CELERITEK

Genuine
520-4-0502 } 995740
520-4-0503 } "
520-6-2003 - 995741

520-4-0500
520-6-2000

0.5-4 GHz and 2-6 GHz Amplifier in Strip Line 1/2" Square Case

- .520-Inch Square Drop-In Case
- Specifications Guaranteed from –54 to +90°C
- Excellent Temperature Coefficient for Gain per Stage
- Hermetically Sealed
- Internal Voltage Regulator
- Low Parts Count

229 orig

005357

5357 CLT

Feedback Design GaAs FET Amplifiers

The 520-4-0500 and 520-6-2000 series amplifiers all use Celeritek GaAs FETs in a thin-film feedback amplifier design. The feedback design provides a flat broadband response while maintaining excellent VSWRs. In addition, the feedback design offers about half the temperature coefficient for gain per stage compared to balanced designs.

The feedback design provides high gain per unit length. As an example, the Model 520-4-0503 offers 28 dB Min. gain in .520 inch case length.

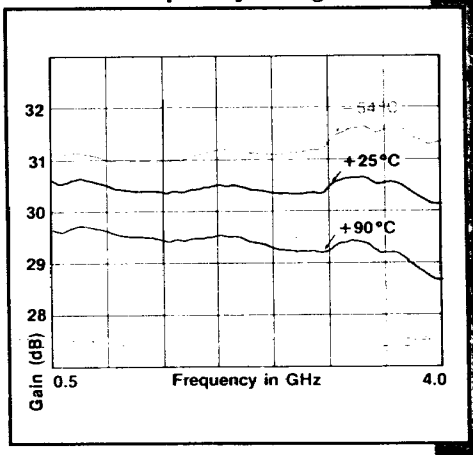
These amplifiers contain internal voltage regulation for operation from 12 to 15 VDC. The design and construction are based on military requirements. All amplifiers are hermetically sealed and 100% tested. In addition the low parts count provides a high MTBF.

Figures 1 and 2 show typical gain performance of a 520-4-0503 and 520-6-2002 over –54 to +90°C temperature range.

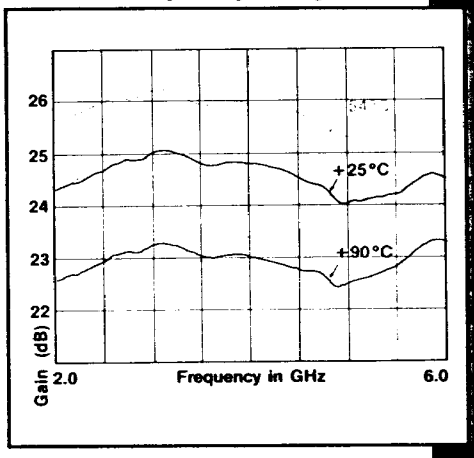
Quality and Reliability

Celeritek's MIL-I-45208 approved quality assurance and control sytem establishes and maintains product standards and workmanship practices. Quality inspectors provide the audit function needed to guarantee that all parts meet the rigid Celeritek quality standard and customer requirements. Bonding stations are calibrated every four hours in accordance with MIL-STD-883, and test and measurement equipment is calibrated in accordance with MIL-STD-45662.

520-4-0503
Gain vs. Frequency Figure 1.



520-6-2002
Gain vs. Frequency Figure 2.



520 Series
Low Noise Amplifiers with guaranteed specifications from —54 to +90°C

Model	Frequency Response (GHz)	Gain (dB)	Gain vs. Temp. at any Freq. (±dB)	Noise Figure (dB)		Power Output for 1 dB Compression (+dBm)	Gain Flatness vs. Freq. (±dBm)	3rd Order Intercept Point (+dBm)	Input DC Current @ +12V (mA)	Input DC Current @ +12V (mA)	Case Type
				+25°C							
	Min	Min	Max	Typ	Max	Min	Max	Typ	Typ	Max	
520-4-0502	0.5-4.0	18.5	1.4	3.4	4.5	14	0.5	24	135	150	520
520-4-0503	0.5-4.0	28	1.9	3.4	4.5	14	0.7	24	185	220	520
520-6-2003	2-6	22	1.5	3.6	4.8	13	0.5	23	175	210	520

