

Solid State Broadband High Power Amplifier

1076-BBM3C3K01
100 – 520 MHz / 1 Watt

The BBM3C3K01 (SKU 1076) is suitable for high performance receiver front-end broadband and band specific VHF & UHF linear applications. This amplifier module utilizes Silicon LD MOS RF power devices that provide high gain, wide dynamic range, low distortions and excellent 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 A linear design
- Instantaneous broadband
- Small form factor and lightweight
- High IP2 & IP3
- Suitable for CW, AM, and FM (for other modulation type consult factory)
- 50 ohm input/output impedance
- High reliability and ruggedness

ELECTRICAL SPECIFICATIONS @ +15 VDC, 25°C, 50 Ω System

Parameter	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	100		520	MHz
Power Output CW	P _{SAT}	1.0	2.0		Watt
Output Power @ 1 dB Gain Compression Point	P _{1dB}	1.0			Watt
Power Gain @ 1 dB Gain Compression Point	G _{1dB}		38	40	dB
Input Power for Rated P _{OUT}	P _{IN}		-5		dBm
Small Signal Gain Flatness	ΔG			±0.5	dB
Input Return Loss	S ₁₁		-12		dB
Noise Figure (full Temp range)	NF		3.5	4	dB
Third Order Intercept Point 2-Tones @ 17 dBm/Tone, Δ = 500 KHz	IP3	+43	+44		dBm
IP2 @ P _{OUT} = +20 dBm Avg.	IP2	+70			dBm
Harmonics @ +20 dBm	H		-50		dBc
Spurious Signals	Spur		-70	-60	dBc
Operating Voltage	V _{DC}	14	15	16	Volt
Supply Current @ 0.2 Watt	I _{DD}		1.0	1.5	Amp

MECHANICAL SPECIFICATIONS

Parameter	Value	Units	Limits
Dimensions (without Heatsink)	3.5 x 2.5 x 0.9	Inch	Max
Weight without HS	1	lb.	Max
RF Connectors In / Out	SMA female		
DC Connectors	Dsub, 9 Pin, Male (optional Feed Thru Pins)		
Cooling	External Heat sink		

ENVIRONMENTAL CHARACTERISTICS (Design to Meet)

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	T _c	-35		+70	°C
Storage Temperature	T _{stg}	-40		+85	°C
Power Gain @ 1dB Gain Compression Point Over Temp Range	G _{1dB}	37	38	41	
Relative humidity (non-Condensing)	RH			95	%
Altitude (MIL-STD-810F Method 500.4)	ALT	25,000		30,000	Feet
Shock - Designed to meet	SH	Operating: Per MIL-STD-810C, Method 516.2 PROC. I FIG. 516-2-1 WITH PEAK VALUE OF 3G. Transient: Per MIL-STD-810C, METHOD 516. PROC II			
Vibration - Designed to meet	VI	Operating: 1-200Hz, 0.32G RMS Non Operating: MIL-STD-810C, PROCX FOG. 514-7 Curve AW			

