

# Solid State Broadband High Power Amplifier

**1118 – BBM2E4ACK**
**20 – 1000 MHz, 15 Watts**

## PRELIMINARY INFORMATION

The BBM2E4ACK (SKU 1118) is suitable for multi-octave broadband high power VHF and UHF linear applications. This compact module utilizes high power advanced GaN devices that provide excellent power density, high efficiency, wide dynamic range and low distortion. 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
- Extremely wide instantaneous bandwidth
- Compact and lightweight
- Built-in control, monitoring and protection circuits
- Suitable for all modulation schemes
- 50 ohm input and output impedance
- Highly rugged and reliable

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

Parameter	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	20		1000	MHz
Power Output (CW)	P <sub>SAT</sub>	15			Watt
Power Output @ 1 dB Gain Compression Point	P <sub>1dB</sub>	10			Watt
Power Gain @ 1 dB Gain Compression Point	G <sub>1dB</sub>	42			dB
Input Power for Rated Output	P <sub>IN</sub>	0		5	dBm
Small Signal Gain Flatness	ΔG		±1.0	±2.0	dB
Gain Adjustment Range (Optional)	VVA	25			dB
Input Return Loss	S11			-10	dB
Noise Figure	NF			10	dB
Harmonics @ P <sub>1dB</sub> Gain Compression Point	H		-20	-15	dBc
Spurious Signals	Spur			-60	dBc
Blanking Response Time	T <sub>ON/OFF</sub>			5	μs
Gain at Amplifier Mute	G <sub>MUTE</sub>			-30	dB
Operating Voltage	VDC	26	28	30	Volt
Supply Current @ rated P <sub>out</sub>	IDD		1.50	1.8	Amp

## ENVIRONMENTAL CHARACTERISTICS

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	T <sub>c</sub>	-20		+75	°C
Storage Temperature	T <sub>stg</sub>	-40		+85	°C
Relative Humidity with Visible Condensation	RH			95	%
Altitude	ALT		30,000	40,000	Feet
Shock and Vibration	SH / VI		Airborne		

## MECHANICAL SPECIFICATIONS

Parameter	Value	Units	Limits
Dimensions	4.0 x 2.5 x 1.1	Inch	Max
Weight	1.0	lb.	Max
RF Connectors Input/Output	SMA female/SMA female		
DC Power and Control Connector	9 Pin DSUB		
Cooling	External Heatsink		

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**PROTECTIONS**

Input Overdrive	$P_{OD}$	+10 dBm	Max
Load VSWR @ Rated $P_{out}$	$\Psi$	$\infty$ @ all load phase & amplitude	Nom
Thermal Overload	$T_{OD}$	85 °C shutdown	Max

**INTERFACE CONNECTOR, D-Sub, 9-Pin**

Pin #	Description	Specifications
1	Not Assigned	Reserved
2	Not Assigned	Reserved
3	Temperature Sense	Analog voltage relative to module temperature @ 10 mV/°C
4	VVA (Optional)	Continuous Analog 0 – 5 VDC levels Maximum Gain: 5 VDC Minimum Gain: 0 VDC
5	Shutdown	Enable: TTL "Low" or Open Blanked: TTL "High" (Default)
6, 7	VDD	+28 VDC $\pm$ 2.0 V
8, 9	GND	Ground

**OUTLINE DRAWING**
