

Solid State Broadband High Power Amplifier

1022 - BBM3I4AN4
400 - 1000MHz / 200Watts

The BBM3I4AN4 (SKU # 1022) is suitable for broadband and TV band high power linear applications. This amplifier utilizes push-pull LD MOS power devices that provide high gain, wide dynamic range, low distortions and good linearity. Exceptional performance, long term reliability and high efficiency are achieved by employing advanced broadband RF matching networks and combining techniques, EMI/RFI filters, machined housings and qualified components. Empower RF's ISO9001 Quality Assurance Program assures consistent performance and the highest reliability.



- Solid-state Class AB linear design
- Instantaneous broadband
- Small and lightweight
- Suitable for all modulation types
- 50 Ohm Input/Output impedance
- Built-in control and monitoring circuits
- High reliability and ruggedness

ELECTRICAL SPECIFICATIONS @ +28VDC, 25°C, 50Ω System

Parameter	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	400		1000	MHz
Power Output CW	P _{SAT}	200	220		Watt
Power Output @ 1dB G.C.P	P _{1dB}		150		Watt
Power Gain @ 1dB G.C.P	G _{1dB}	10	13		dB
Input Power for Rated Output	P _{IN}		10		Watt
Gain Flatness	ΔG		±1.0	±1.5	dB
Input Return Loss	S11			-10	dB
Harmonics @ P1dB G.C.P.	H		-25		dBc
Third Order Intercept Point 2-Tone IMD, 44dBm/Tone, Δ = 100KHz	IP3		+61		dBm
Spurious Signals	Spur		-70	-60	dBc
Operating Voltage	VDC	24	28	32	Volt
Supply Current @ 200W	IDD			20	Amp

ENVIRONMENTAL CHARACTERISTICS

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	T _c	0		+50	°C
Storage Temperature	T _{stg}	-40		+85	°C
Relative humidity w/o condensation	RH	95			%
Altitude	ALT	10,000	30,000		ft.
Shock / Vibration	SH / VI		Airborne		

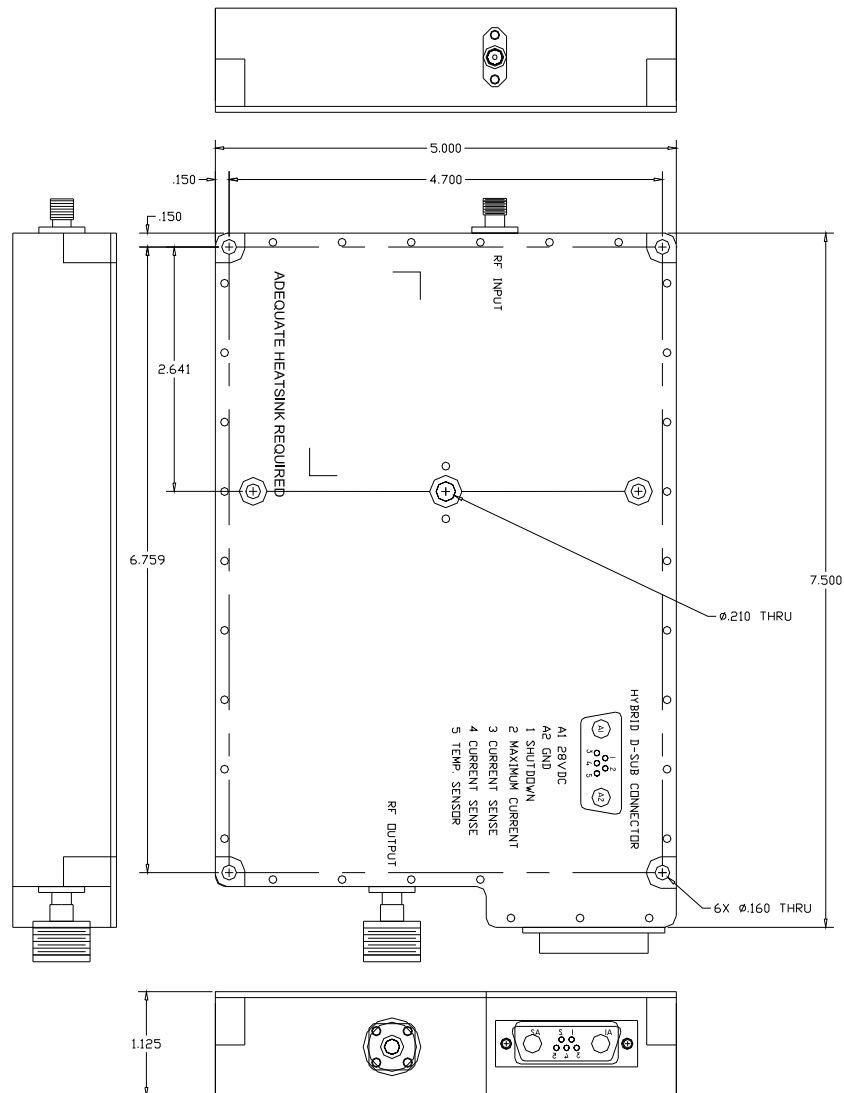
MECHANICAL SPECIFICATIONS

Parameter	Value	Units	Limits
Dimensions	7.5 x 5.0 x 1.13	Inch	Max
Weight without	3.5	lb.	Max
RF Connectors In/Out	SMA Female / N-Type Female		
DC / Interface Connector	Hybrid D-Sub 7 Pin		
Cooling	External Heatsink		

