

Amplifiers

Model 125S6G18C

Features:

- 125 W CW, 6.0 - 12.0 GHz
- 100 W CW 12.0 - 18.0 GHz
- 100% mismatch tolerant
- Built-in fault monitoring, logging and protection
- Touch screen display
- RF sample ports
- Forward and reverse power monitoring
- VSWR monitor with user settable limit
- User settable ALC
- Remote control: Ethernet, USB, GPIB, fiber-optic serial, RS-232
- Modular design for easy maintenance and service
- Low acoustical noise

Applications:

- EMC (military, aviation, automotive, commercial)
- Radiated and conducted EMC testing
- General purpose, antenna, and component testing
- CDMA, W-CDMA, TDMA, GSM, UWB, WiMAX etc.

To view our full amplifier portfolio visit: www.arworld.us/ar-amplifiers

Amplifier Research Corporation
160 Schoolhouse Rd
Souderton, PA 18964
215.723.8181
info@arworld.us
www.arworld.us
ISO 9001:2015 Certified
ISO 17025 :2017 Accredited

The Model 125S6G18C is a solid-state, Class A design, self-contained, air-cooled, broadband power amplifier designed for applications where instantaneous bandwidth, high gain and linearity are required. It will provide a minimum of 125 W across its operating bandwidth of 6.0 - 12.0 GHz and 100 W from 12.0 - 18.0 GHz. Protection from input overdrive beyond 0 dBm is provided as well as protection from various failure conditions including over-temperature and power supply faults.

A front panel display indicates the operational status and fault conditions. All amplifier control functions, and status indications are available remotely using GPIB/IEEE-488, RS-232, fiber-optic serial, USB, or Ethernet. Interface connectors are located on the back panel. Local and remote operation is managed by a switch on the front panel.

This is a multiple purpose amplifier. The low level of spurious signals and linearity make it ideal for use as a driver in testing wireless and communication components and subsystems. By covering such a wide bandwidth, it is suitable for a variety of communication technologies such as CDMA, W-CDMA, TDMA, GSM, UWB, WiMAX etc.

The export classification for this equipment is 3A001. These commodities, technology or software are controlled for export in accordance with the U.S. Export Administration Regulations. Diversion contrary to U.S. law is prohibited.



Model 125S6G18C

- 125 W, 6.0 - 12.0 GHz
- 100 W, 12.0 - 18.0 GHz

Electrical Specifications					
Parameter	Symbol	Minimum	Typical	Maximum	Unit
Rated Power Output (6.0 - 12.0 GHz)	PSAT	125	175	>225	W
Rated Power Output (12.0 - 18.0 GHz)	PSAT	100	150	>225	W
Input for Rated Output	Pin			1.0	mW
				0	dBm
Power Output @ 3 dB Compression (6.0 - 12.0 GHz)	P3dB	125	175	>225	W
Power Output @ 3 dB Compression (12.0 - 18.0 GHz)	P3dB	100	150	>225	W
Power Output @ 1 dB Compression (6.0 - 12.0 GHz)	P1dB	100	125	>225	W
Power Output @ 1 dB Compression (12.0 - 18.0 GHz)	P1dB	75	125	>200	W
Operating Frequency	BW	6.0		18.0	GHz
Gain (Small Signal)		52	56	60	dB
Gain Reduction Adjustment (when below compression)		10	15	20	dB
Flatness	ΔG		± 2.5	± 3.5	dB
Input Impedance	Z in		50		Ohm
			2.0:1	2.5:1	VSWR
Output Impedance	Z out		50		Ohm
3 rd Order Intercept	IP3		+56		dBm
Harmonic Distortion @ 125 W, 6.0 - 12.0 GHz, @ 100 W, 12.0 - 18.0 GHz	H2, H3		-25	-20	dBc
Power Consumption	PD			2750	W
Modulation Capability	AM, FM or Pulse				

