

Ultra-broadband Spatially Combined Power Amplifier

CHPA0618-1



The CAP Wireless CHPA0618-1 ultra-broadband power amplifier incorporates gallium arsenide (GaAs) monolithic microwave integrated circuit (MMIC) technology into its revolutionary, patented (#7215220) Spatium™ broadband spatial combining technology to achieve outstanding solid state power levels across an extended 6-18 GHz frequency range. This compact, affordable, reliable alternative to traveling wave tube amplifiers (TWTAs) is uniquely positioned to meet the demanding specifications of applications such as electronic counter measures (ECM), laboratory instrumentation, and electromagnetic compatibility/electromagnetic interference (EMC/EMI) test, as well as narrower band applications like radar, microwave imaging, and satellite communications. The multiple element architecture provides protection from single point failures and facilitates even, dispersive, three-dimensional (3D) heat dissipation.

Typical Applications

- Electronic warfare
- TWTA replacement
- Multi-band communication
- Tri-band satellite communications
- Instrumentation and test equipment

Key Features

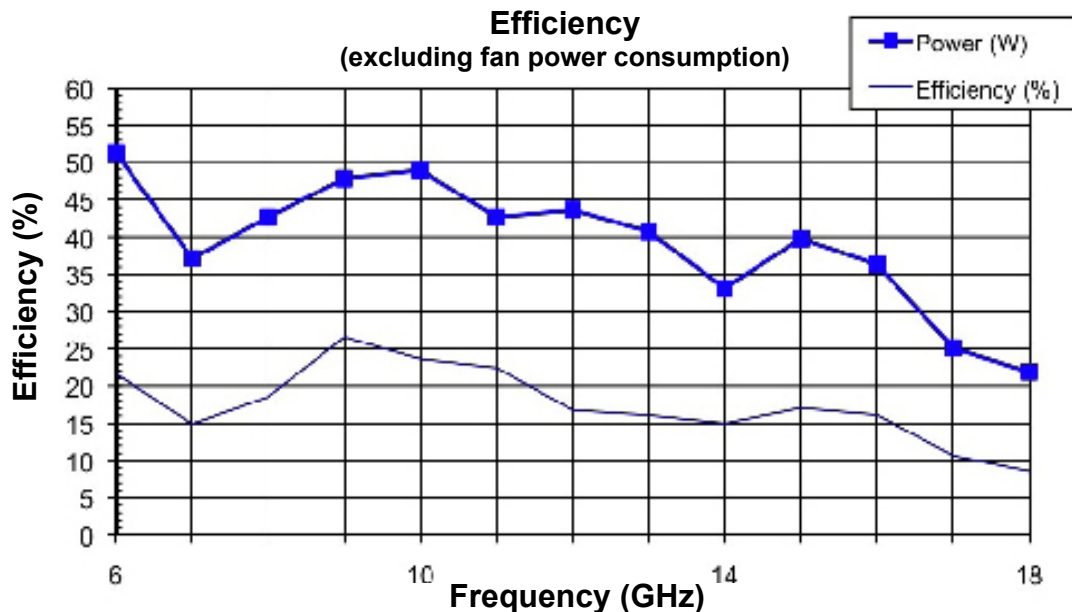
- Ultra-broad 5.85-18.4 GHz bandwidth
- 40 watts typical saturated power
- Exceptional reliability and MTBF
- Graceful degradation (soft-fail) in the event of device failure
- Low voltage primary power
- Low intermodulation and harmonic distortion
- Flat gain without equalization
- Low noise figure
- Low phase noise and spurious
- Infinite load VSWR without damage
- No warm-up or turn-on delay
- Unlimited altitude