PROTECTIONS

Load VSWR @ rated P1dB	Ψ	Infinite @ all load phase & amplitude	Nom
Thermal Overload	T _{OD}	85°C shutdown	Max

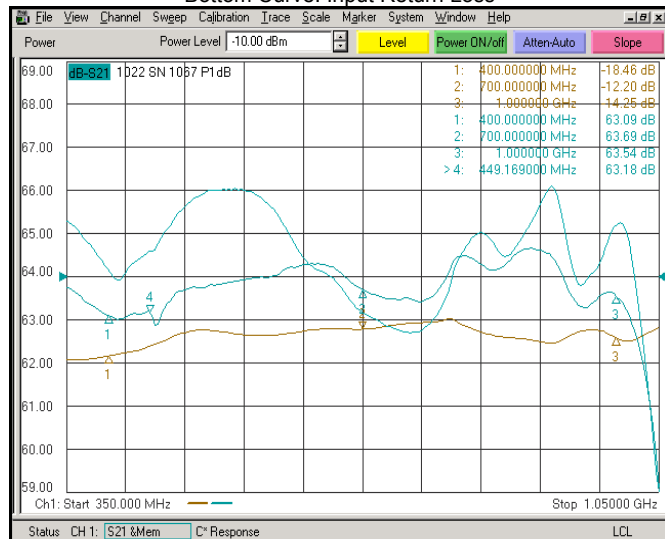
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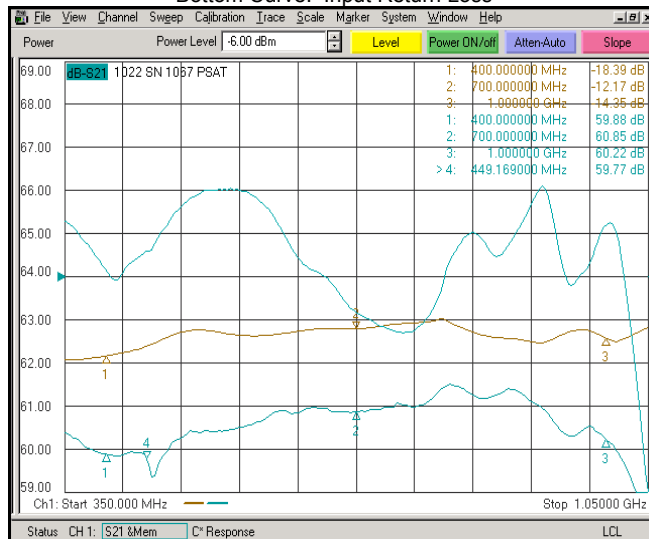
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OUTLINE DRAWING

INTERFACE CONNECTOR – Hybrid D-Sub, 7-Pin

Pin #	Description	Specifications	Record	Value	P/F
A1	VDD	28VDC		-	P
A2	Ground	GND		-	P
1	Shutdown	Enable: TTL "Low" Disable: TTL "High"	I Enable (A) I Disable (mA)	1.47 120	P
2	Max Current	Record Voltage	Vmax (VDC)	1.91	P
3	Current Sense 1	Record Voltage (Must be 2.5VDC @ Nominal Consumption)	VID1 (VDC)	1.96	P
4	Current Sense 2	Record Voltage (Pins 3 and 4 voltages need to be the same).	VID2 (VDC)	1.86	P
5	Temp Sensor	Record Voltage	Vtemp (VDC)	.41	P

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TYPICAL PERFORMANCE PLOTS
Plot 1 - Gain @ P1dB with Driver

 Top Curve: Power Gain @ Pin = -20dBm
 Middle curve: Power Gain @ P1dB, Pin = -10.0dBm
 Reference: 64dB, 1dB/Div
 Bottom Curve: Input Return Loss

Plot 2 - Gain @ Psat With Driver

 Top Curve: Power Gain @ Pin = -20.0dBm
 Middle curve: Power Gain @ Psat, Pin = -6.0dBm
 Reference: 64dB, 1dB/Div
 Bottom Curve: Input Return Loss

Plot 3 - Small Signal Gain @ Pin = 0dBm

 Reference: 14dB, 1dB/Div
 Bottom Curve: Input VSWR

Plot 4 - Small Signal Phase @ Pin = 0dBm

 Reference: -105Deg, 10Deg/div
 Electrical Delay = 3.2nSec.
