



# Amplifiers

## Model 5000A225C

### Features:

- 5 kW CW, .01-225 MHz
- Class A design
- Built-in fault monitoring and protection
- Remote control: Ethernet, USB, GPIB, fiber-optic serial, RS-232
- Modular design for easy maintenance and service

### Applications:

- EMC (military, aviation, automotive, commercial)
- Radiated and conducted EMC testing
- General purpose, antenna, and component testing

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[www.arworld.us/amplifiers](http://www.arworld.us/amplifiers)

The Model 5000A225C 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 5 kW of RF power. 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.

Standard RF sample ports allow for forward and reverse power monitoring.

This is a high-power Class A amplifier. The low level of spurious signals and linearity make it ideal for EMC test applications where continued operation into high VSWR loads including open and short circuits is required.

The export classification for this equipment is EAR99. 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.

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ISO 9001:2015 Certified  
ISO 17025 :2017 Accredited



Model 5000A225C

- 5 kW
- .01-225 MHz

Electrical Specifications					
Parameter	Symbol	Minimum	Typical	Maximum	Unit
Rated Power Output (0.01 - 100 MHz)	PSAT	5000	5500	>6000	W
Rated Power Output (100 - 225 MHz)	PSAT	4000	4500	>5000	W
Input for Rated Output	Pin			1	mW
				0	dBm
Power Output @ 3dB Compression (0.01 - 100 MHz)	P3dB	5000	5500	>6000	W
Power Output @ 3dB Compression (100 - 150 MHz)	P3dB	4000	4500	>5000	W
Power Output @ 3dB Compression (150 - 225 MHz)	P3dB	3750	4250	>4500	W
Power Output @ 1dB Compression (0.01 - 100 MHz)	P1dB	4000	5000	>5500	W
Power Output @ 1dB Compression (100 - 150 MHz)	P1dB	3000	4000	>4500	W
Power Output @ 1dB Compression (150 - 225 MHz)	P1dB	2750	3250	>3500	W
Operating Frequency	BW	0.01		225	MHz
Gain (Small Signal)		67			dB
Gain Reduction Adjustment (when below gain compression)		0		20	dB
Flatness @ small signal (-20 dBm input)	$\Delta G$		$\pm 1.5$	$\pm 2.5$	dB
Input Impedance	Z in		50		Ohm
			1.5:1	2.0:1	VSWR
Output Impedance	Z out		50		Ohm
3 <sup>rd</sup> Order Intercept	IP3		+77		dBm
Noise Figure	NF		9.5		dB
Harmonic Distortion @ 3750 W	H2, H3		-30	-20	dBc
Harmonic Distortion @ Rated Power (Minimum)	H2, H3		-25	-15	dBc
Spurious			-70		dBc
Power Consumption	PD			17	kW



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### Absolute Maximum Rating

Exceeding any of the limits listed 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. Load mismatch above 6:1 may limit output reflected power to 50% of minimum rated power.			50	%
AC Power (3-phase) Low voltage option	200		240	VAC
AC Power (3-phase) High voltage option	380		415	VAC
AC Power	47		63	Hz
Ambient Temperature	+5	+25	+35	°C
Storage Temperature	-20		+50	°C
Altitude			2000	m
Shock/Vibration	Normal Truck Transport			

### Mechanical Specifications

Parameters		Unit
Dimensions (W x H x D) (35U Rack)	57.4 x 181 x 95.5	cm
	22.6 x 71.25 x 37.6	in
Weight	295	kg
	650	lb
Cooling	Forced air (self-contained fans) Front and side inlets / rear outlet $\Delta t = +10^{\circ}\text{C}$ (typical)	
Acoustical Noise (Measured @ 1 meter from the front)	81 (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	EAR99



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Connector interfaces	
Function	Type
RF input	N - female (50 Ω)
RF output	1-5/8 EIA - male (50 Ω)
RF Sample	N - female (50 Ω) (80 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
AC Input	5-meter harmonized power cord supplied with amplifier. The power cords are left open ended to allow for facility power connection of user's choice.

