

Doubler/Amplifier/Doubler

DAD-1840

The DAD-1840 consists of two high performance doublers with a broadband amplifier to provide a quadrupled output with excellent harmonic suppressions across a broad bandwidth. The DAD-1840 simultaneously rejects the first, second, and third harmonics, allowing filtering requirements to be relaxed. It is an excellent alternative to expensive millimeter wave synthesizers for lab use.



MICROLITHIC

Features

- Positive Bias Only Option
- Excellent Suppressions
- Combine with A-2050 or A-1844 to drive high level millimeter wave mixers

Electrical Specifications - Specifications measured in a 50-Ohm system.

Parameter	INPUT (GHz)	OUTPUT (GHz)	Min	Typ	Max
Input (dBm) F(in)	4.5-10		+9		+18
Output Converted Power (dBm) 12 dBm input 4F(out) 4F(out) with external A-2050		18-40	-12	See Plot	
Suppressions (dBc) F(in) Fundamental 2F(out) Second Harmonic 3F(out) Third Harmonic		4.5-10 9-20 13.5-30		See Plots	
Bias Requirements (mA) ¹ Vd: +3.0 to +7.0 / Vg: -0.2 to -0.5 Volts Vd: +3.0 to +7.0 / Vg: 0 Volts				165 250	250 280

1. Negative (gate) voltage may be increased to decrease current consumption and output power will improve second harmonic suppression.

Part Number Options

Model Number	Description
DAD-1840K	Connectorized Quadrupler Module SMA female input connector 2.92 mm male output connector
DAD-1840V	Connectorized Quadrupler Module SMA female input connector 2.4 mm male output connector

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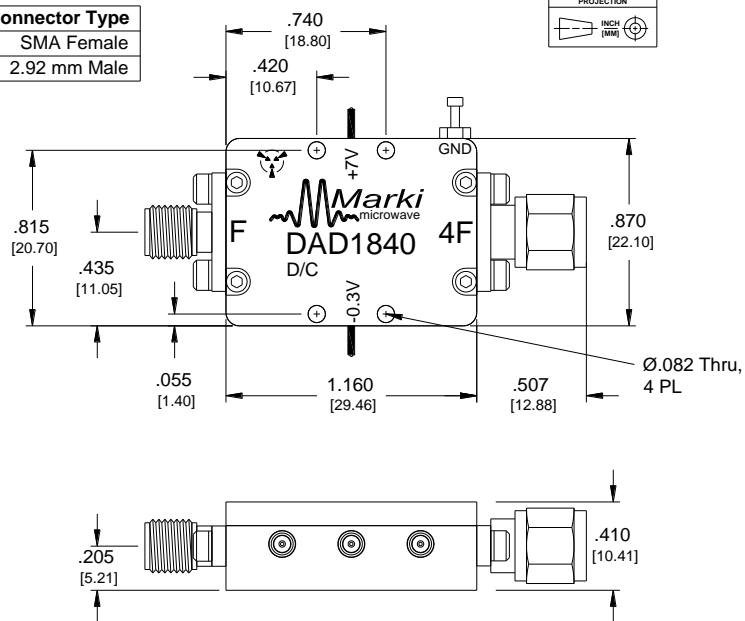
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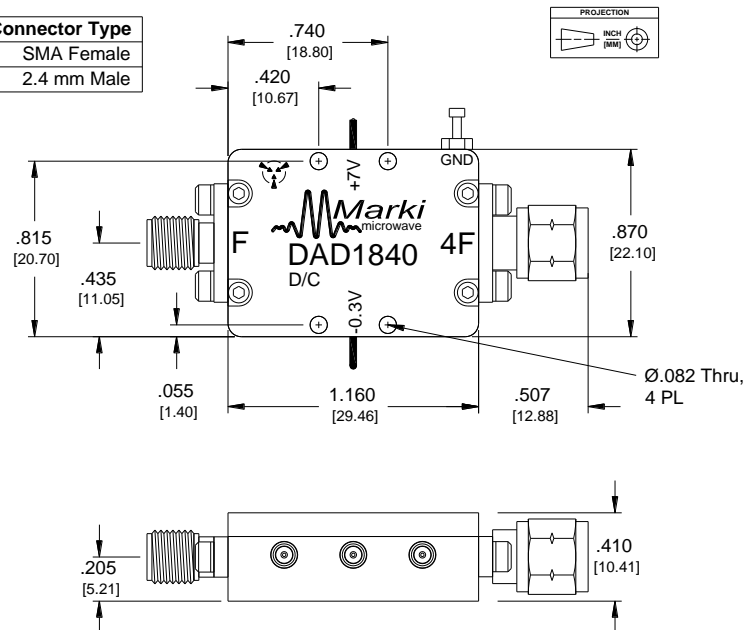
Input 4.5 to 10 GHz
Output 18 to 40 GHz