Absolute Maximum Rating				
Exceeding any of the limits here may result in permanent damage to the device.				
Parameter	Minimum	Typical	Maximum	Unit
RF Drive		0	+13	dBm
RF Load		1:1	∞	VSWR
RF Load Reflected Will operate without damage or oscillation when connected to any load impedance without the aid of foldback circuitry. However, mismatch above 6:1 may limit output to 65 watts reflected power.			50	%
AC Power - Voltage (single phase)	200		240	VAC
AC Power - Frequency	47		63	Hz
Ambient Temperature	+5	+25	+40	°C
Storage Temperature	-20		+50	°C
Altitude			2000	m
Shock/Vibration	Normal Truck Transport			

Model 125S6G18C

- 125 W, 6.0 - 12.0 GHz
- 100 W, 12.0 - 18.0 GHz

Mechanical Specifications		
Parameters		Unit
Dimensions (With Cabinet) (10U) (W x H x D)	57.4 x 48.2 x 62.87	cm
	22.6 x 18.98 x 24.75	in
Dimensions (No Cabinet) – 10U for 19" Rack	48.3 x 44.45 x 64.77	cm
	19.0 x 17.5 x 25.5	in
Weight (With Cabinet)	67.6	kg
	149	lb
Weight (No Cabinet)	54	kg
	119	lb
Cooling	Forced air (self-contained fans) Side inlets / rear outlet $\Delta t = +7^{\circ}\text{C}$ (typical)	
Acoustical Noise (Measured @ 1 meter from the front)	66 (typical)	dBA

Regulatory Compliance	
Type	Standard
EMC	EN 61326-1
Safety	UL 61010-1
	CAN/CSA C22.2 #61010-1
	CENELEC EN 61010-1
RoHS	Directive 2011/65/EU
Export	3A001

Connector interfaces	
Function	Type
RF input	N female (50 Ω)
RF output	WRD650 (50 Ω), rear
RF Sample	N female (50 Ω), 57 dB typical
IEEE-488	24-pin female
RS-232	9-pin subminiature D female
RS-232 (fiber optic)	ST
USB 2.0	Type B
Ethernet	RJ-45
Interlock	15-pin subminiature D female

