

Solid State Broadband High Power Amplifier

2072 - BBS2C3CRR
10 – 100 MHz / 500 Watts

The BBS2C3CRR (2072) is suitable for broadband VHF high power applications. This amplifier utilizes high power push-pull MOSFET devices that provides 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, built-in high quality power supply, EMI/RFI filters, machined housings and all qualified components. Empower RF's ISO9001 Quality Assurance Program assures consistent performance and the highest reliability.



SKU#: 2072DFRAAXLXX

- Solid-State Class AB design
- Instantaneous ultra broadband
- Small and lightweight
- Front panel manual gain adjust
- Suitable for CW, AM, and FM (Consult factory for other modulation types)
- 50 ohm input/output impedance
- High reliability and ruggedness

ELECTRICAL SPECIFICATIONS @ 220V_{AC}, 25°C, 50 Ω System

Parameter	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	10		100	MHz
Output Power CW	P _{SAT}	500			Watt
Output Power @ 1dB Gain Compression	P _{1dB}	400			Watt
Power Gain @ P _{1dB}	G _{1dB}	56			dB
Input Power for Rated P _{SAT}	P _{IN}		0	3	dBm
Small Signal Gain Flatness, P _{IN} = -20dBm	ΔG			±1.5	dB
Gain Adjustment Range	FGA	20	25		dB
Input Return Loss	S ₁₁			-10	dB
Noise Figure @ maximum gain	NF		10		dB
Third Order Intercept Point 2-Tone @ 47dBm/Tone, 100kHz Spacing	IP3		+60		dBm
Harmonics @ P _{OUT} = 400W	H		-20		dBc
Spurious Signals	Spur		-70	-60	dBc
Operating Voltage (1-phase)	V _{AC}	100		240	Volt
Power Consumption @ P _{OUT} = 500W, CW	P _D		1500	2000	Watt

MECHANICAL SPECIFICATIONS

Parameter	Value	Unit
Dimension (W x H x L)	19 x 5.25 x 22	Inch
Weight	50	Pound
RF Connectors Input/Output	Type-N, Female	
Cooling	Built-in forced air cooling system	

ENVIRONMENTAL CHARACTERISTICS (Design to Meet)

Parameter	Symbol	Min	Typ	Max	Unit
Operating Ambient Temperature	T _A	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		

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LIMITS

Input RF drive level without damage	+6 dBm	Max
Load VSWR @ P _{OUT} = 400W	∞ @ all load phase & amplitude for duration of 1 minute 3:1 @ all load phase & amplitude continuous	-
Thermal Overload	85°C shutdown	Max

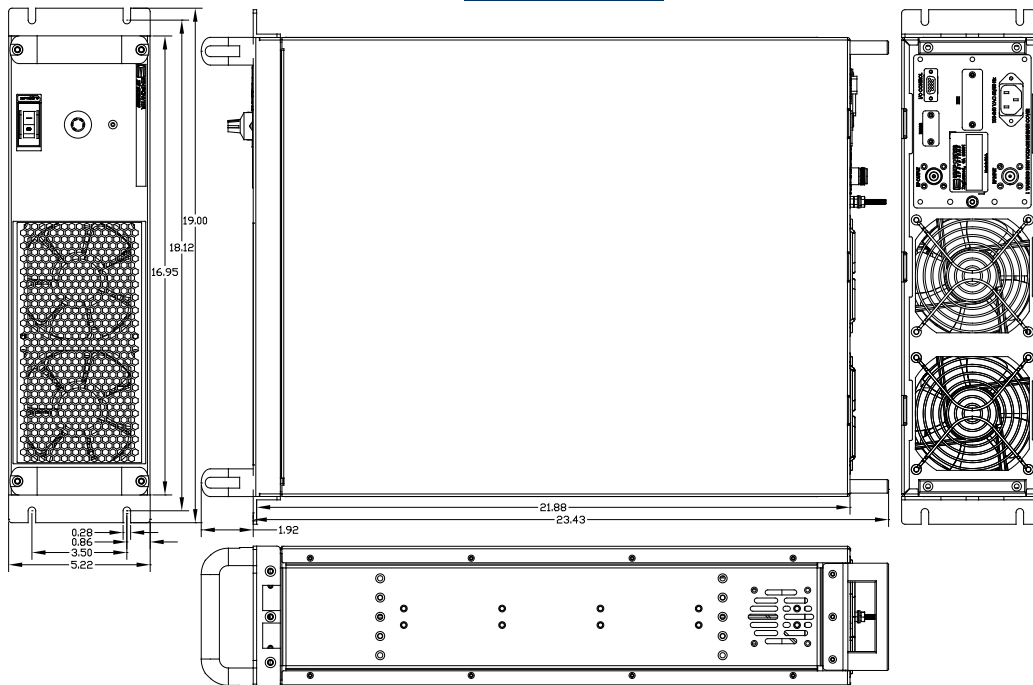
AVAILABLE OPTIONS

SKU #	Description	LCD Touchscreen
2072DFRAAXLXX	FGA (Front Gain Adjust) Rear RF Connectors, 100-240VAC, 50/60Hz	
Optional	Rack Slides (Call for price)	

I/O INTERFACE CONNECTOR – D-Sub 9-Pin, Female

Pin #	Description	Specification
1	N/C	No Connection
2	N/C	No Connection
3	5V TP	Test point: 5.0V _{DC} ±0.2V
4	VVA TP	Test point: 5.6V _{DC} ±0.2V
5	EXT Shutdown	Disable: TTL Logic High (5V) (Internally Pulled-Low)
6	12V TP	Test point: 12.0V _{DC} ± 0.5V
7	P/S TP	Test point: 26.0-30.0V _{DC}
8&9	GND	Ground

OUTLINE DRAWING SHOWN SKU#: [2072DFRAAXLXX](#)



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TYPICAL PERFORMANCE PLOTS

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

Top Curve: Small Signal Gain @ $P_{IN} = -20\text{dBm}$
 Middle Curve: Power Gain @ P_{1dB} , $P_{IN} = -2.0\text{dBm}$
 Reference: 57dB, 1dB/div.
 Bottom Curve: Input Return Loss
 Reference: 0dB, 10dB/div.



Plot 2 – Small Signal Gain and P_{SAT}

Top Curve: Small Signal Gain @ $P_{IN} = -20\text{dBm}$
 Middle Curve: Power Gain @ P_{SAT} , $P_{IN} = 1.0\text{dBm}$
 Reference: 57dB, 1dB/div.
 Bottom Curve: Input Return Loss
 Reference: 0dB, 10dB/div.



Plot 3 – Gain Adjustment Range

Top Curve: Maximum Gain @ $P_{IN} = -20\text{dBm}$
 Middle Curve: Minimum Gain @ $P_{IN} = -20\text{dBm}$
 Reference: 30dB, 10dB/div.
 Bottom Curve: Input Return Loss @ Minimum Gain
 Reference: 0dB, 10dB/div.