Port	Connector Type
F	SMA Female
4F	2.92 mm Male



DAD-1840K Outline Drawing

Port	Connector Type
F	SMA Female
4F	2.4 mm Male



DAD-1840V Outline Drawing

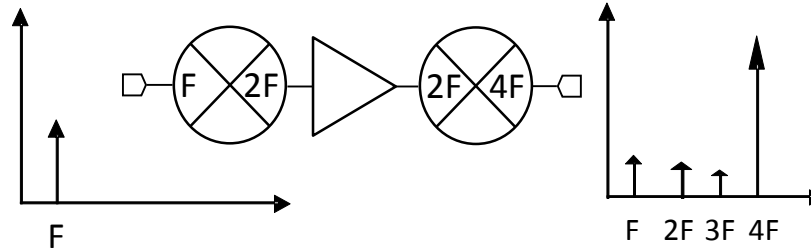
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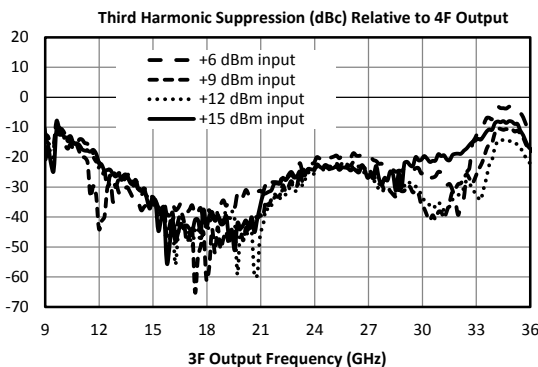
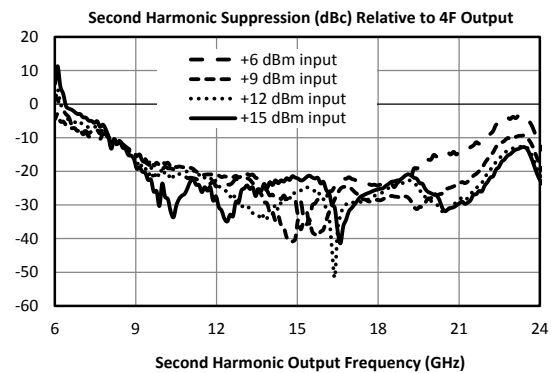
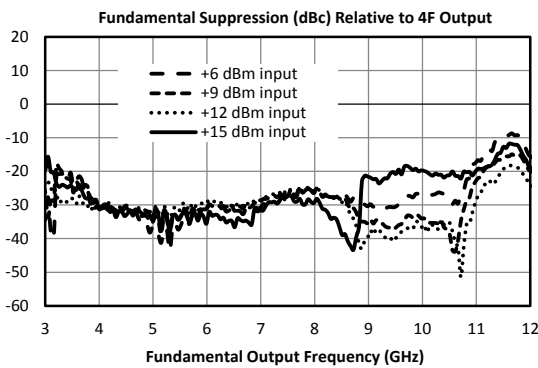
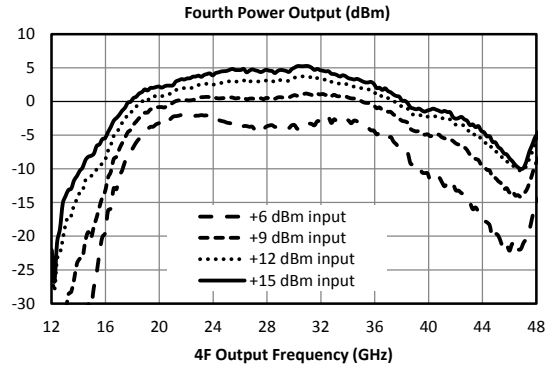
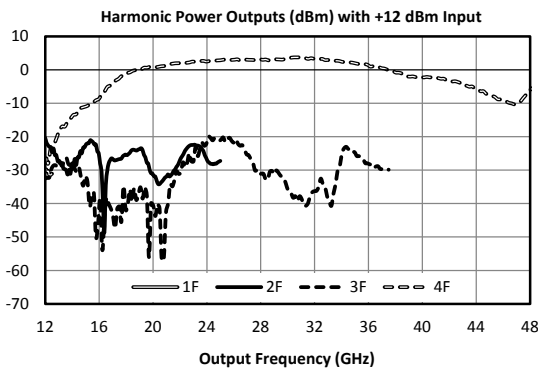
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Input 4.5 to 10 GHz
Output 18 to 40 GHz