## Ordering Options

<b>5000A225C</b>	-		-	<b>N</b>	-	<b>R</b>	-	<b>158</b>	-		-	
<b>Model</b>				<b>RF IN Conn</b>		<b>RF OUT Conn</b>		<b>RF Sample</b>		<b>Primary</b>		<b>Power</b>
				Location, Type		Location, Type		Ports		Power		

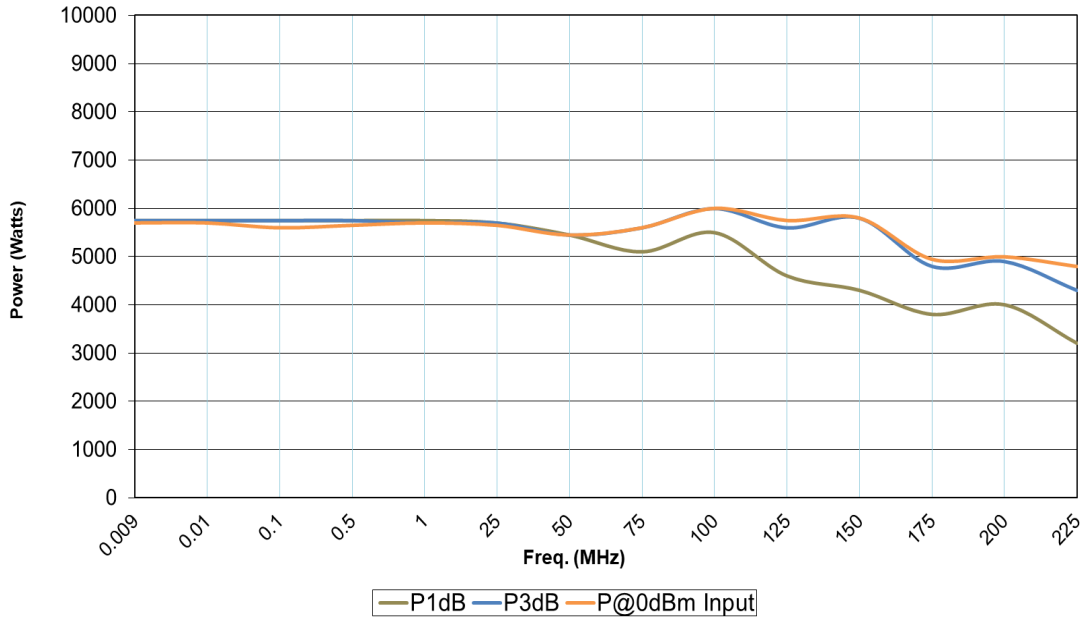
  

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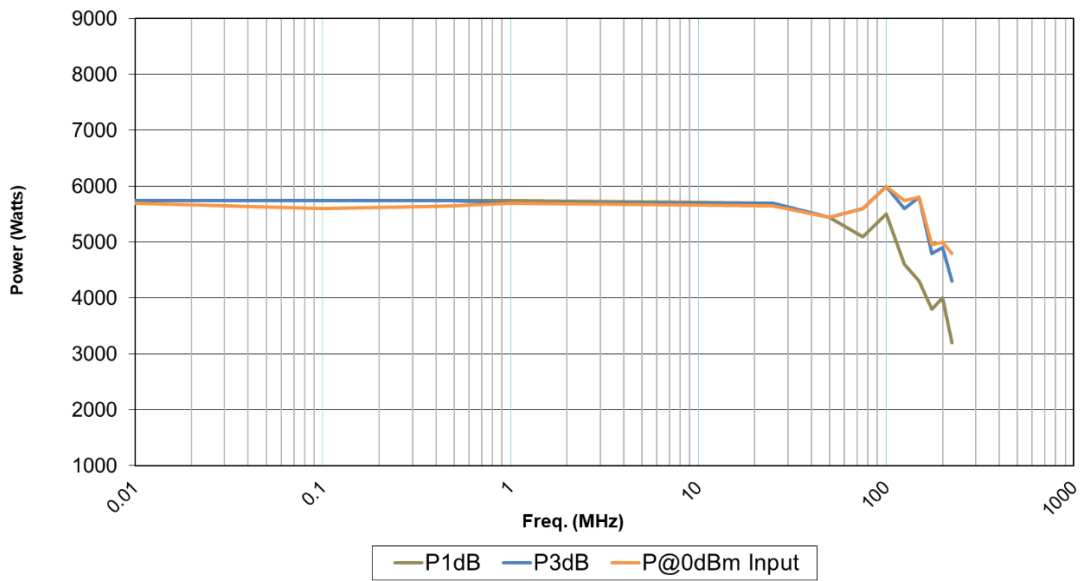


- 5 kW
- .01-225 MHz

TYPICAL OUTPUT POWER (LINEAR FORMAT)