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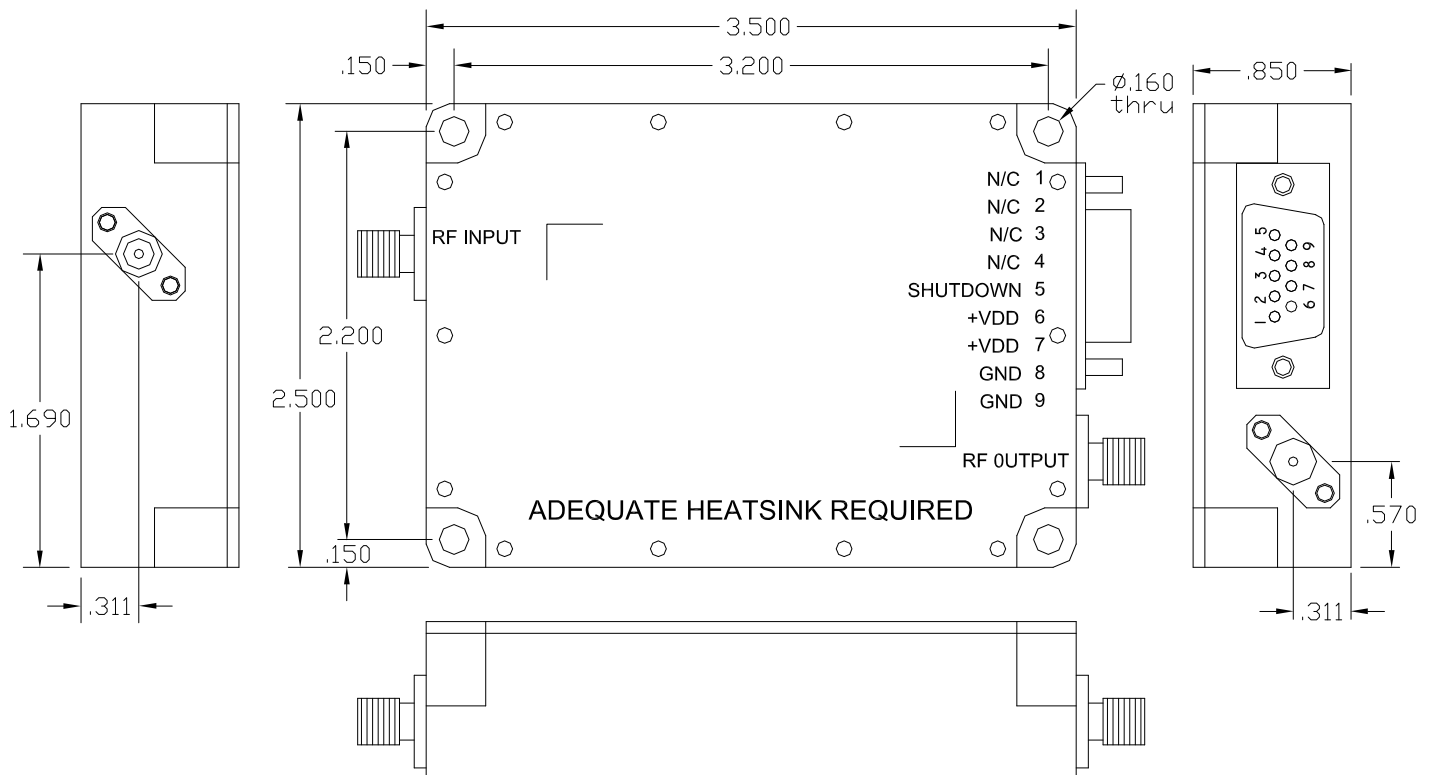
PROTECTIONS

Input Overdrive	+4 dBm	Max
Load VSWR	∞ @ all load phase & amplitude for duration of 1 minute 3:1 @ all load phase & amplitude continuous	Nom
Thermal Overload	85°C shutdown	Max

INTERFACE CONNECTOR - Dsub, 9 pin

Pin #	Description	Specifications
1	N/C	Spare
2	N/C	Spare
3	N/C	Spare
4	N/C	Spare
5	Shutdown	Amplifier Enable: TTL "Low" or Open Amplifier Disable: TTL "High"
6	VDD	+15 V _{DC} ±1 V
7	VDD	+15 V _{DC} ±1 V
8	GND	Ground
9	GND	Ground

