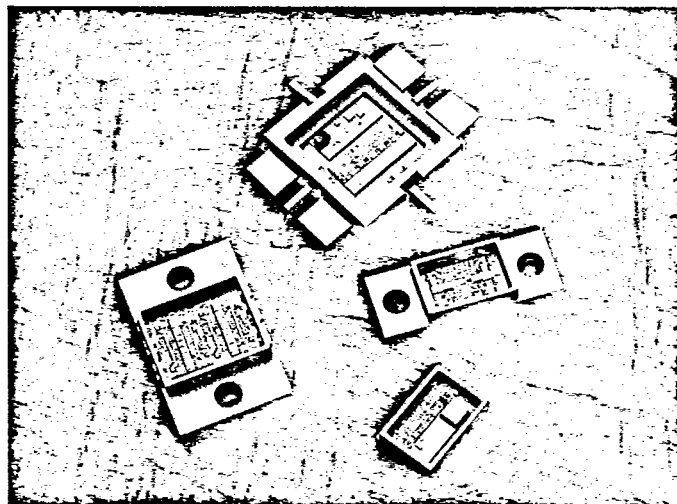


Connectorless (Drop-In) Amplifiers

- ❑ Frequency Coverage:

0.5-4 GHz	2-6 GHz	2-8 GHz
4-16 GHz	6-18 GHz	
- ❑ Connectorless (Drop-In) Design
- ❑ Small Package Sizes:

0.240 in. x 0.630 in.
0.400 in. x 0.630 in.
0.520 in. x 0.520 in.
- ❑ MIL-STD-883 Screening
- ❑ Cascadable for High Gain



DESCRIPTION

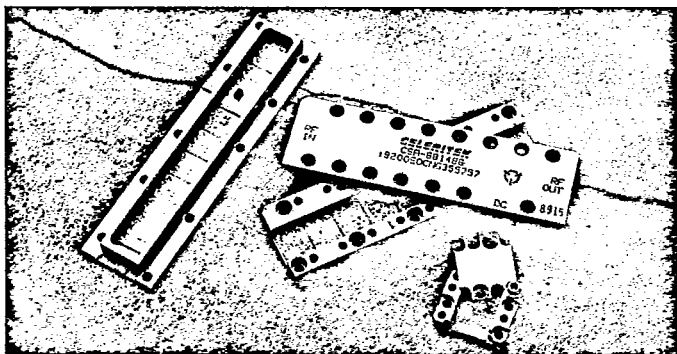
Celeritek has developed a series of standard connectorless (drop-in) amplifier gain blocks to meet customer requirements for small size and high performance.

These gain blocks are MIC-constructed so FET selection and tuning are possible to maintain performance. Designs are either balanced or feed-back.

CASES

The 240 and 400 series hermetic cases have a copper tungsten flange for improved heat sinking and thermal match to the Alumina amplifier substrate. Voltage regulators are not included in the 240 or the 400 series. 1 x 10 mil. gold ribbon is used to connect the case into the system. 240A and 400A packages are available without mounting flanges. See the package outlines on the back of this data sheet.

The 520 series case is a ceramic body with a gold-plated mounting surface and a gold-plated Kovar cover. These cases are hermetic and contain a voltage regulator. An application note is available with additional installation information.



Microwave Protected Module (MPM) package options. Hermetically sealed package (far left, shown without cover) and package with removable protective lid (two on right with lids).

OTHER CONNECTORLESS PRODUCTS

The company has developed a connectorless packaging technique —Microwave Protected Module (MPM)—to provide customers with high-performance, multi-stage amplifiers in a protected environment. The electrical performance is equal to that achieved in a connected case.

The MPM package varies depending on customer requirements. Examples are shown in the picture (below left) of the two types that are available. One provides for removal of the protective lid after installation in the user's system. The second option is a hermetically sealed package. This package is recommended for all applications, since this provides the best long-term protection for the amplifier and reduces potential damage during installation.

The company has provided many amplifiers in these configurations covering many frequency bands including 6-18 GHz. Also, MIC hybrid amplifier gain-block modules on carriers are available.

These package options are typically reserved for medium to high-volume production requirements. Contact the factory for additional information on these products.

QUALITY AND RELIABILITY

Celeritek's MIL-I-45208 inspection system and MIL-Q-9858A quality assurance program establishes and maintains product standards and workmanship practices. Screening for all standard amplifiers is based on MIL-STD-883. These amplifiers are designed and constructed to meet the testing required by MIL-E-5400 and MIL-E-6400 specifications.