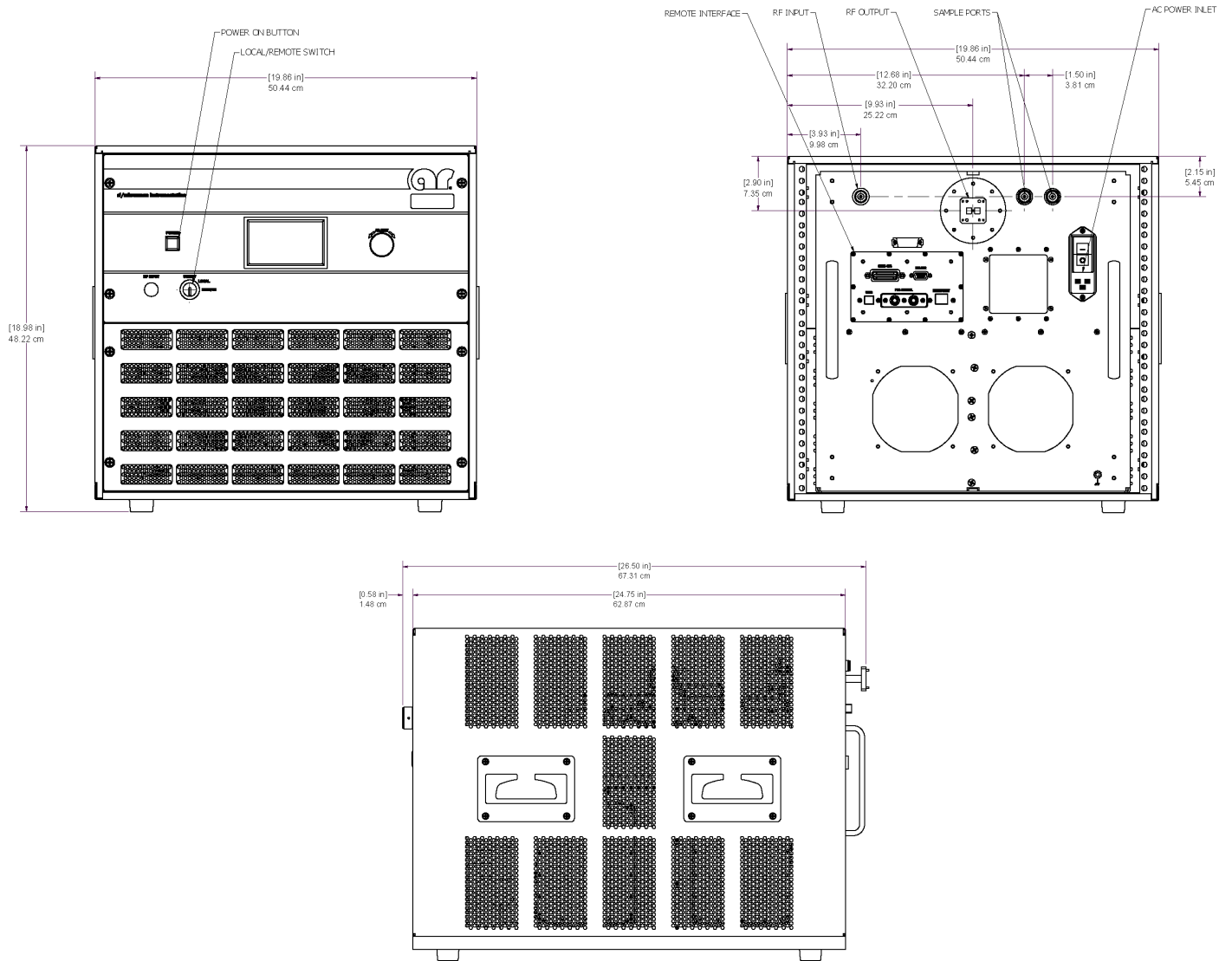
Ordering Options

125S6G18C	-	N	-	R	-	WRD650	-		-																			
Model		RF IN Conn Location, Type		RF OUT Conn Location, Type		Enclosure No Enclosure		RF Sample Ports																				
		<table border="1"> <thead> <tr> <th colspan="2">Connector</th> </tr> </thead> <tbody> <tr> <td>Front</td> <td>F</td> </tr> <tr> <td>Rear</td> <td>R</td> </tr> </tbody> </table>	Connector		Front	F	Rear	R			<table border="1"> <thead> <tr> <th colspan="2">Enclosure</th> </tr> </thead> <tbody> <tr> <td>Enclosure</td> <td>E</td> </tr> <tr> <td>No Enclosure</td> <td>NE</td> </tr> </tbody> </table>	Enclosure		Enclosure	E	No Enclosure	NE			<table border="1"> <thead> <tr> <th colspan="2">RF Sample Ports</th> </tr> </thead> <tbody> <tr> <td>Front</td> <td>SPF</td> </tr> <tr> <td>Rear</td> <td>SPR</td> </tr> </tbody> </table>	RF Sample Ports		Front	SPF	Rear	SPR		
Connector																												
Front	F																											
Rear	R																											
Enclosure																												
Enclosure	E																											
No Enclosure	NE																											
RF Sample Ports																												
Front	SPF																											
Rear	SPR																											

