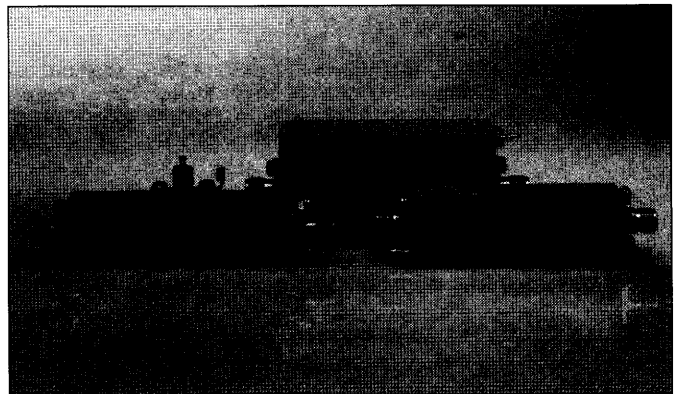


2.0 to 8.0 GHz Power Amplifiers

- ❑ **Frequency Coverage:**
 - 2-4 GHz 2-6 GHz
 - 2-8 GHz 4-8 GHz
- ❑ **2.0-8.0 GHz, 1 Watt P₀⁻¹ dB**
- ❑ **Temperature Compensation**
- ❑ **MIL-STD-883 Screening**
- ❑ **MIL-Q-9858A Quality**



DESCRIPTION

Celeritek amplifiers are balanced amplifier designs and manufactured with MIC technology. The GaAs FETs used in these amplifiers are produced in Celeritek's foundry. These products are offered in two types for specific applications:

- CPA = Power Amplifiers @ +25°C
- CPT = Power Amplifiers @ -54°C to +90°C

IMPROVED PERFORMANCE

The specification table shows excellent power output in the 2-8 GHz frequency band. This power performance can be optimized for narrower bandwidth requirements.

THERMAL DESIGN FOR RELIABILITY

Specific care is taken in the thermal design of all

components, but in particular, power amplifiers. GaAs FETs are mounted on copper ribs and DC components are mounted on silicon sub-strates to provide improved heat sinking. Celeritek has developed proprietary techniques for mapping thermal profiles of FETs mounted on circuits to ensure proper die attach prior to sealing.

QUALITY AND RELIABILITY

Celeritek's MIL-I-45208 inspection systems 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 Output 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 | |
| Power Amplifiers with Guaranteed Specifications from -54°C to +90°C | | | | | | | | | | |
| CPT-4-2002 | 2-4 | 19 | 0.75 | 6.5 | 23 | 1.00 | 32 | 260 | 330 | SC4 |
| CPT-4-2003 | 2-4 | 30 | 1.00 | 5.5 | 23 | 1.25 | 32 | 320 | 390 | SC4 |
| CPT-4-2004 | 2-4 | 41 | 1.25 | 5.5 | 23 | 1.50 | 32 | 380 | 450 | SC6 |
| CPT-6-2002 | 2-6 | 19 | 0.75 | 6.5 | 23 | 1.00 | 32 | 260 | 330 | SC4 |
| CPT-6-2003 | 2-6 | 30 | 1.00 | 5.5 | 23 | 1.25 | 32 | 320 | 390 | SC4 |
| CPT-6-2004 | 2-6 | 41 | 1.25 | 5.5 | 23 | 1.50 | 32 | 380 | 450 | SC6 |
| CPT-8-2002 | 2-8 | 16 | 0.75 | 7.0 | 23 | 1.25 | 32 | 280 | 350 | SC4 |
| CPT-8-2003 | 2-8 | 26 | 1.00 | 6.5 | 23 | 1.50 | 32 | 340 | 390 | SC4 |
| CPT-8-2004 | 2-8 | 36 | 1.25 | 5.5 | 23 | 1.50 | 32 | 390 | 450 | SC6 |
| CPT-8-2013 | 2-8 | 22 | 0.75 | 12.0 | 27 | 1.25 | 34 | 700 | 800 | PCEL6 |
| CPT-8-2014 | 2-8 | 32 | 1.00 | 10.0 | 27 | 1.50 | 34 | 800 | 900 | PCEL6 |
| CPT-8-2015 | 2-8 | 42 | 1.25 | 8.0 | 27 | 1.75 | 34 | 950 | 1050 | PCEL6 |
| CPT-8-2024 | 2-8 | 22 | 1.25 | 12.0 | 30 | 1.50 | 36 | 2050 | 2350 | HPX8 |
| CPT-8-2025 | 2-8 | 32 | 1.50 | 9.5 | 30 | 1.75 | 36 | 2200 | 2500 | HPX8 |
| CPT-8-2026 | 2-8 | 42 | 1.50 | 6.5 | 30 | 1.75 | 36 | 2250 | 2550 | HPX8 |
| CPT-8-2027 | 2-8 | 52 | 1.75 | 6.5 | 30 | 2.00 | 36 | 2300 | 2600 | HPX8 |
| CPT-8-4002 | 4-8 | 18 | 0.75 | 7.0 | 23 | 1.00 | 32 | 260 | 330 | SC4 |
| CPT-8-4003 | 4-8 | 28 | 1.00 | 6.5 | 23 | 1.00 | 32 | 320 | 370 | SC4 |
| CPT-8-4004 | 4-8 | 38 | 1.25 | 5.5 | 23 | 1.50 | 32 | 400 | 475 | SC6 |

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