



# RF Amplifier Data Sheet

## BT-AlphaS series

### 100kHz - 30MHz

### 50W/100W/250W/500W

- Ultrasound
- Plasma
- CW Radar
- Test & Measurement



The BT-AlphaS-CW series is a range of class AB RF power amplifiers covering the 100kHz to 30MHz frequency range

- Excellent phase and amplitude stability
- Rugged, reliable, modular solid-state design
- High linearity
- In-built protection
- Very fast blanking
- Capable of pulsed operation

Suitable for CW radar, communications, HF/VHF jamming, particle accelerator/ plasma systems, plasma, RF heating and other scientific applications.

BT-AlphaS series	
Model numbers	BT00050-AlphaS-CW/BT00100-AlphaS-CW/ BT00250-AlphaS-CW/BT00500-AlphaS-CW
Modulation types	Faithfully reproduces all types of modulation including FM, AM, PM, pulses <sup>1</sup>
Rated CW power	50W/100W/250W/500W minimum <sup>2</sup>
P1dB	40W/80W/200W/400W minimum <sup>3</sup>
Type	Class AB MOSFET
Frequency	100kHz-30MHz <sup>4</sup>
Gain flatness	±1.5dB maximum
Pulse droop	0.5dB maximum <sup>5</sup>
Pulse rise and fall times	100ns typical using a pre-gate RF input signal
Gate delay	Rising edge: 2µs typical    Falling edge: 1µs typical <sup>6</sup>
Harmonics	Odd: -20dBc typ, -10dBc max. Even:-30dBc typ, -20dBc max.
Spurious	<-60dBc maximum
3rd order intermod products	Better than -35dB (two tones of 5W/10W/25W/50W each)
Output noise (blanked)	<10dB above thermal
Output sample	-50dB into 50Ω (forward voltage sample)
Input/output impedance	50 Ω nominal
Load SWR	Tolerates at least 3:1 @ full rated power without foldback <sup>7</sup>
Remote interface	Parallel status monitoring via 25 pin D connector <sup>8</sup>
Connectors	RF output: N type                      RF input, gate, sample:BNC <sup>9</sup>
Cooling	Forced air, front to rear
Indicators	DC Power, Output Enable, RF Power, Over-temp, Over-duty, Load mismatch
Gain control range	10dB minimum for 0-5V control voltage
Input signals	RF drive: 0dBm    RF GATE: CMOS/TTL High=Tx
Physical	19" Wx 500mmD x 133mmH (3RU x 19" rack mounting),18kg/22kg/25kg
Mains power	110-240V,50-60Hz,single phase, 250VA/500VA/750VA/1.5kVA max. <sup>10</sup>
Operating temperature	0 to +50°C
Compliance	CE

1. Includes high speed gating and noise blanking for pulsed operation  
2. RMS PEP for input power of 1mW  
3. Minimum output power at 1dB gain compression  
4. The amp provides useful power outside this range, but performance is not guaranteed  
5. Measured at 100ms pulse width at nominal P1dB level  
6. Rising edge measured from rising edge of GATE pulse to 90% RF output voltage. Falling edge measured from falling edge of GATE pulse to 10% RF output voltage  
7. Self resetting foldback protection reduces the amplifier gain if the load SWR is excessive  
8. Pin out at [www.tomcorf.com/pdf/interface.pdf](http://www.tomcorf.com/pdf/interface.pdf)  
9. Other connector types available on request  
10. 3-pin IEC. Mains supply must include an earth