Model 125S6G18C

- 125 W, 6.0 - 12.0 GHz
- 100 W, 12.0 - 18.0 GHz

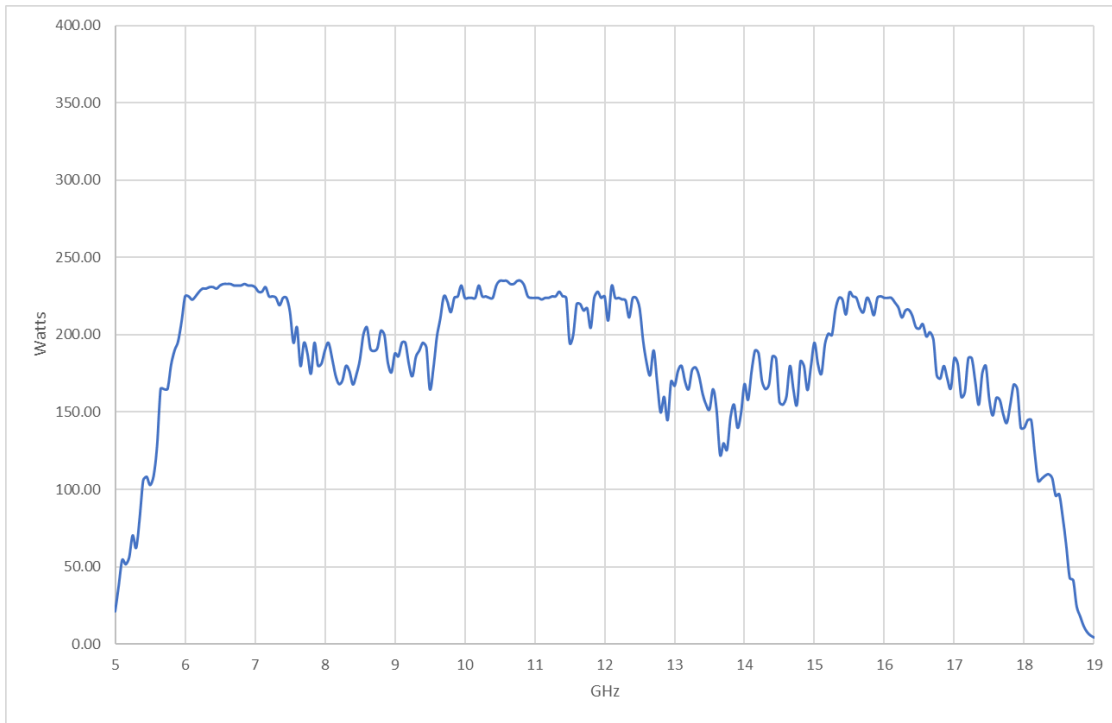
Envelope Drawing



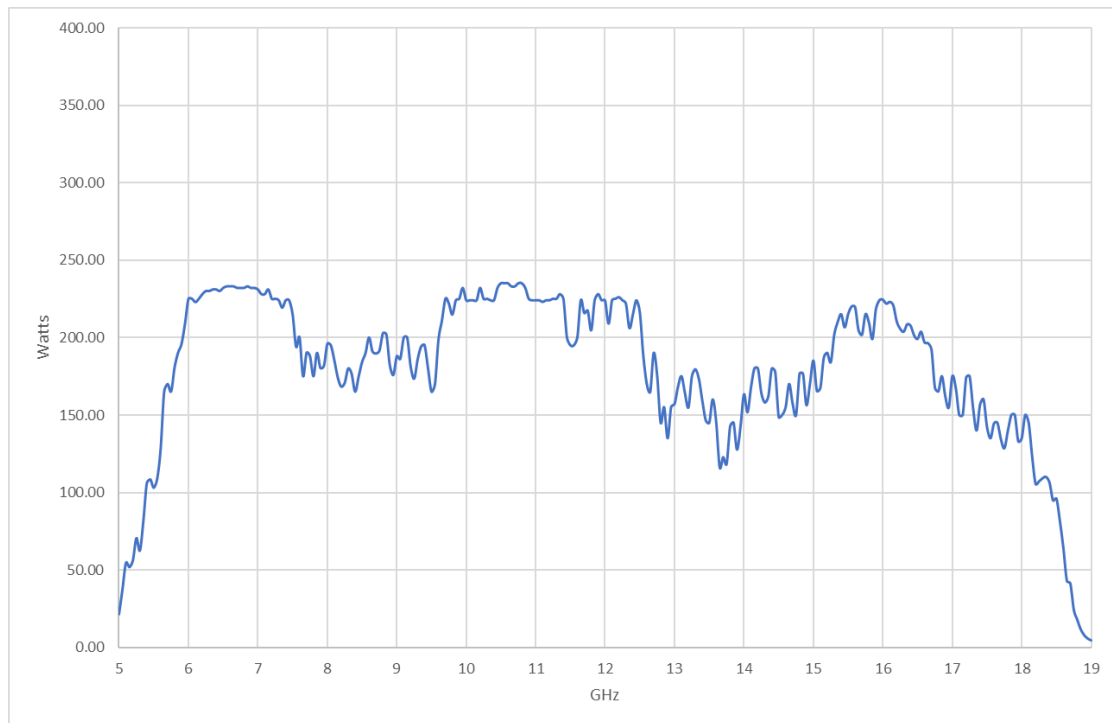
Model 125S6G18C