Schematic



Typical Performance³



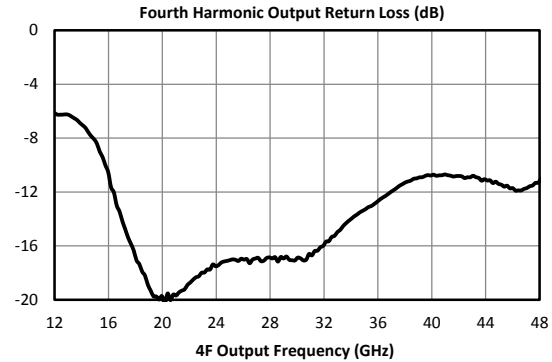
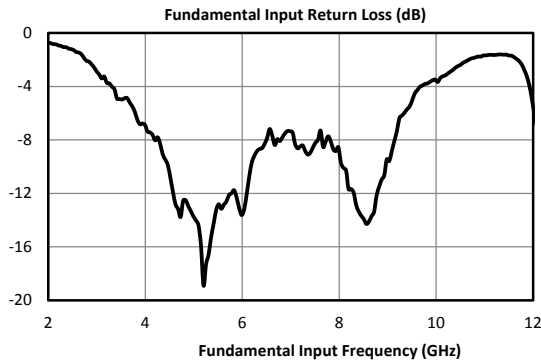
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

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Input 4.5 to 10 GHz
Output 18 to 40 GHz

Typical Performance (cont.)



Port	Description	DC Interface Schematic
F Input	The input port is DC short to ground and AC matched to 50 Ohms from 4.5 to 10 GHz. Blocking capacitor is optional.	
4F Output	The output port is DC short to ground and AC matched to 50 Ohms from 18 GHz to 40 GHz. Blocking capacitor is optional.	

Absolute Maximum Ratings	
Parameter	Maximum Rating
DC Current	250 mA
DC Voltage	9V positive / -2V negative
RF Power Handling	+25 dBm at +25°C, derated linearly to +20 dBm at +100°C
Temperature	Consult Factory ²

DATA SHEET NOTES:

1. Specifications are subject to change without notice. Contact Marki Microwave for the most recent specifications and data sheets.
2. Package is unsealed and contains exposed die. Customer must determine suitability for high reliability applications.
3. Unless otherwise noted, data is taken at +7 V/-0.25V.

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