

Solid State Broadband High Power Amplifier

2043 - BBS1C3KAJ

1 - 500MHz / 10Watts

The BBS1C3KAJ (2043) is suitable for ultra broadband high power linear applications. This amplifier utilizes high power push-pull MOSFET devices that provide wide frequency response and dynamic range, high gain, low distortions, and good linearity. Exceptional performance and high efficiency are achieved by employing advanced broadband RF matching networks and combining techniques, EMI/RFI filters, and all qualified components. The system includes a universal voltage, single phase, power supply and a built in forced air-cooling system. Empower RF's ISO9001 Quality Assurance Program assures consistent performance and the highest reliability.



SKU#: 2043AFFAAXXXX

- Solid-state class AB design
- Instantaneous ultra broadband
- Small and lightweight
- Standard front panel manual gain adjust
- Suitable for AM, FM, CW (Contact factory for other modulation types)
- 50 Ohm Input/Output impedance
- High reliability and ruggedness

ELECTRICAL SPECIFICATIONS @ 120V_{AC}, 25°C, 50Ω System

Parameter	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	1		500	MHz
Output Power CW	P _{SAT}	10			Watt
Output Power @ 1dB Gain Compression	P _{1dB}	6	8		Watt
Power Gain @ 1dB Gain Compression	G _{1dB}	40			dB
Input Power for Rated P _{SAT}	P _{IN}		0	3	dBm
Small Signal Gain Flatness	ΔG			±1.5	dB
Gain Adjustment Range	FGA	25			dB
Input Return Loss	S ₁₁			-10	dB
Noise Figure	NF		10		dB
Third Order Intercept Point	IP3		+48		dBm
2-Tone @ 30dBm/Tone, 100kHz Spacing					
Harmonics @ P _{OUT} = 6W	H		-20		dBc
Spurious Signals	Spur		-70	-60	dBc
Operating Voltage (1-phase)	V _{AC}	100		240	Volt
Power Consumption @ P _{OUT} = 10W CW	P _D			100	Watt

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	VI / SH		Airborne		
MIL-STD-810F Method 514.5/516.5 – Proc I					

MECHANICAL SPECIFICATIONS

Parameter	Value	Unit
Dimensions	8.5 x 3.5 x 16	Inch
Weight	15	Pound
RF Connectors Input/Output	Type-N, Female	
Cooling	Built-in internal forced air cooling system	

Solid State Broadband High Power Amplifier

2043 - BBS1C3KAJ	1 - 500MHz / 10Watts
------------------	----------------------

LIMITS

Input RF drive level without damage	+10dBm	Max
Load VSWR @ P _{OUT} = 6W	∞ @ all load phase & magnitude for duration of 1 minute 3:1 @ all load phase & amplitude continuous	-
Thermal Overload	85°C shutdown	Max

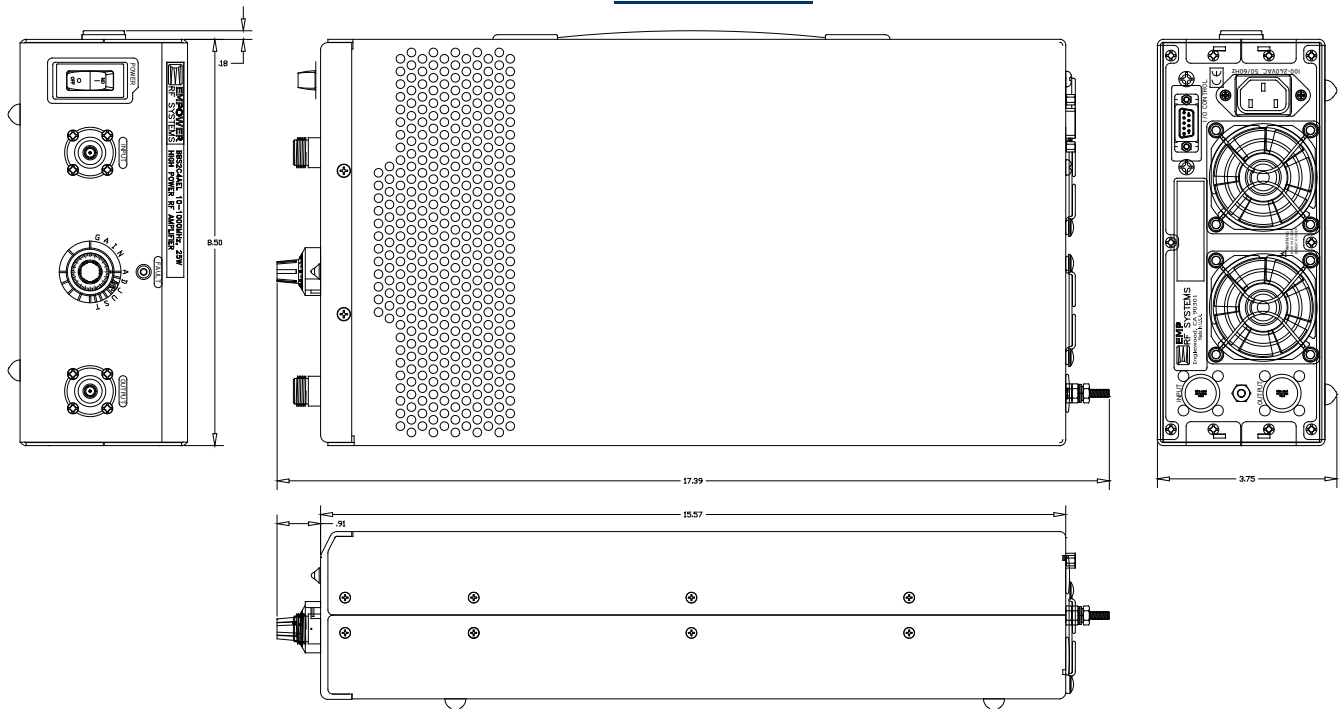
AVAILABLE OPTION

SKU Number	Description
2043AFFAAXXXX	Bench Top, FGA (Front Gain Adjust) Front RF Connectors, 100-240VAC, 50/60Hz

I/O CONNECTOR – D-sub 9-pin, Female

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

SYSTEM OUTLINE SHOWN SKU#: [2043AFFAAXXXX](#)



Solid State Broadband High Power Amplifier

2043 - BBS1C3KAJ	1 - 500MHz / 10Watts
------------------	----------------------

TYPICAL PERFORMANCE PLOTS