- 125 W, 6.0 - 12.0 GHz
- 100 W, 12.0 - 18.0 GHz

TYPICAL PSAT POWER @ 0dBm INPUT



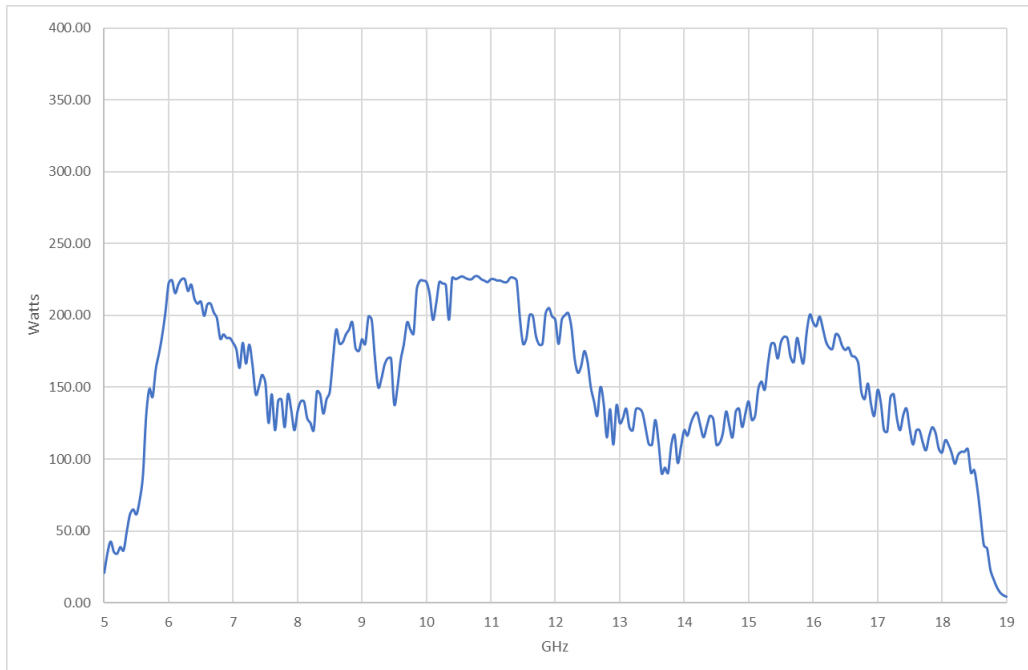
TYPICAL POWER @ P3dB COMPRESSION



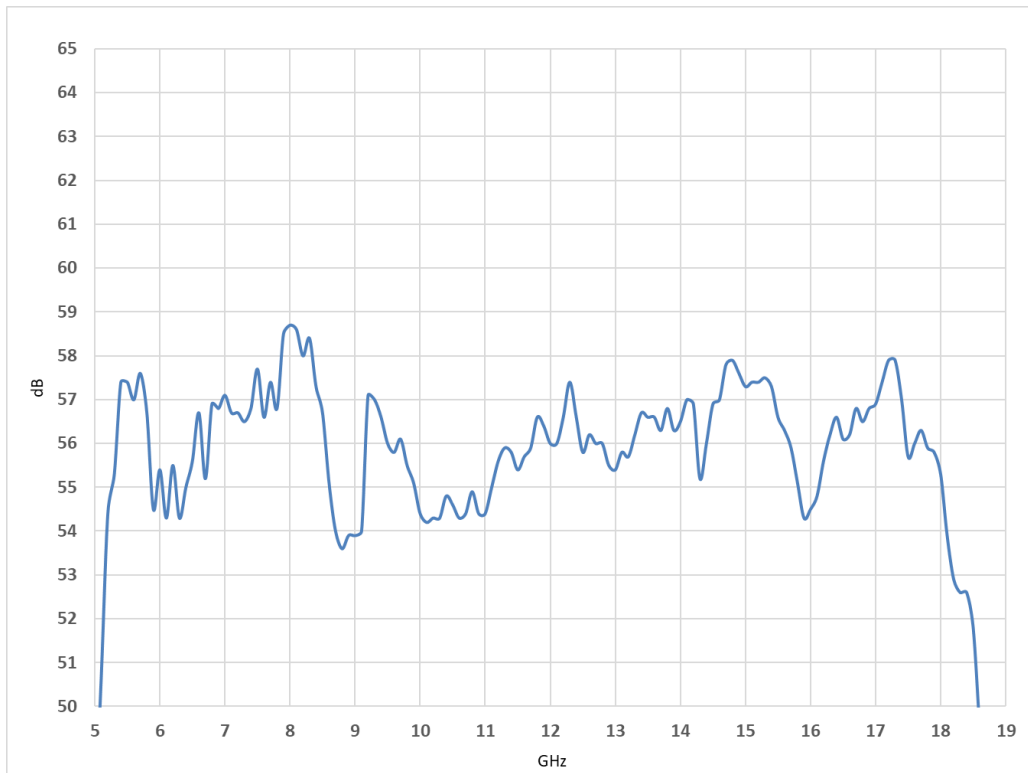
