

Solid State Broadband High Power Amplifier

1075 - BBM3Q6A3E
800 – 3000 MHz / 2 Watts

The BBM3Q6A3E (SKU 1075) is suitable for ultra broadband RF/Microwave power applications, this amplifier utilizes linear GaAsFET 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.



Shown with option 073

- Solid-state Class A design
- Instantaneous ultra broadband
- Small and lightweight
- Suitable for CW, AM, and FM (Consult factory for other modulation types)
- 50 ohm input/output impedance
- High reliability and ruggedness

ELECTRICAL SPECIFICATIONS @ +13V_{DC}, 25°C, 50Ω System

Parameter	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	800		3000	MHz
Power Output CW	P _{SAT}	2.0	3.0		Watt
Power Output @ 1dB Gain Compression	P _{1dB}	1.5	-		Watt
Power Gain @ 1dB Gain Compression	G _{1dB}	30			dB
Input Power for Rated P _{SAT}	P _{IN}		0	3	dBm
Small Signal Gain Flatness	ΔG		±1.0	±1.5	dB
Gain Adjustment Range (with Option 073)	VVA	25			dB
Input Return Loss	S ₁₁			-10	dB
Noise Figure @ max gain	NF		7	10	dB
Third Order Intercept Point 2-Tone @ 24dBm/Tone, 100kHz Spacing	IP3		+43		dBm
Harmonics @ P _{OUT} = 1.5W	H		-30	-20	dBc
Spurious Signals	Spur		-70	-60	dBc
Operating Voltage	V _{DD}	12	13	15	Volt
Current Consumption @ P _{OUT} = 2W	I _{DD}			1.2	Amp

MECHANICAL SPECIFICATIONS

Parameter	Value	Unit
Dimension – Standard (Option 073)	3.1 x 2.3 x 0.7 (3.8 x 2.3 x 0.7)	Inch
Weight	0.5	Pound
RF Connectors Input/Output	Type-SMA, Female	
DC Interface Connectors	Feed Thru	
Cooling	External Heatsink (not supplied)	

ENVIRONMENTAL CHARACTERISTICS (Design to Meet)

Parameter	Symbol	Min	Typ	Max	Unit
Operating Temperature	T _C	0		+50	°C
Non-operating Temperature	T _{STG}	-40		+85	°C
Relative Humidity (non-condensing)	RH			95	%
Altitude (MIL-STD-810F Method 500.4)	ALT			30,000	Feet
Vibration/Shock MIL-STD-810F - Method 514.5/516.5 – Proc I	VI/SH		Airborne		

LIMITS

Input RF drive level without damage	+10 dBm	Max
Load VSWR @ P _{OUT} = 2W	∞ @ any load phase & amplitude for duration of 1 minute 3:1 @ all load phase & amplitude continuous	-
Thermal Overload (with Option 073)	85°C shutdown	Max

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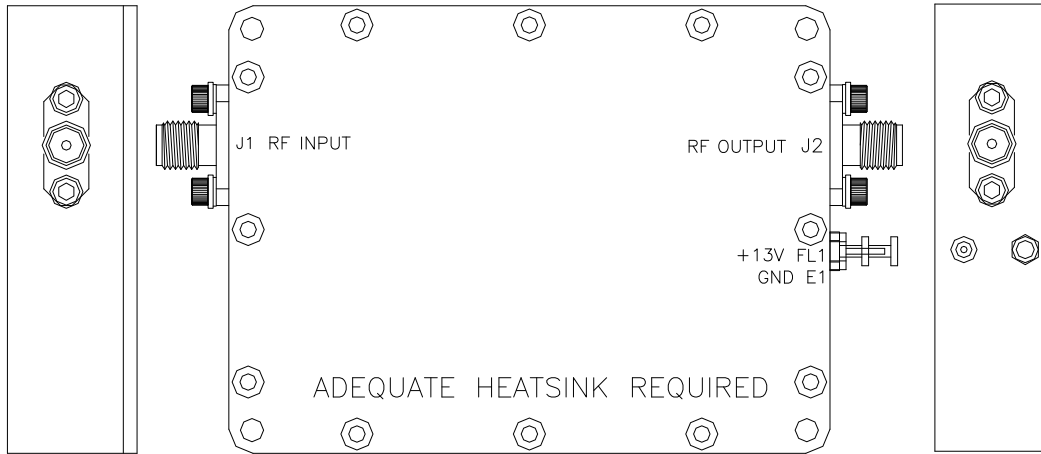
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DC INTERFACE CONNECTION – Standard

