

Amplifiers

Model 5000A225D

Features:

- 5000 W CW, 10 kHz – 225 MHz
- Class A design
- 100% mismatch tolerant
- 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

To view our full amplifier portfolio visit: www.ar.ametek-cts.com

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ISO 9001: 2015 Certified
ISO 17025 :2017 Accredited

The updated 5000A225D is a solid-state, Class A design, self-contained, air-cooled, broadband power amplifier. It is designed for applications that require instantaneous bandwidth, high gain, and linearity. This amplifier provides a minimum of 5 kW of RF power and includes protection from input overdrive beyond 0 dBm, as well as protection from various failure conditions such as over-temperature and power supply faults.

An easy-to-read front panel display indicates the amplifier's operational status and fault conditions. All amplifier control functions and status indications are available remotely using GPIB/IEEE-488, RS-232, fiberoptic serial, USB, or Ethernet. The interface connectors are located on the back panel, and local and remote operation can be managed by a switch on the front panel.

Standard RF sample ports allow for forward and reverse power monitoring. This high-power Class A amplifier is ideal for EMC test applications due to its low level of spurious signals and linearity, allowing for continued operation into high VSWR loads.

The export classification for this equipment is EAR99, and it is controlled for export in accordance with the U.S. Export Administration Regulations. Diversion contrary to U.S. law is prohibited.



Model 5000A225D

- **5000 W**
- **10 kHz – 225 MHz**

Electrical Specifications

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Rated Power Output (0.01 – 100MHz)	PSAT	5000	5500	>6000	W
Rated Power Output (100 – 225MHz)	PSAT	4000	4500	>5000	W
Input for Rated Output	Pin			1	mW
				0	dBm
Power Output @ 3 dB Compression (0.01 – 100MHz)	P3dB	5000	5500	>6000	W
Power Output @ 3 dB Compression (100 – 150MHz)	P3dB	4000	4500	>5000	W
Power Output @ 3 dB Compression (150 – 225MHz)	P3dB	3750	4250	>4500	W
Power Output @ 1 dB Compression (0.01 – 100MHz)	P1dB	4000	5000	>5500	W
Power Output @ 1 dB Compression (100 – 150MHz)	P1dB	3000	4000	>4500	W
Power Output @ 1 dB Compression (150 – 225MHz)	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)	ΔG		±1.5	±2.5	dB
Input Impedance	Z in		50		Ohm
			1.5:1	2.0:1	VSWR
Output Impedance	Z out		50		Ohm
3rd 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

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	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	60	63	Hz
Ambient Temperature	+5	+25	+35	°C
Storage Temperature	-20		+50	°C
Altitude			2000	m
Shock/Vibration	Normal Truck Transport			

Mechanical Specifications		
Parameters	**Typical**	**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)	
Acoustic Noise Measured @ 1 Meter	81	dBA

Connector Interfaces	
Function	**Type**
RF Input	N, female, rear (50 Ω) (option front)
RF Output	1-5/8 EIA, male, rear (50 Ω) (option front)
RF Sample	N, female, rear (50 Ω) (67dB typical) (option front)
IEEE-488	24-pin
RS-232	9 pin subminiature D
Ethernet	RJ-45
RS-232 (fiber optic)	ST
USB 2.0	Type B
Interlock	15-pin subminiature D

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

Ordering Options

5000A225D	-		-	N	-	R	-	158	-		-	
Model		**RF IN Conn Location, Type**				**RF OUT Conn Location, Type**				**Primary Power**		**RF Sample Ports**

