

型号: BT00500-AlphaSA
频率: 0.5MHz-150MHz
功率: 500W

• 科学和工业应用



BT-AlphaSA 系列是涵盖 500kHz 至 150MHz 频率范围的 AB 类射频功率放大器系列。

- 坚固的固态设计 - 高可靠性
- 极高的相位和幅度稳定性
- 非常快的脉冲上升/下降时间
- 高线性度
- 非常低的脉冲间噪声
- 具有竞争力的价格

RF Specifications

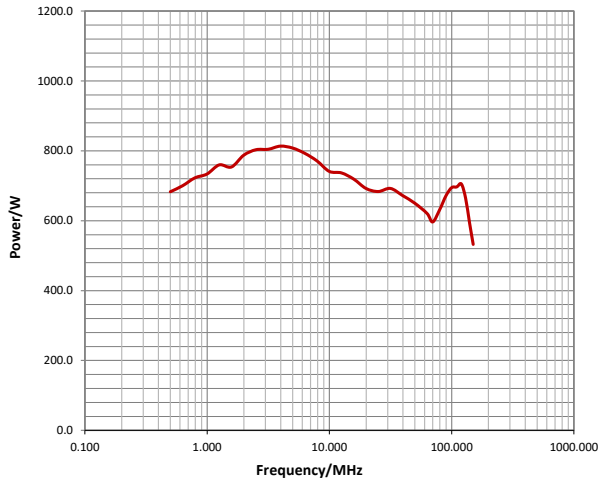
类型	Class AB MOSFET
额定功率	500W minimum PEP for input power of 0dBm
P1dB	400W minimum Minimum output power at P1dB compression
增益	57dB minimum
频率	0.5MHz-150MHz
增益平稳度	±1.5dB maximum (measured at 1/10th rated output power)
最大占空比	20% Maximum GATE duty cycle
最大脉冲宽度	100ms Maximum GATE pulse width
CW模式下的额定功率	50W CW operation is automatically available at output power level less than approx. 10% of full rated power
脉冲下降	0.5dB maximum Measured at max. pulse width at P1dB level
脉冲上升和下降时间	Risetime: 200ns typical Falltime: 100ns typical using a pre-gated RF input signal
门上升和下降时间	Risetime: 300ns typical Falltime: 150ns typical
门延迟	Rising edge: 1μs typical Falling edge: 500ns typical 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
谐波	Odd: -20dBc typical, -10dBc maximum Even: -30dBc typical, -20dBc maximum Measured at 1dB below rated output power
杂散	<-70dBc maximum
输出噪声（消隐）	<10dB above thermal (100kHz bandwidth)
相变/功率	<10° from -40dB to full power
相位稳定性	<1° across 100ms pulse
输出样本	-50dB into 50 Ω (forward voltage sample)
输出样本	50 Ω nominal
负载驻波比	Tolerates at least 3:1 @ full rated power without shut down
增益控制范围	10dB minimum for 0-5V control voltage Control via parallel interface
射频输入	0dBm nominal, 10dBm for no damage
门（消隐）	Logic low = Blank, logic high = unblank. CMOS and TTL compatible

电气规格

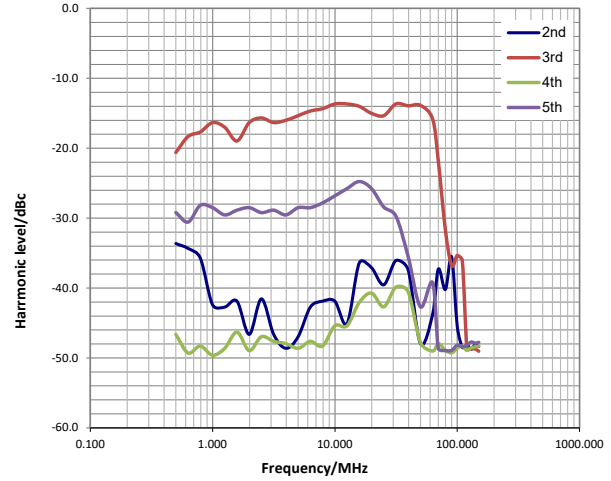
电源电压	110-240V, 50-60Hz, single phase
额定功率	2kVA maximum
电源入口	1 x IEC inlet (mains power cord supplied)