Model 125S6G18C

- 125 W, 6.0 - 12.0 GHz
- 100 W, 12.0 - 18.0 GHz

TYPICAL POWER @ P1dB COMPRESSION



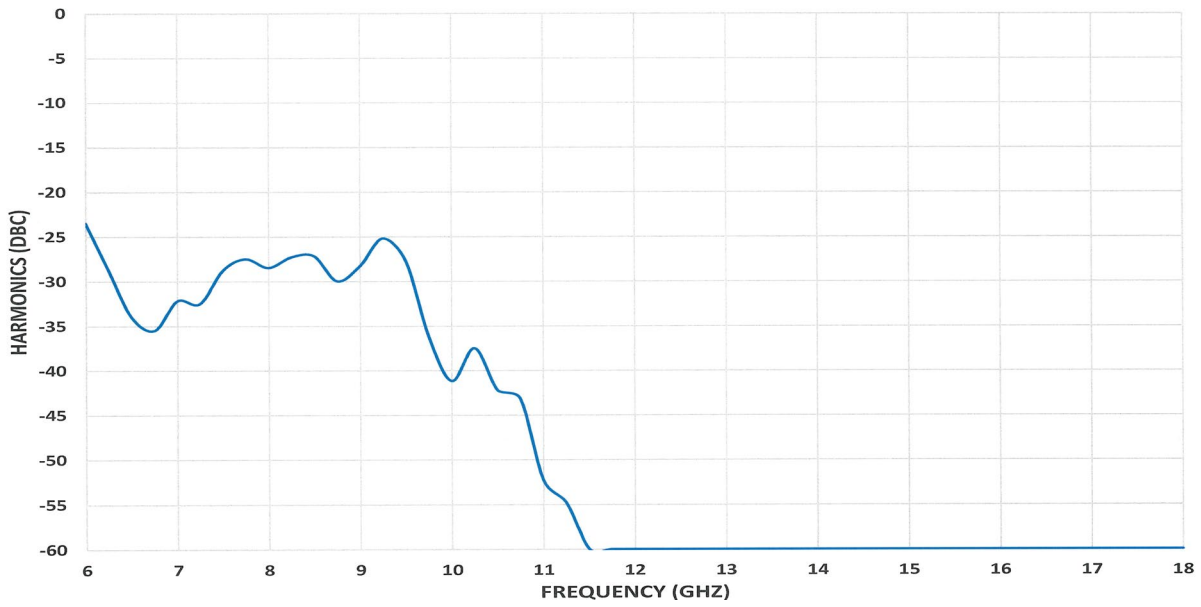
TYPICAL SMALL SIGNAL GAIN @ -20dBm INPUT