CONNECTOR LOCATION	
Front	F
Rear	R

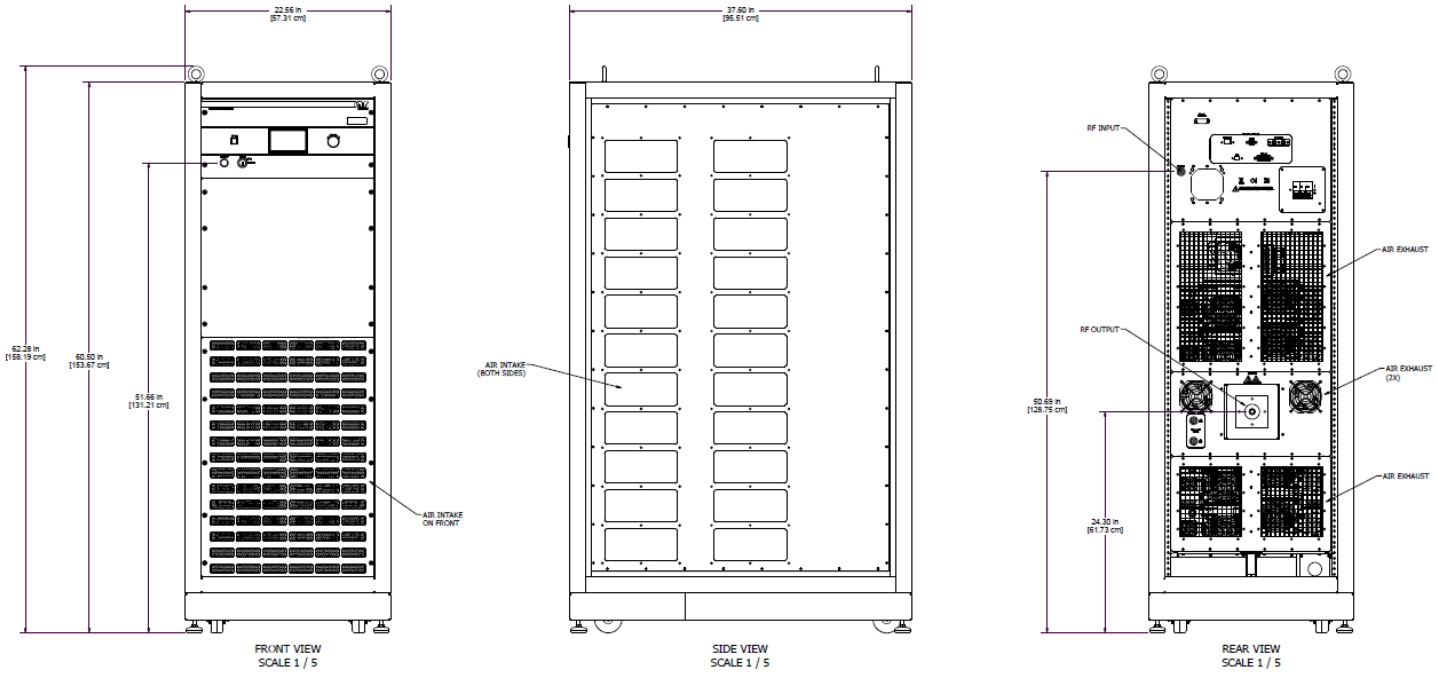
RF SAMPLE PORTS	
Front	SPF
Rear	SPR

PRIMARY POWER	
200-240 VAC	LV
380-415 VAC	HV

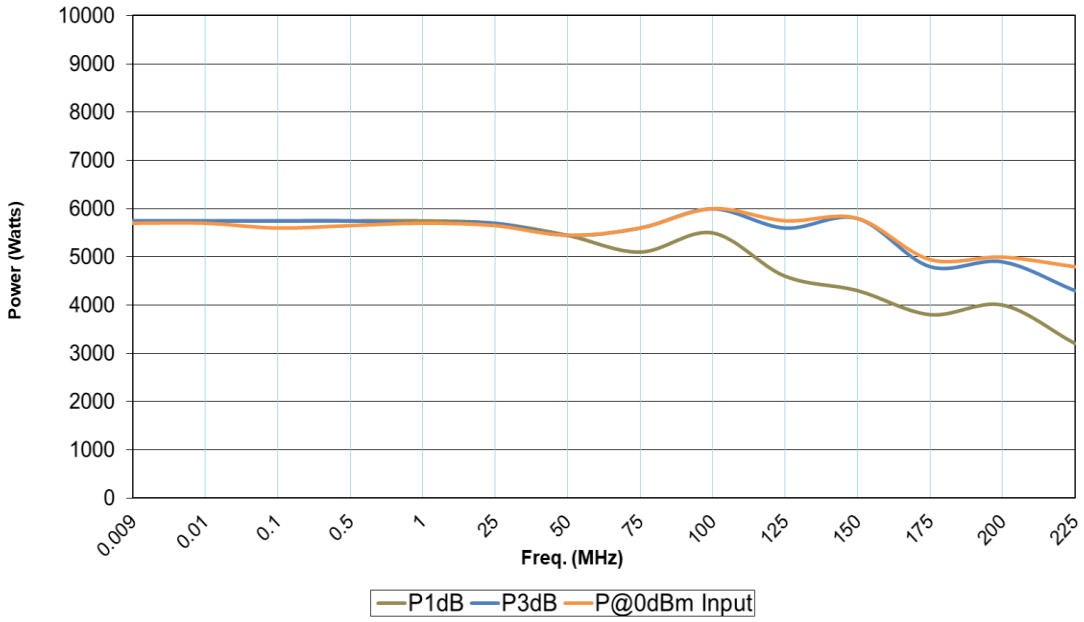
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- **10 kHz – 225 MHz**