Typical Performance Plots

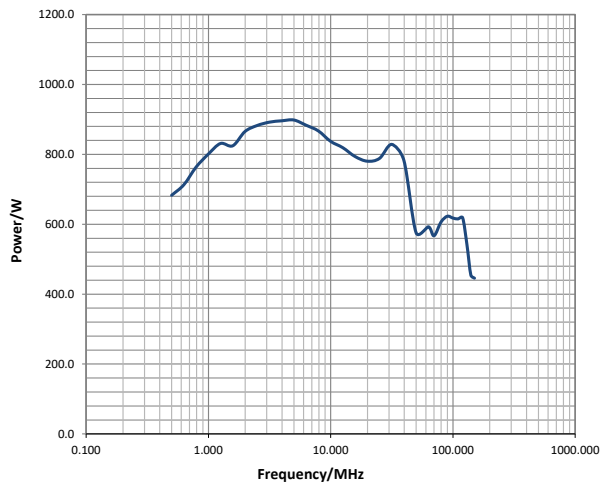
Peak output power for 0dBm RF drive



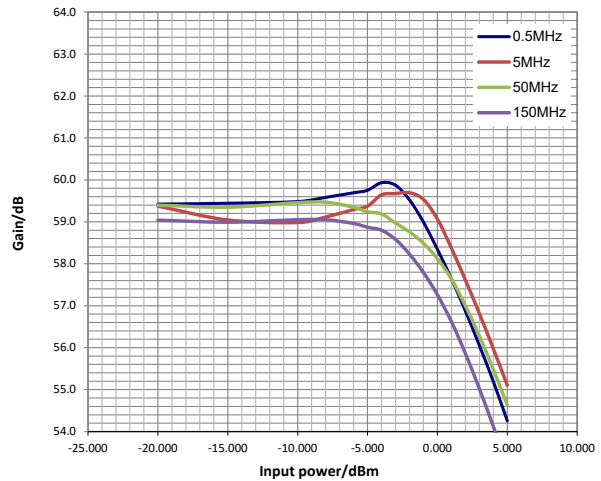
Harmonics



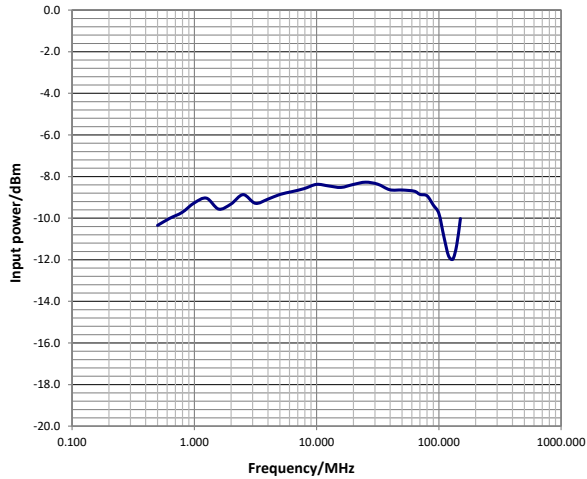
Peak output power at 1dB compression



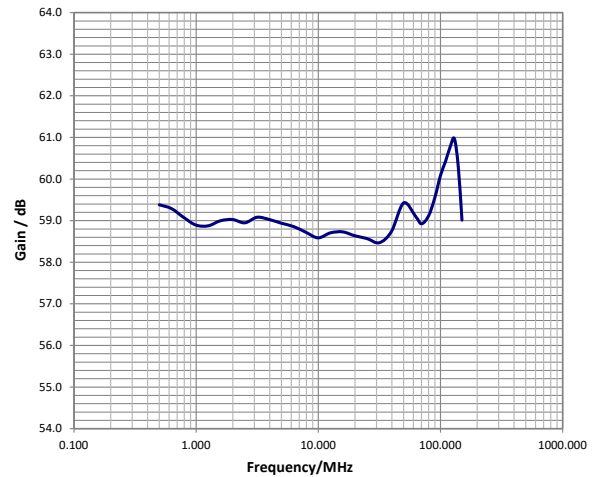
Gain as a function of input power



Maximum input power for auto-CW operation

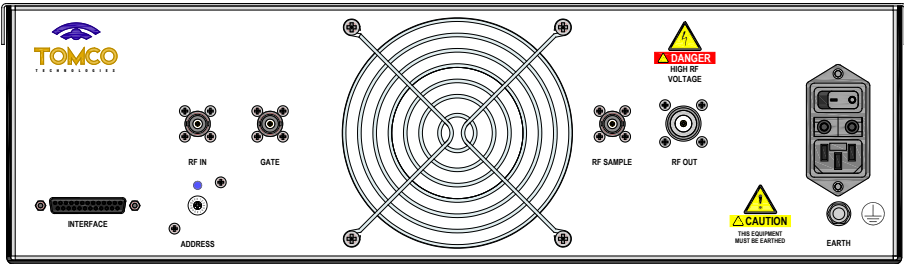
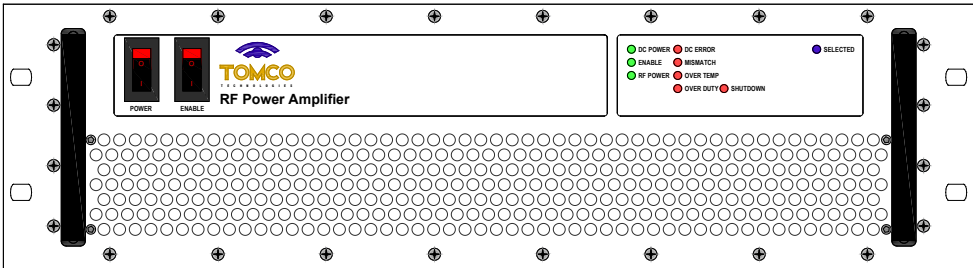