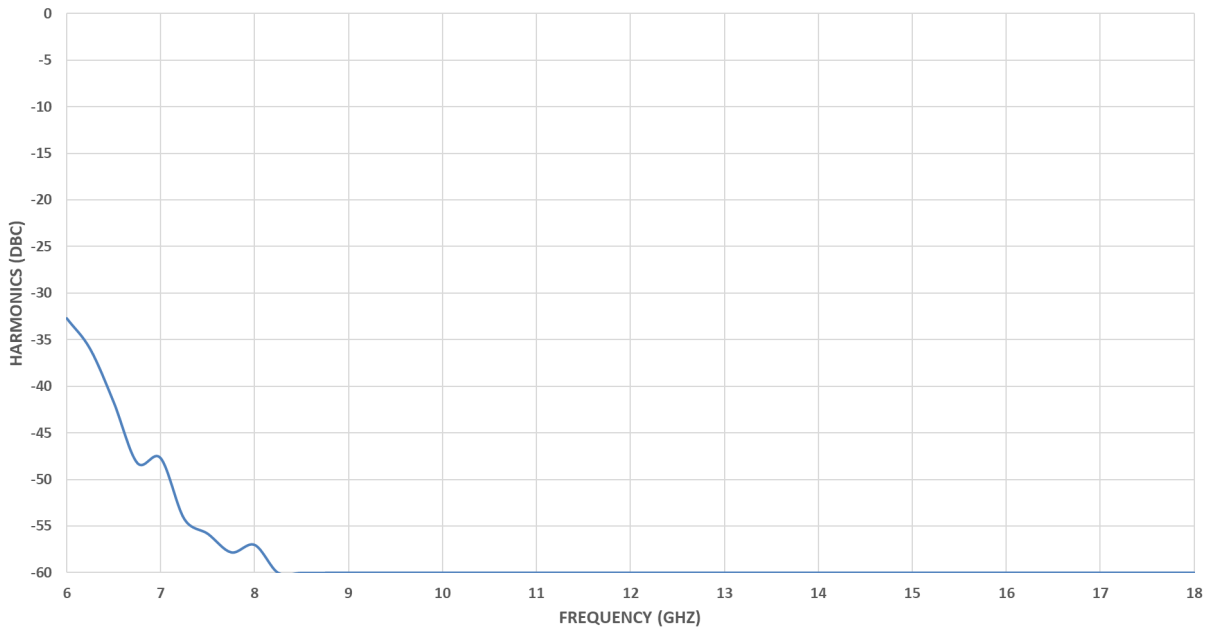
TYPICAL 2nd HARMONIC @ RATED POWER OUTPUT

Model 125S6G18C

- 125 W, 6.0 - 12.0 GHz
- 100 W, 12.0 - 18.0 GHz



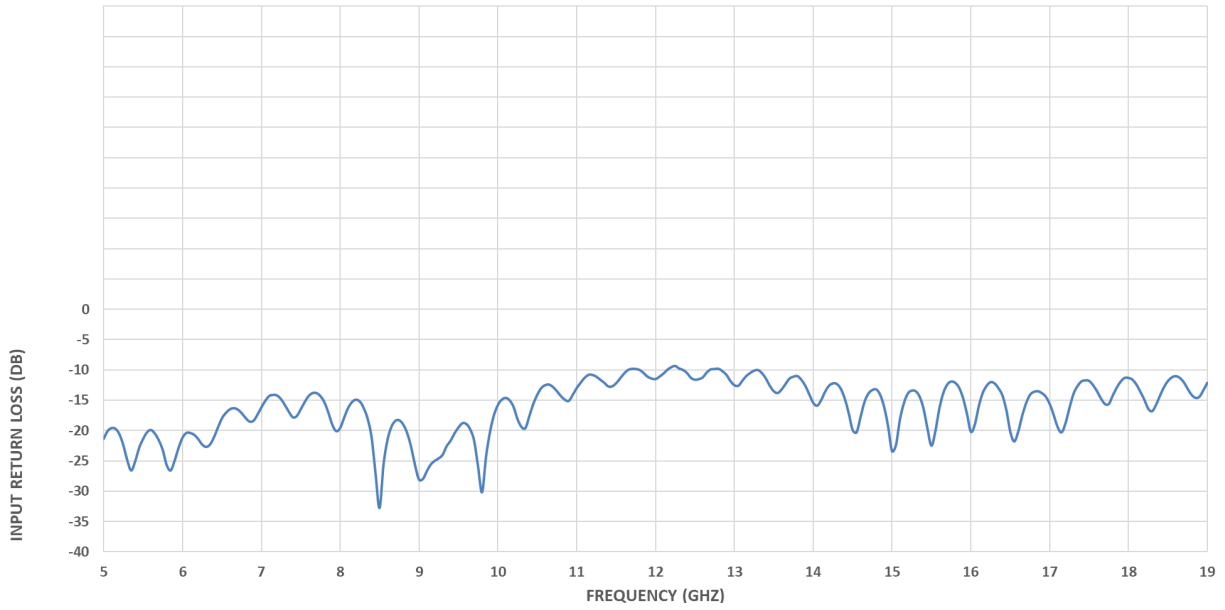
TYPICAL 3rd HARMONIC @ RATED POWER OUTPUT



