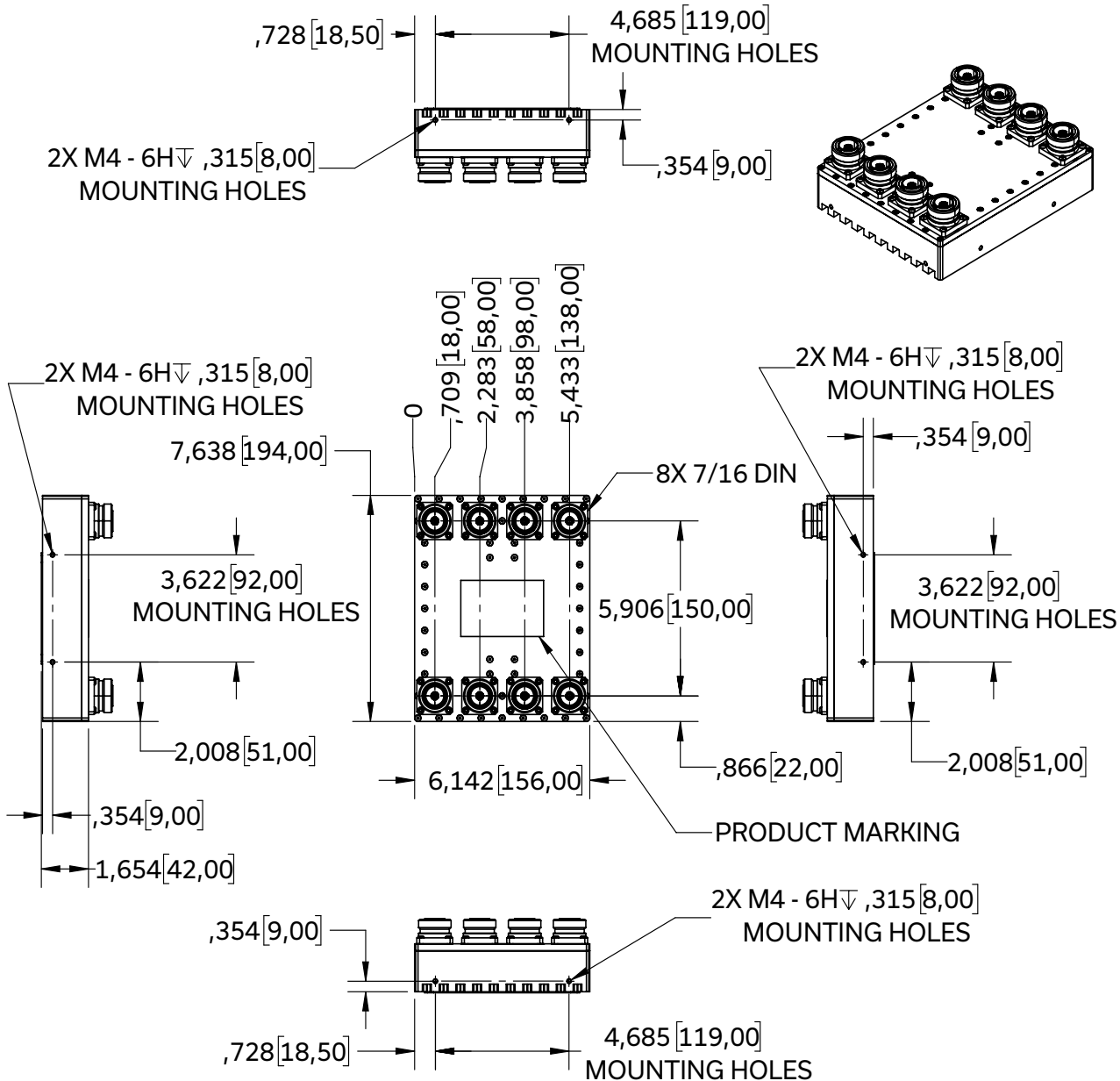
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COAXIAL CONNECTIONS

(Ports 1-8)	7/16 DIN Female
(Port S)	WR340 waveguide, CRPF flange

CASE STYLE DRAWING



Weight: 3053 grams

Dimensions are in inches [mm]. Tolerances: 2 Pl. 0.03 inch; 3 Pl. 0.015 inch

PRODUCT MARKING*: COM-2G42G58K0+

*Marking may contain other features or characters for internal lot control.





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ADDITIONAL INFORMATION IS AVAILABLE ON OUR DASHBOARD

[CLICK HERE](#)

Performance	Data
	Graphs
Case Style	VU3600
RoHS Status	Compliant
Environmental Ratings	ENV28T21

- NOTES
- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
 - B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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