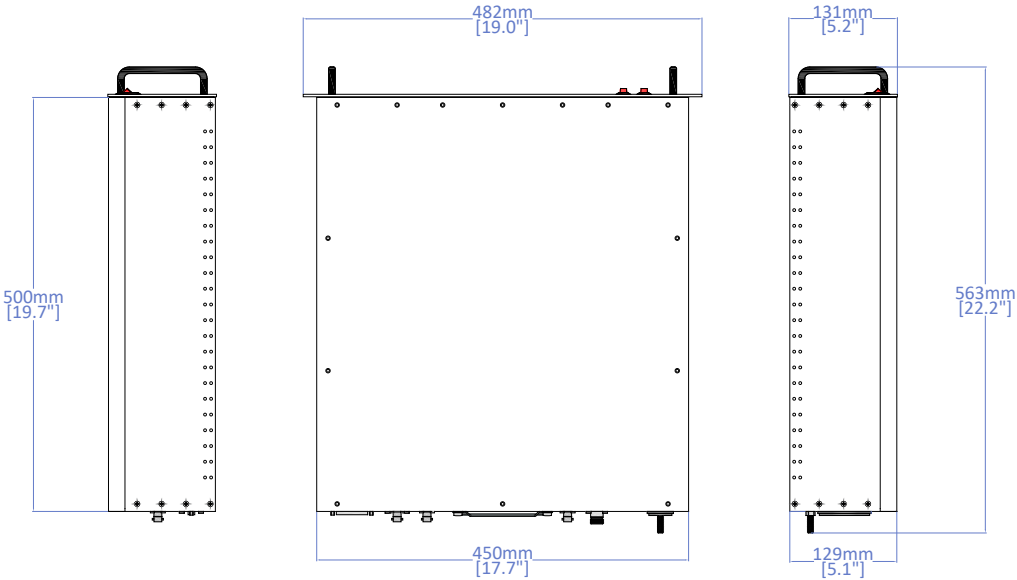


Small signal gain measured at 10% of maximum rated power



Mechanical Specifications

连接器	RF IN: BNC female GATE: BNC female RF SAMPLE: BNC female RF OUT: N type female INTERFACE: DB25 female Other connectors types available on request
尺寸	Chassis size: 450mmW (17.7"W) x 500mmD (19.7"D) x 129mmH (5.1"H) Total size: 482mmW (19"W) x 563mm (22.2"D) x 131mm (5.2"H) Rack compatibility: 19" 3RU
重量	approx. 17kg (38lbs)
防护等级	IP20