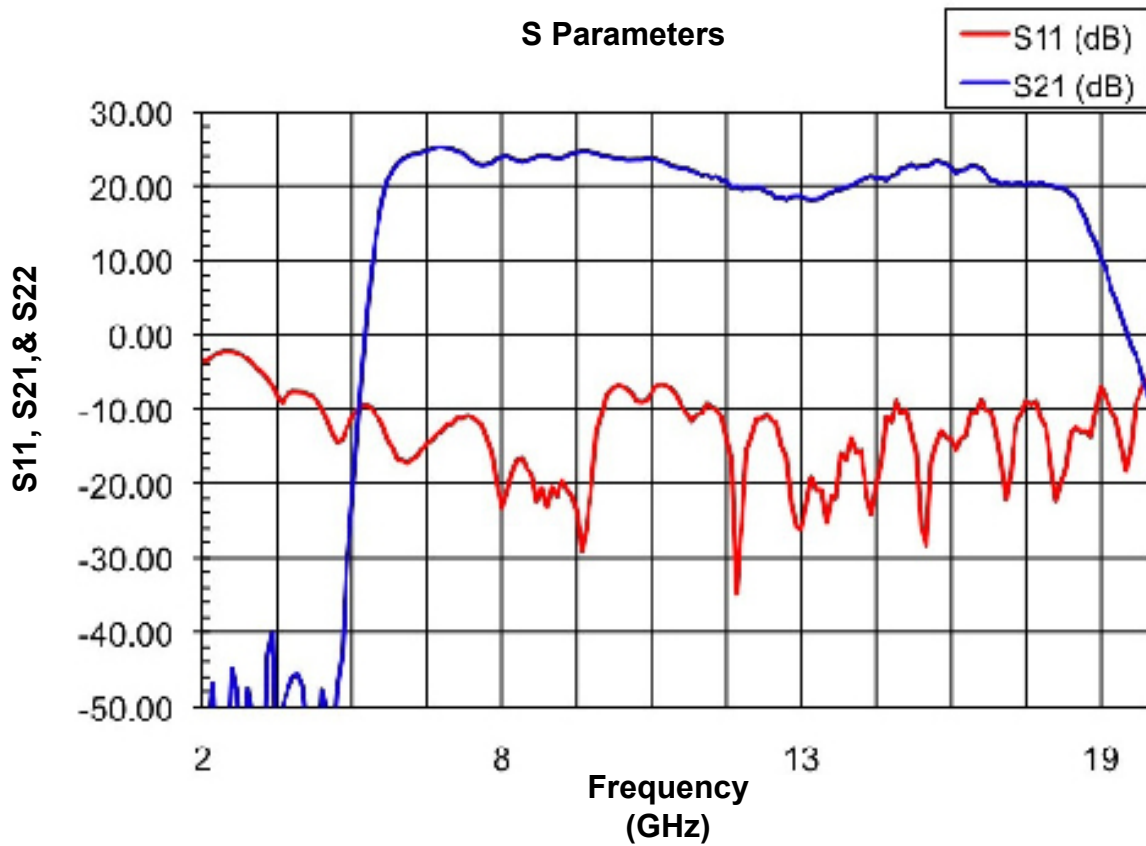
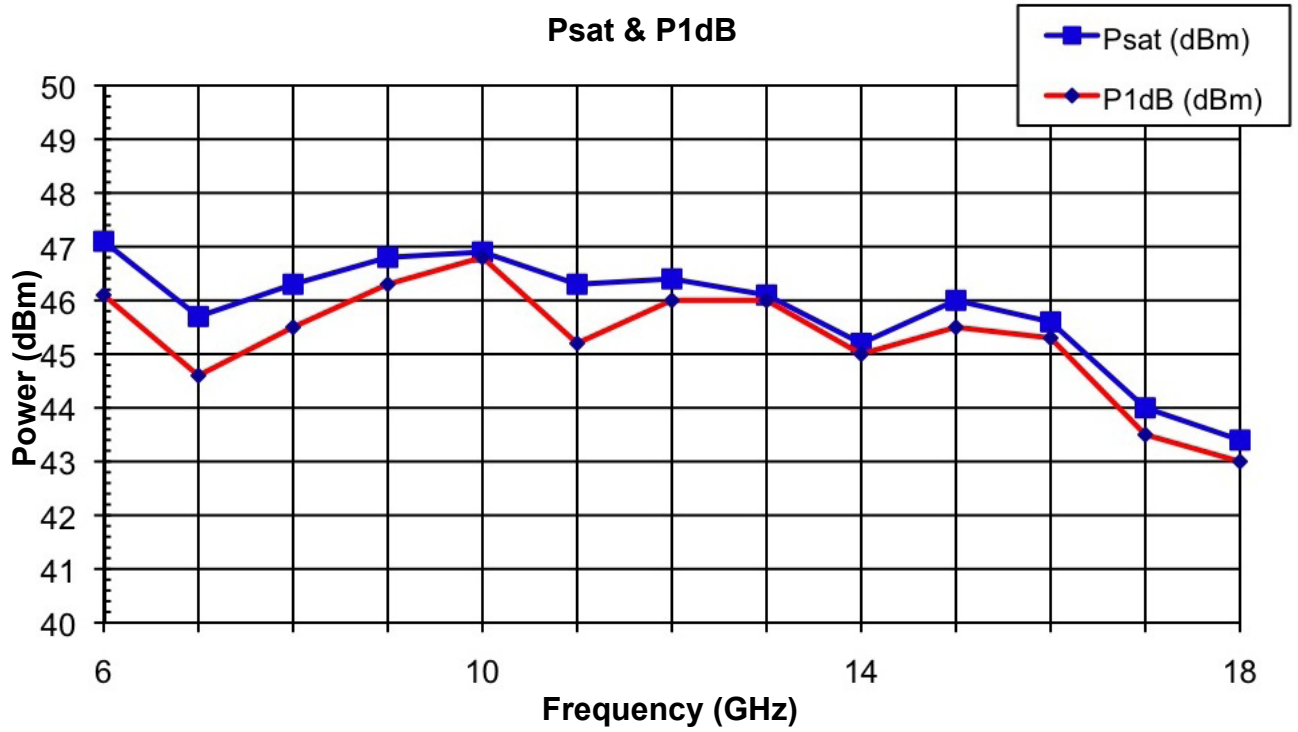
| Electrical Parameters | Units | Min. | Typ. | Max. |
|--------------------------------------|-----------------------|-----------------|---|-----------------|
| @ 9.5 V, 25°C ambient | | | | |
| Frequency | GHz | 6 | | 18 |
| Gain | dB | | 23 | |
| Gain variation 6-18 GHz | ±dB | | 3 | 4 |
| Gain variation, over operating temp. | ±dB | | | |
| Input VSWR (50 ohms) | | | 2.0:1 | |
| Output VSWR (50 ohms) | | | 2.5:1 | |
| Efficiency | % | | 15 | |
| Output Power, saturated | watts | | 35 | |
| Output power, 1 dB compressed | watts | | 30 | |
| Spurious | dBc | | | |
| Current | amps | | 20 ¹ | 28 ² |
| Voltage | volts | 9 | | 10 |
| Environmental Parameters | | | | |
| Temperature, operating | °C | 0 | | 50 |
| Temperature, storage | °C | -20 | | 85 |
| Cooling | Fan forced convection | | | |
| Altitude, operating | K feet | | 50 | |
| Physical Parameters | | | | |
| Dimensions | in. | 17.08x9.93x5.81 | | |
| RF connectors in/out | | | SMA (F) | |
| DC connectors | | | DA15 Male (Pin) | |
| DC Pin Configuration | | 1-6 | +9.5 VDC | |
| | | 8 | Module fault out (TTL high indicates fault) | |
| | | 9-14 | Return | |

¹Quiescent

²@Max pout

Typical Performance Data





Outline