CELERITEK

Connectorless (Drop-In) Amplifiers

Connectorless Drop-In Amplifiers with Guaranteed Specifications from -55°C to +90°C

Model	Frequency Response (GHz)	Gain (dB)		Gain Flatness vs Frequency (±dB)		Noise Figure (dB)		Power Output for 1dB Compression (+dBm)		3rd Order Intercept Point (+dBm)	Input (1) DC current (mA)	Case Type
		Min	Typ @25°C	Max	Typ @25°C	Min	Typ @25°C	Min	Typ @25°C	Typ	Typ	
520-4-0502	0.5-4.0	18.5	17.5	0.5	0.3	4.8	3.6	14	15	24	135	520
520-4-0503	0.5-4.0	28.0	27.0	0.7	0.5	4.5	3.4	14	15	24	185	520
520-6-2003	2-6	22.0	21.0	0.5	0.3	4.8	3.6	13	14	23	175	520
240-8-2001	2-8	9.3	11.3	0.7	0.6	5.8	5.3	12	14	20	65	240
240-8-2002	2-8	8.3	10.3	0.7	0.6	7.3	6.3	18	19	26	85	240
400-8-2001	2-8	17.7	19.7	0.7	0.6	5.8	5.3	18	19	26	130	400
400-8-2002	2-8	6.8	7.8	0.7	0.6	8.3	7.3	25	26	33	290	400
240-16-4001	4-16	4.3	4.8	0.7	0.6	7.8	7.3	19	20	27	165	240
400-16-4001	4-16	9.7	10.7	0.7	0.6	7.8	7.3	19	20	27	310	400
240-18-6001	6-18	4.8	5.8	0.7	0.6	6.8	5.8	13	15	21	65	240
240-18-6002	6-18	6.3	7.3	0.7	0.6	6.3	5.3	11	13	19	65	240
240-18-6003	6-18	4.8	5.8	0.7	0.6	7.3	6.3	17	18	25	85	240
240-18-6004	6-18	4.3	4.8	0.7	0.6	8.8	7.3	19	20	27	165	240
400-18-6001	6-18	11.7	13.7	0.7	0.6	6.8	5.8	11	13	19	130	400
400-18-6002	6-18	9.7	11.7	0.7	0.6	7.8	6.8	17	18	25	150	400
400-18-6003	6-18	9.7	11.7	0.9	0.8	7.8	7.3	19	20	27	310	400

NOTES:

1. Model 240- and 400- amplifiers do not include a voltage regulator. Use a regulated supply for testing. Input current is specified for +8 VDC. DC bias should not exceed +20 VDC.

Model 520- amplifiers incorporate a voltage regulator. Input current is specified over +12 to +18 VDC range.

2. Maximum input power without damage for all amplifiers is +20 dBm CW.

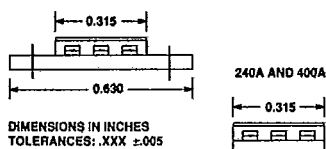
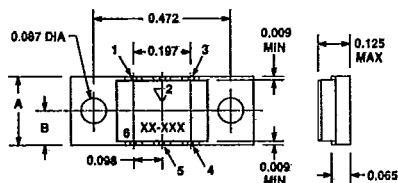
3. All specified temperatures are case temperatures. All amplifiers should be properly mounted to ensure adequate heat sinking during operation.

4. Input and output VSWRs are 2.0:1 Max for all amplifiers listed.

Package Outlines

240 and 400 Series

CONNECTION DIAGRAM
1 B+ 4 NC
2 RF IN 5 RF OUT
3 NC 6 B+
GND: CASE FLANGE

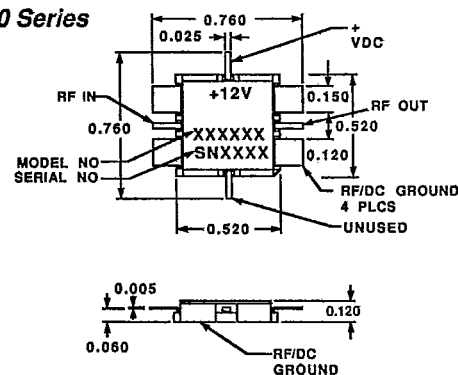


240 and 400 Series

Case Type	Dimension (inches)	
A	B	
240	0.240	0.120
400	0.400	0.200

240A and 400A packages are provided without mounting flanges.

520 Series



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