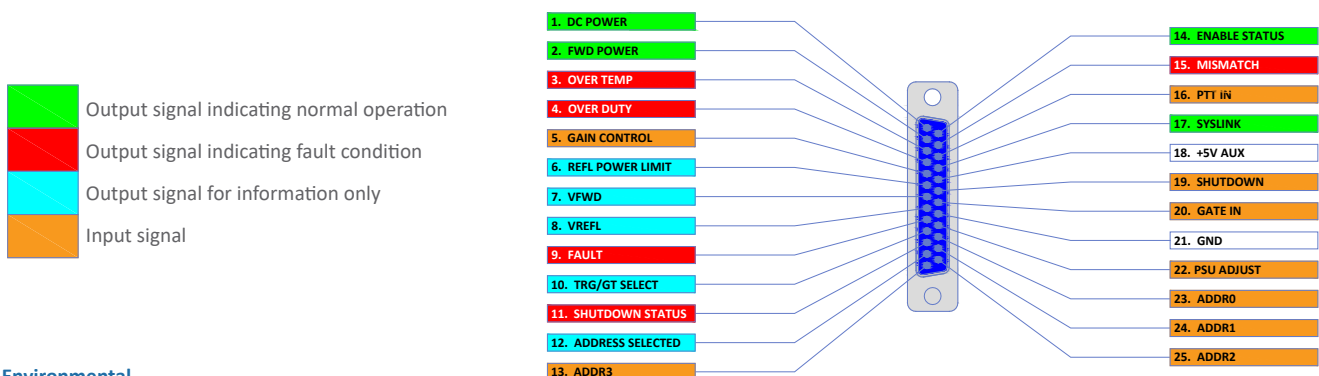


保护

负载驻波比	Tolerates up to VSWR 3:1 at full rated power without shutdown Self-resetting shutdown protection activates if VSWR limits are exceeded
过温	Self-resetting shutdown protection activates if thermal limits are exceeded
占空比	Duty cycle limit is determined from the GATE signal duty cycle. Self-resetting shutdown protection activates if duty cycle limit is exceeded If output power is less than approx. 10% of maximum rated power, duty cycle protection is disabled and auto-CW operation is available
脉冲宽度	Pulse width limit is determined from the GATE signal pulse width. Self-resetting shutdown protection activates if pulse width limit is exceeded

Monitoring and Control

Front panel switches	Power (turns on DC power) Enable (enables RF)
Front panel LEDs	- DC POWER - ENABLE - RF POWER - DC ERROR - MISMATCH - OVER TEMP - OVER DUTY - SELECTED - SHUTDOWN
Parallel interface	25-pin D-connector (pinout available at www.tomcorf.com/pdf/interface.pdf)*



*Some functions may be unavailable on select amplifier models

Environmental

General	Intended for use only in controlled, indoor environment. Non-consumer product for industrial and scientific use. This product is not authorised for stand-alone on-air use. Additional systems, hardware and considerations are required to meet local spectral management regulations. Compliance of the final complete system is the responsibility of the end user.
Cooling	Forced air, front to rear
Operating temperature	+5°C to +40°C
Storage temperature	-20°C to +60°C
Humidity	80% for temperature up to 31°C, decreasing linearly to 50% relative humidity at 40°C
Operating altitude	Up to 2000m
Pollution degree	2
Transient voltage compatibility	Category II, in line with IEC 60364-4-44:2007
Electromagnetic compatibility	In line with IEC61326-1:2012 ISM equipment, Group 1, Class A For use only in shielded areas. ENC55011 (CISPR 11) limits exceeded by up to 40dB
Safety	In line with IEC61010-1:2010
Electromagnetic field strength	In line with ICNIRP Guidelines: 1998, occupational limits

Change record

Document/Issue number	Originator	Date	Change
DS006675A	JR	18/07/2018	Original
DS006675B	LS	06/05/2020	p.4:E
DS006675C	DW	10/09/2020	p.1:RFS
DS006675D	LS	12/01/2021	p.1:H
DS006675E	TD	8/12/2022	p.4:E