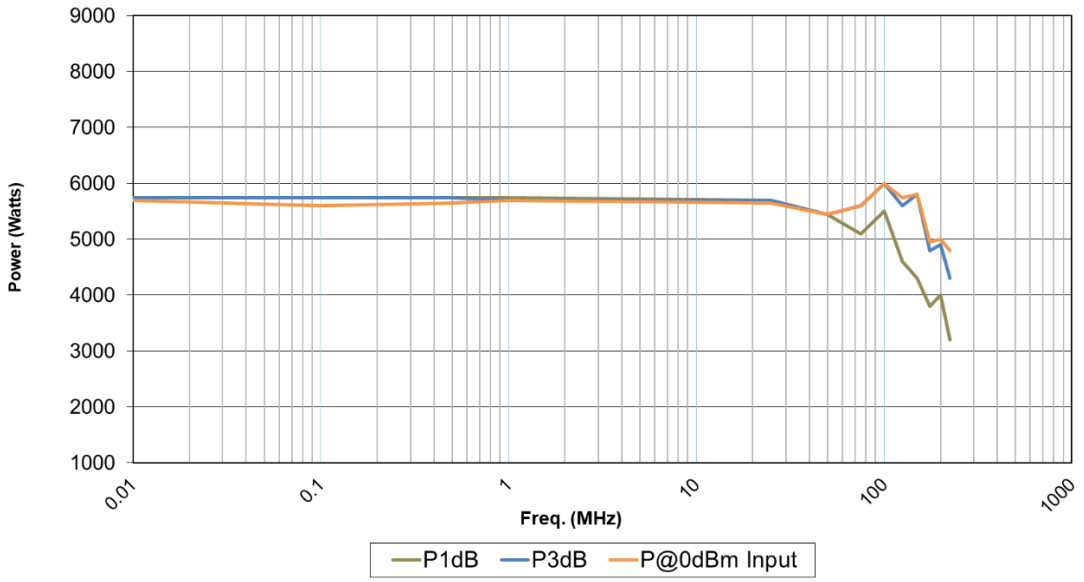
Envelope Drawing



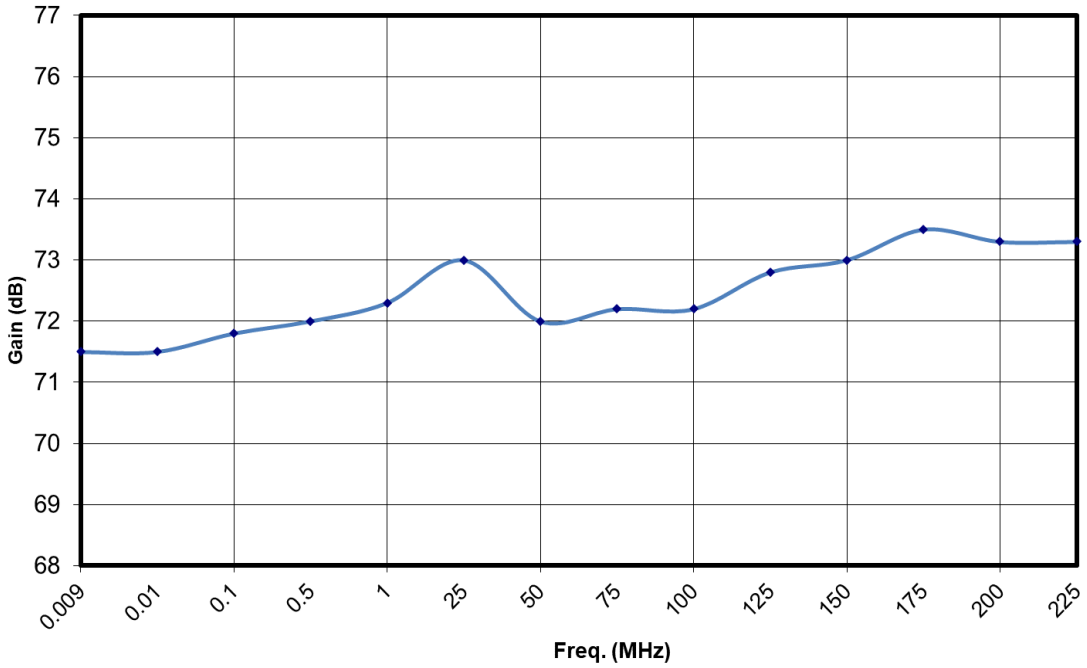
TYPICAL OUTPUT POWER (LINEAR FORMAT)