Pin #	Description	Specification
FL1	+13V	+12.0-15.0V _{DC}
E1	GND	Ground

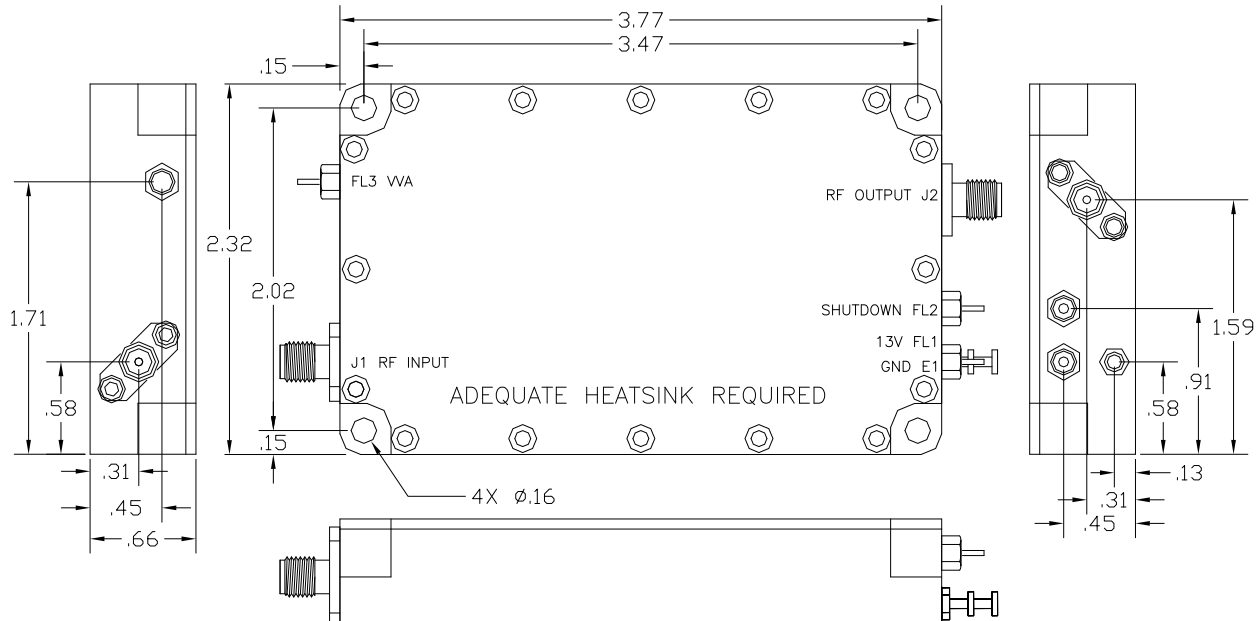
OUTLINE DRAWING – STANDARD



DC INTERFACE CONNECTION – WITH Option 073

Pin #	Description	Specification
FL1	+13V	+12.0-15.0V _{DC}
FL2	Shutdown	Amplifier Disable: TTL Logic High (5V) (Internally Pulled-Low)
FL3	VVA	0V _{DC} – Max. Gain, 5.0V _{DC} – Min. Gain
E1	GND	Ground

OUTLINE DRAWING – SHOWN WITH OPTION 073



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TYPICAL PERFORMANCE PLOTS