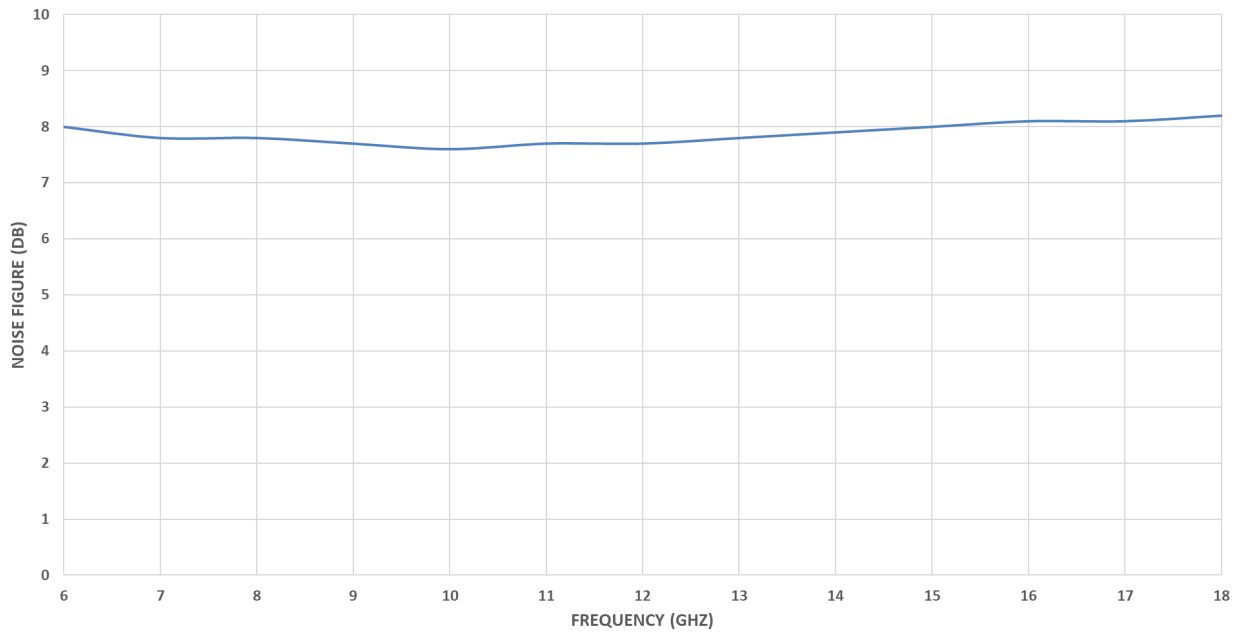
Model 125S6G18C

- 125 W, 6.0 - 12.0 GHz
- 100 W, 12.0 - 18.0 GHz

TYPICAL INPUT VSWR



TYPICAL NOISE FIGURE



Amplifier Research Corporation • 160 Schoolhouse Rd, Souderton, PA 18964

To order AR Products, call: 215.723.8181. For an applications engineer, call: 800.933.8181. Direct to Service call: 215.723.0275 or email: service@arworld.us

For Faxing Orders: 866.859.0582 (Orders Only Please) info@arworld.us

Approved for public release by Amplifier Research Corporation ISO 9001:2015 Certified • ISO 17025:2017 accredited

Revision 042624