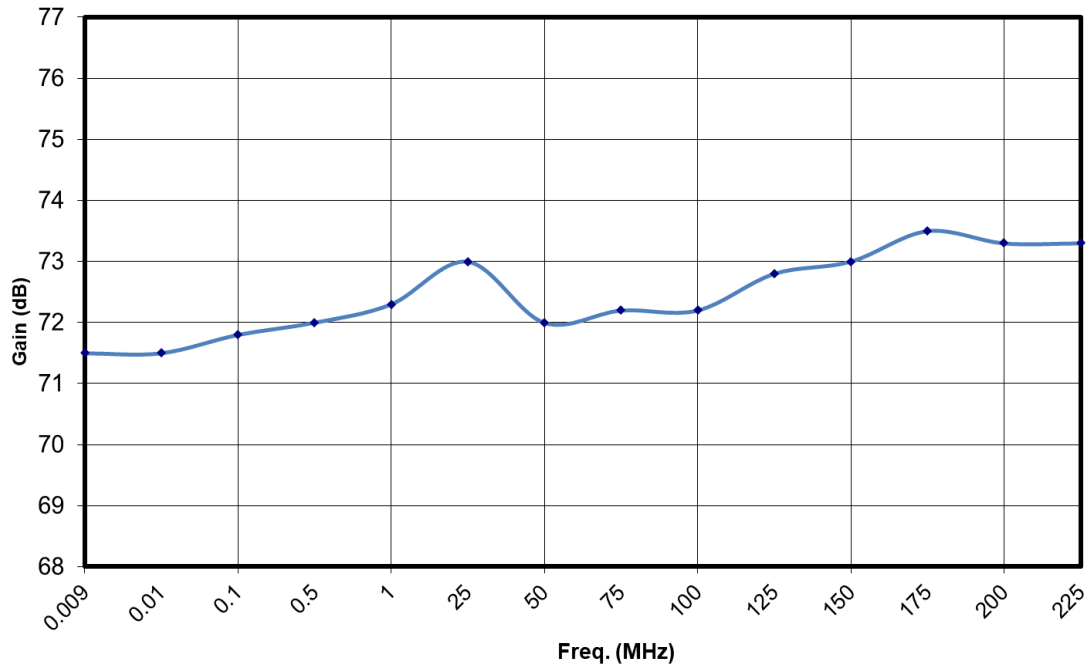


TYPICAL OUTPUT POWER (LOG FORMAT)

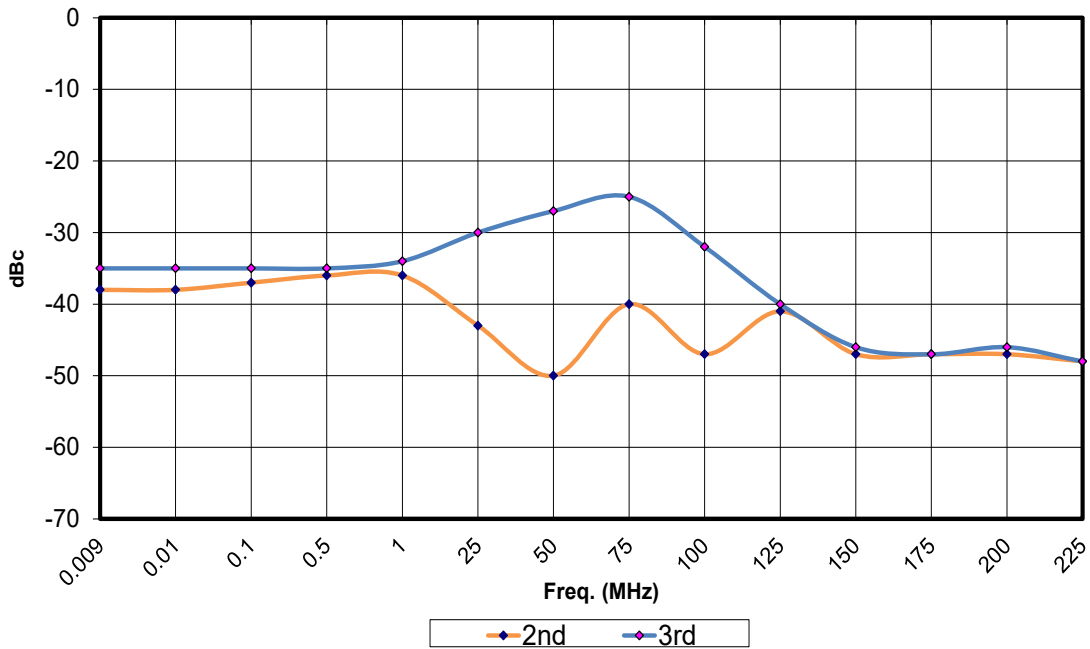


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TYPICAL SMALL SIGNAL GAIN @ -20dBm INPUT