OUTLINE DRAWING



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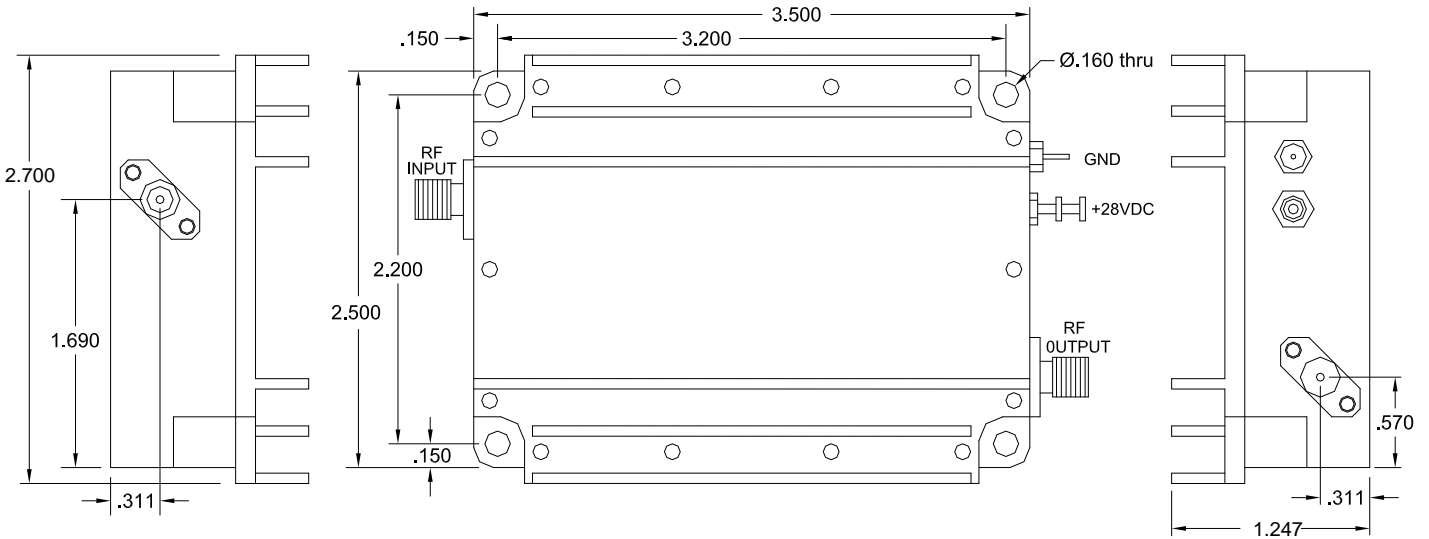
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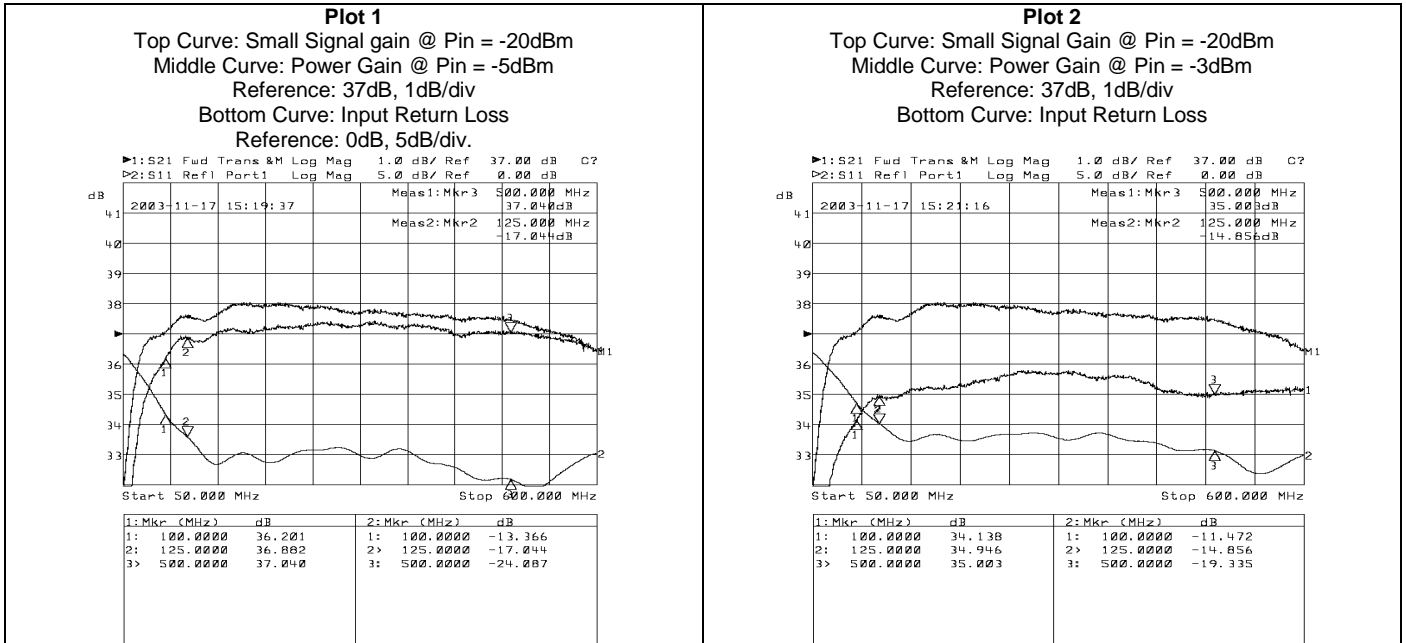
INTERFACE CONNECTION – With Option 071 Heatsink & Option 077 Feed Thru