Note all VSWR's are 2.0:1 Max

Quality and Reliability (continued)

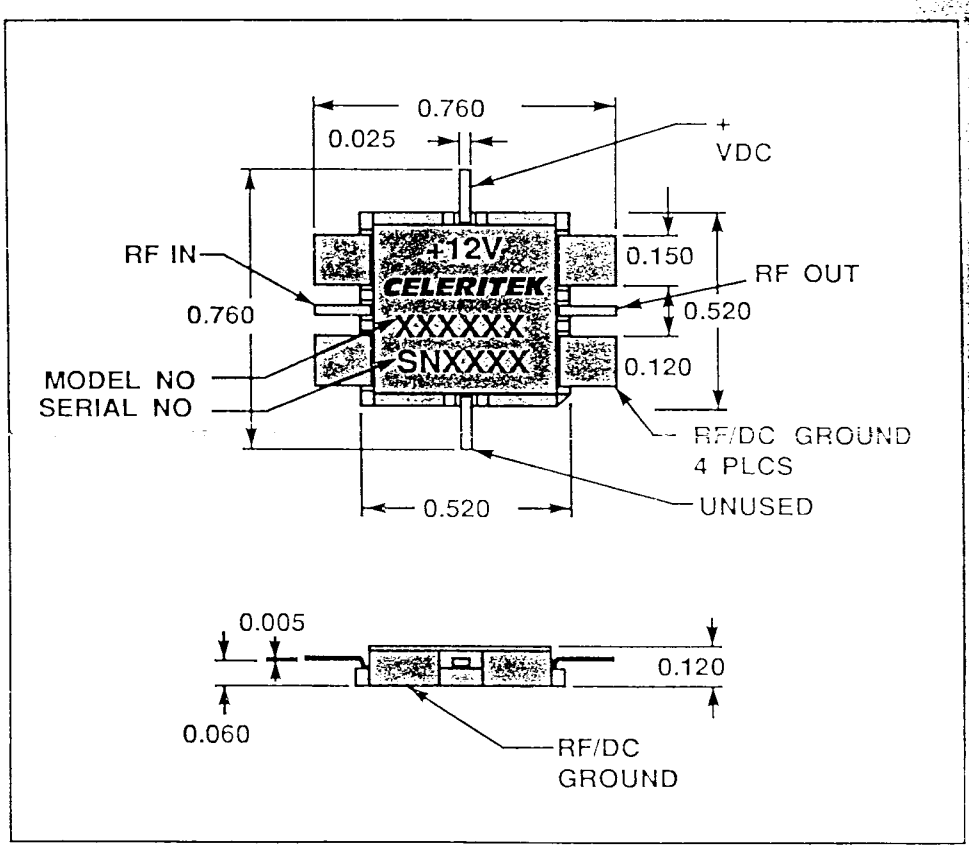
The design considerations for component derating, thermal engineering, manufacturing techniques and hermetic cases ensure that reliability is designed and manufactured into the product.

To achieve the highest level of reliability under operational conditions, all Celeritek amplifiers are screened based on MIL-STD-883 testing requirements.

520 Series Case Description

The case has gold plated solderable RF and DC leads and is compatible with stripline and microstrip circuit structures. The case should be mounted to a thermally conductive base for reliable performance over temperature.

The case is a ceramic body with a gold plated mounting surface. The cover is gold plated Kovar and the hermetic seal achieved with a high temperature gold-tin solder pre-form.



617 River Oaks Parkway
San Jose, California 95134
(408) 433-0335
Telex: 171728
FAX (408) 433-0991

CELERITEK

520-4-0500
520-6-2000

0.5-4 GHz and 2-6 GHz Amplifier in Strip Line 1/2" Square Package

4/87