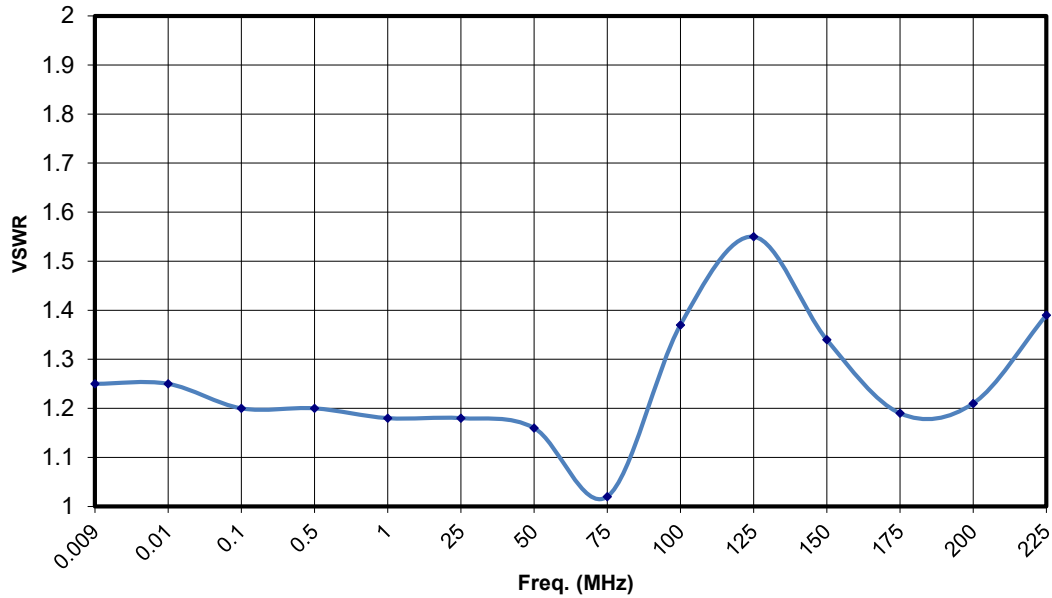


TYPICAL HARMONICS @ 3750 WATTS

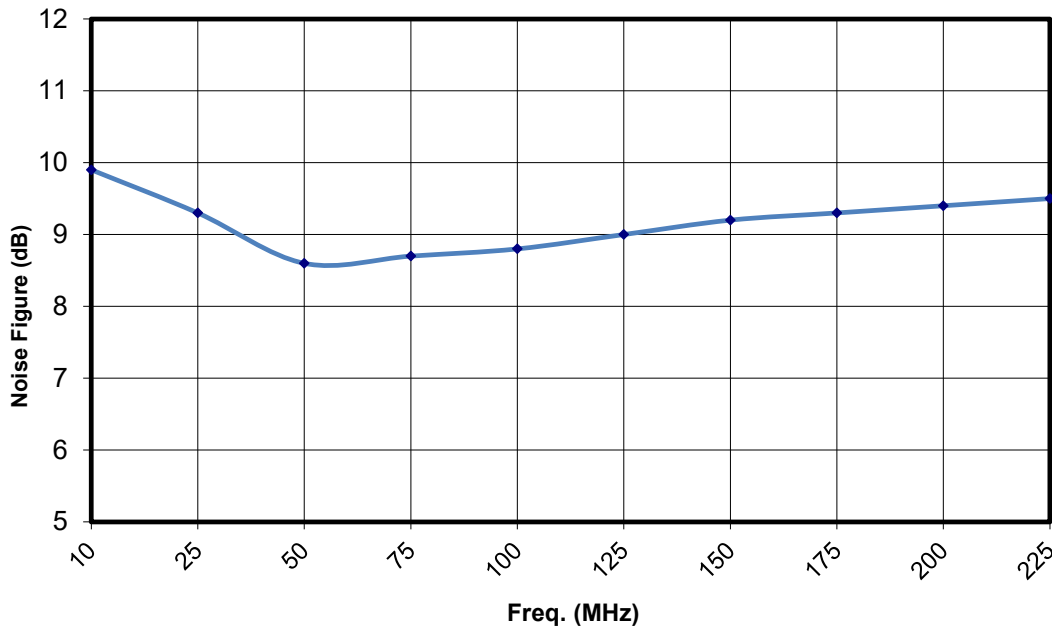


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TYPICAL INPUT VSWR



TYPICAL NOISE FIGURE



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