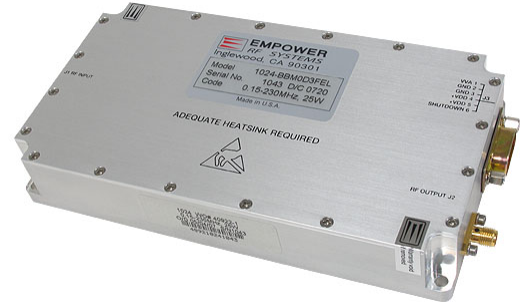


## Solid State Broadband High Power Amplifier

**1024 - BBM0D3FEL**
**0.15 – 230 MHz / 25 Watt**

The BBM0D3FEL (SKU 1024) is suitable for high power ultra broadband or band specific linear applications. This amplifier utilizes MOSFET 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 A linear 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 @ +28V<sub>DC</sub>, 25°C, 50 Ω System

Parameter	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	0.15		230	MHz
Power Output CW	P <sub>SAT</sub>	25	30		Watt
Output Power @ P <sub>1dB</sub> Gain Compression	P <sub>1dB</sub>	20	25		Watt
Power Gain @ P <sub>1dB</sub> Gain Compression	G <sub>1dB</sub>	44			dB
Input Power for Rated P <sub>SAT</sub>	P <sub>IN</sub>		0	3	dBm
Small Signal Gain Flatness	ΔG			±1.5	dB
Gain Adjustment Range	VVA	25			dB
Input Return Loss	S <sub>11</sub>			10	dB
Noise Figure @ Maximum Gain	NF			10	dB
Third Order Intercept Point 2-Tone @ 30dBm/Tone, 100kHz Spacing	IP3	+50			dBm
Harmonics @ P <sub>OUT</sub> = 20W	H		-20		dBc
Spurious Signals	Spur		-70	-60	dBc
Operating Voltage	V <sub>DD</sub>	26	28	30	Volt
Current Consumption @ P <sub>OUT</sub> = 25W	I <sub>DD</sub>			4.5	Amp

### MECHANICAL SPECIFICATIONS

Parameter	Value	Unit
Dimensions	6.4 x 3.4 x 1.1	Inch
Weight	1.0	Pound
RF Connectors Input/Output	Type-SMA, Female	
DC Interface Connector	D-Sub 9-Pin, Male	
Cooling	External Heatsink (not supplied)	

### ENVIRONMENTAL CHARACTERISTICS (Design to Meet)

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	T <sub>C</sub>	0		+75	°C
Non-operating Temperature	T <sub>STG</sub>	-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 1	VI/SH		Airborne		



# Solid State Broadband High Power Amplifier

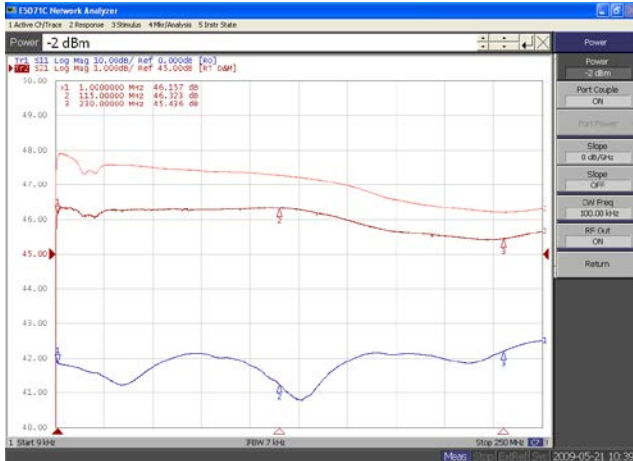
1024 - BBM0D3FEL

0.15 – 230 MHz / 25 Watt

## TYPICAL PERFORMANCE PLOTS

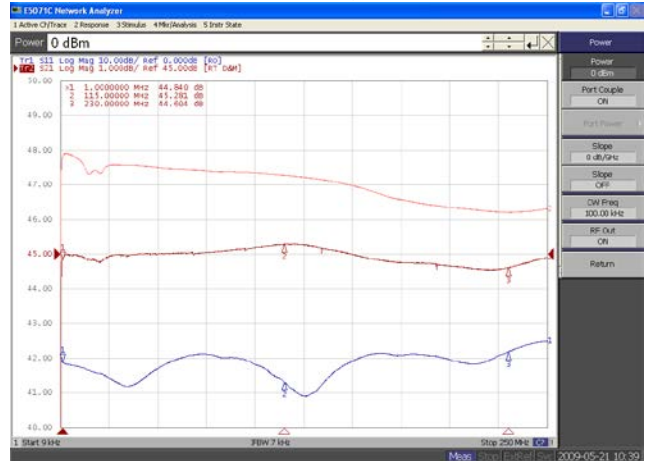
**Plot 1 – Small Signal Gain and  $P_{1dB}$**

Top Curve: Small Signal Gain @  $P_{IN} = -20dBm$   
 Middle Curve: Power Gain @  $P_{1dB}$ ,  $P_{IN} = -2.0dBm$   
 Reference: 45dB, 1dB/div.  
 Bottom Curve: Input Return Loss  
 Reference: 0dB, 10dB/div.



**Plot 2 – Small Signal Gain and  $P_{SAT}$**

Top Curve: Small Signal Gain @  $P_{IN} = -20dBm$   
 Middle Curve: Power Gain @  $P_{SAT}$ ,  $P_{IN} = 0.0dBm$   
 Reference: 45dB, 1dB/div.  
 Bottom Curve: Input Return Loss  
 Reference: 0dB, 10dB/div.



**Plot 3 – Gain Adjustment Range**

Top Curve: Max. Gain @  $VVA_{CTRL} = 5.0V$ ,  $P_{IN} = -20dBm$   
 Middle Curve: Min. Gain @  $VVA_{CTRL} = 2.0V$ ,  $P_{IN} = -20dBm$   
 Reference: 20dB, 10dB/div.  
 Bottom Curve: Input Return Loss @ Minimum Gain  
 Reference: 0dB, 10dB/div.