Pin #	Description	Specifications
	GND	Ground
	+13 VDC	+15 V _{DC} ±1 V

OUTLINE DRAWING with OPTIONAL HEATSINK & FEED THRU PINS



PERFORMANCE PLOTS

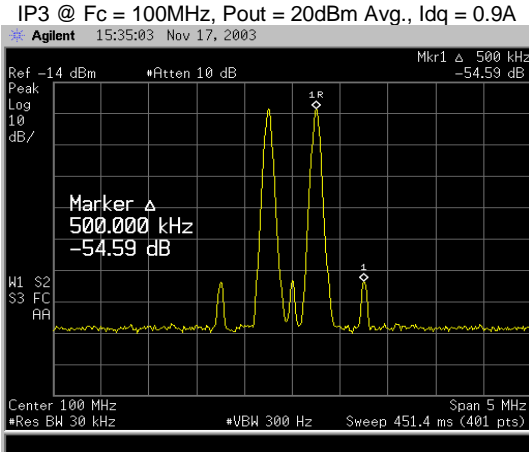


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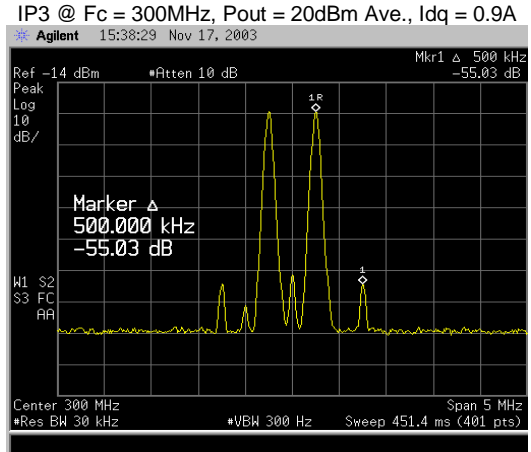
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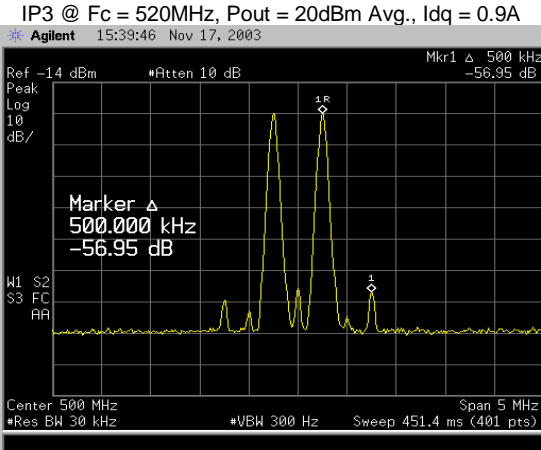
Plot 3
2-Tone Test



Plot 4
2-Tone Test



Plot 5
2-Tone Test



Plot 6
Harmonics

