

## 2.0 to 18.0 GHz Low-Noise Amplifiers

- ❑ **Frequency Coverage:**
  - 2-18 GHz      6-13 GHz
  - 6-18 GHz      8-18 GHz
- ❑ **6.0-18.0 GHz, 3.8 dB Noise Figure @ 25°C**
- ❑ **6.0-13.0 GHz, 3.2 dB Noise Figure @ 25°C**
- ❑ **Temperature Compensation**
- ❑ **MIL-STD-883 Screening**
- ❑ **MIL-Q-9858A Quality**

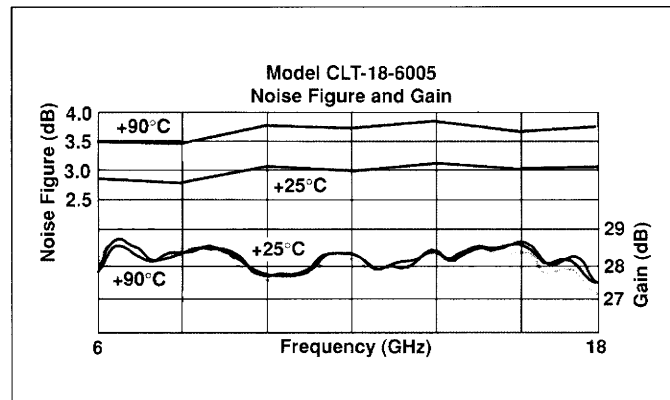
### DESCRIPTION

Celeritek amplifiers are balanced designs—except the 2.0-18.0 GHz which is a distributed design—and are manufactured with MIC technology. The GaAs FETs used in these amplifiers are produced in Celeritek's foundry. These products are offered in four types for specific applications:

- CLA = Low Noise @ +25°C
- CLT = Low Noise @ -54°C to +90°C
- CMA = Standard Amplifier @ +25°C
- CMT = Standard Amplifier @ -54°C to +90°C

### IMPROVED PERFORMANCE

The specification table shows excellent noise figures for both CLA and CLT model amplifiers. These noise figures can be improved for narrow-band applications where required.



### OTHER CAPABILITIES

Celeritek also offers other functions for amplifiers in this frequency range such as: phase and gain matching, input limiters, output limiters and log amplifiers. See the specification sheet on Celeritek's connectorless (drop-in) packages for amplifiers in this frequency range. In addition, Celeritek manufactures amplifiers from 0.5-8.0 GHz and 18-40 GHz.

### 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 Celeritek's standard amplifiers is based on MIL-STD-883. These amplifiers are designed and constructed to meet the testing required of MIL-E-5400 and MIL-E-6400 specifications.

| Model                                                                   | Frequency Response (GHz) | Gain (dB) | Gain versus Temperature at any Frequency (±dB) | Noise Figure (dB) | Power Out-put for 1dB Compression (+dBm) | Gain Flatness vs Freq (±dB) | 3rd Order Intercept Point (+dBm) | Input (1) DC current @ +12V (mA) | Case Type |     |
|-------------------------------------------------------------------------|--------------------------|-----------|------------------------------------------------|-------------------|------------------------------------------|-----------------------------|----------------------------------|----------------------------------|-----------|-----|
|                                                                         | Min                      | Min       | Max                                            | Max               | Min                                      | Max                         | Typ                              | Typ                              | Max       |     |
| Low-Noise Amplifiers with Guaranteed Specifications from -54°C to +90°C |                          |           |                                                |                   |                                          |                             |                                  |                                  |           |     |
| CLT-18-2002                                                             | 2-18                     | 16        | 0.50                                           | 8.0               | 12                                       | 1.5                         | 19                               | 170                              | 200       | SX4 |
| CLT-18-2004                                                             | 2-18                     | 30        | 1.00                                           | 7.0               | 12                                       | 2.0                         | 19                               | 270                              | 300       | SX4 |
| CLT-13-6013                                                             | 6-13                     | 24        | 1.25                                           | 4.2               | 14                                       | 1.0                         | 27                               | 240                              | 270       | SX4 |
| CLT-13-6014                                                             | 6-13                     | 30        | 1.25                                           | 3.9               | 18                                       | 1.0                         | 27                               | 316                              | 350       | SX6 |
| CLT-13-6015                                                             | 6-13                     | 38        | 1.50                                           | 3.9               | 18                                       | 1.5                         | 27                               | 350                              | 400       | SX6 |
| CLT-13-6016                                                             | 6-13                     | 45        | 1.75                                           | 3.9               | 18                                       | 1.5                         | 27                               | 450                              | 510       | SX8 |
| CLT-18-6004                                                             | 6-18                     | 21        | 1.25                                           | 4.5               | 12                                       | 1.5                         | 18                               | 310                              | 360       | SX4 |
| CLT-18-6005                                                             | 6-18                     | 26        | 1.50                                           | 4.5               | 14                                       | 1.5                         | 20                               | 380                              | 430       | SX6 |
| CLT-18-6006                                                             | 6-18                     | 31        | 1.75                                           | 4.5               | 18                                       | 2.0                         | 20                               | 450                              | 510       | SX6 |
| CLT-18-6007                                                             | 6-18                     | 36        | 2.00                                           | 4.5               | 18                                       | 2.0                         | 23                               | 520                              | 590       | SX8 |
| Low-Noise Amplifiers with Guaranteed Specifications at +25°C            |                          |           |                                                |                   |                                          |                             |                                  |                                  |           |     |
| CLA-18-2002                                                             | 2-18                     | 17        | -                                              | 6.0               | 10                                       | 1.0                         | 17                               | 110                              | 120       | SX2 |
| CLA-18-2003                                                             | 2-18                     | 28        | -                                              | 6.0               | 12                                       | 1.5                         | 14                               | 210                              | 230       | SX4 |
| CLA-13-6012                                                             | 6-13                     | 18        | -                                              | 3.2               | 14                                       | 1.0                         | 27                               | 130                              | 160       | SX4 |
| CLA-13-6013                                                             | 6-13                     | 25        | -                                              | 3.2               | 18                                       | 1.0                         | 27                               | 210                              | 240       | SX4 |
| CLA-13-6014                                                             | 6-13                     | 34        | -                                              | 3.2               | 18                                       | 1.5                         | 27                               | 280                              | 320       | SX4 |
| CLA-13-6015                                                             | 6-13                     | 43        | -                                              | 3.2               | 18                                       | 1.5                         | 27                               | 350                              | 400       | SX6 |
| CLA-18-6004                                                             | 6-18                     | 21        | -                                              | 3.8               | 16                                       | 1.5                         | 18                               | 280                              | 320       | SX4 |
| CLA-18-6005                                                             | 6-18                     | 26        | -                                              | 3.8               | 18                                       | 1.5                         | 20                               | 350                              | 400       | SX6 |
| CLA-18-6006                                                             | 6-18                     | 31        | -                                              | 3.8               | 18                                       | 2.0                         | 20                               | 420                              | 480       | SX6 |
| CLA-18-6007                                                             | 6-18                     | 36        | -                                              | 3.8               | 18                                       | 2.0                         | 23                               | 490                              | 560       | SX8 |

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