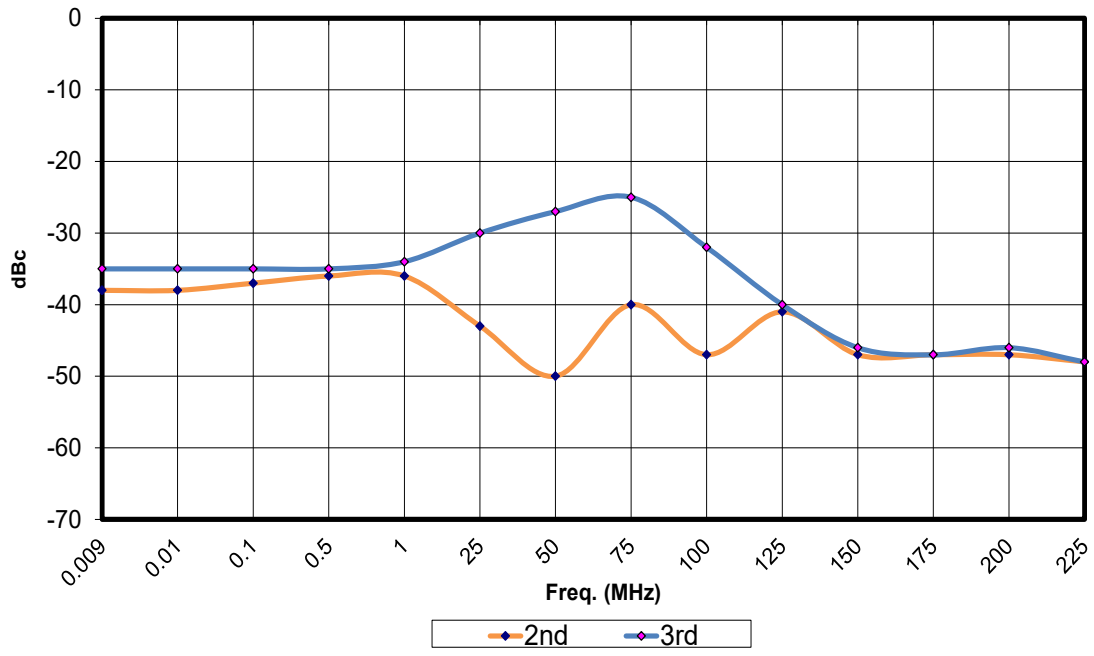
TYPICAL OUTPUT POWER (LOG FORMAT)



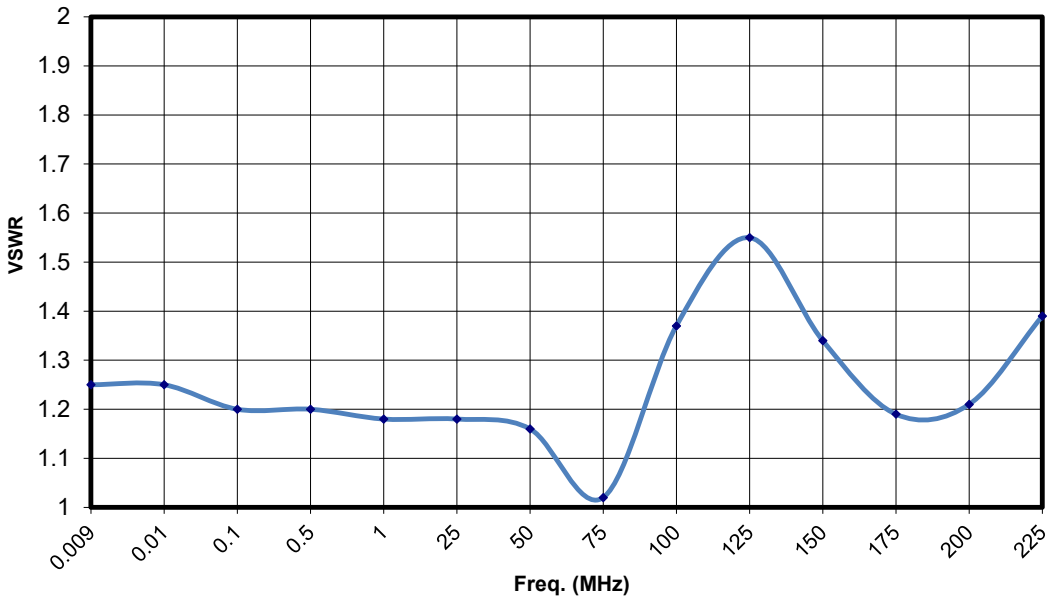
TYPICAL SMALL SIGNAL GAIN @ -20dBm INPUT



TYPICAL HARMONICS @ 3750 WATTS



TYPICAL INPUT VSWR



TYPICAL NOISE FIGURE

