

Solid State General Communication Power Amplifier

1104 – BBM3C3KNP
100 – 500 MHz / 200 Watts

The BBM3C3KNP (SKU 1104) is suitable for VHF & UHF broadband and band specific high power linear applications. This amplifier utilizes push-pull LDMOS 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 linear design
- Small form factor and lightweight
- Suitable for CW, AM, and FM (for other modulation type consult factory)
- 50 ohm input/output impedance
- High reliability and ruggedness
- Built in control, monitoring, protection circuits



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

Parameter	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	100	-	500	MHz
Power Output CW	P _{SAT}	200	250		Watt
Power Output @ 1 dB Gain Compression Point	P _{1dB}	200			Watt
Power Gain	G _P	52			dB
Input Power for Rated Output	P _{IN}		0		dBm
Gain Flatness	ΔG		±1.0	±1.5	dB
Gain @ Shutdown, Pin= -10 dBm	G _{MUTE}		-25		dB
Input Return Loss	S11			-10	dB
3 rd Order Intercept Point	IP3		+62		dBm
2-Tones @ 44 dBm/Tone @ Δ = 100 KHz					
Harmonics @ 1dB Gain Compression Point	H		-20		dBc
Spurious Signals	Spur		-70	-60	Volt
Operating Voltage	VDD	26	28	30	VDC
Current Consumption at rated P _{out} = 200 W	IDD			32.5	Amp
Switching Time	T _{ON/OFF}		20		uSec

MECHANICAL SPECIFICATIONS

Parameter	Value	Unit	Limit
Dimensions (w/o connectors)	9.0 x 8.0 x 1.50	Inch	Max
Weight	5.7	lb	Max
RF Connectors Input / Output	SMA female / Type-N female		
DC / Interface	Hybrid Dsub		
Cooling	External heatsink / Air-flow		

ENVIRONMENTAL CHARACTERISTICS (Design to Meet)

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	T _c	0		+50	°C
Storage Temperature	T _{stg}	-40		+85	°C
Relative humidity (non-condensing)	RH			95	%
Altitude (MIL-STD-810F Method 500.4)	ALT	10,000		30,000	Feet
Shock / Vibration (MIL-STD-810F Method 516.5)	SH / VI		Airborne		

PROTECTIONS

Input Overdrive	+10 dBm	Max
Load VSWR @ rated P1 dB Gain Compression Point	∞ @ all load phase & amplitude for duration of 1 minute 3:1 @ all load phase & amplitude continuous	Nom
Thermal Overload	85°C shutdown	Max

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TYPICAL PERFORMANCE PLOTS

Plots 1 - Small Signal and P_{1dB} Gain

Top Curve: Small Signal Gain @ P_{IN} = -40dBm
 Middle Curve: Power Gain @ P_{1dB}, P_{IN} = -2.0dBm
 Reference: 54dB, 1dB/div.
 Bottom Curve: Input VSWR
 Reference: 0dB, 10dB/div.



Plot 2 - Small Signal and P_{SAT}

Top Curve: Small Signal Gain @ P_{IN} = -40dBm
 Middle Curve: P_{SAT} @ P_{IN} = 0.0dBm
 Reference: 54dB, 1dB/div.
 Bottom Curve: Input VSWR
 Reference: 0dB, 10dB/div.

