Amplifiers

Model 2500A225D

Features:

- 2500 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
- Low acoustical noise

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 2500A225D is a solid-state, Class A design, self-contained, air-cooled, broadband power amplifier. It is designed for applications requiring high gain, linearity, and instantaneous bandwidth, providing a minimum of 2.5 kW of RF power. The amplifier is equipped with protection from input overdrive beyond 0 dBm, as well as protection from various failure conditions including over-temperature and power supply faults.

Operational status and fault conditions are indicated on the front panel display. The amplifier control functions and status indications are accessible remotely using GPIB/IEEE-488, RS-232, fibre-optic serial, USB, or Ethernet. The interface connectors are located on the back panel, and local and remote operation can be managed using 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. It can continue operation into high VSWR loads.

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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- **2500 W**
- **10 kHz – 225 MHz**

Electrical Specifications

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Rated Power Output (0.01 – 100MHz)	PSAT	2500	2800	>3000	W
Rated Power Output (100 – 225MHz)	PSAT	2000	2300	>2500	W
Input for Rated Output	Pin			1	mW
				0	dBm
Power Output @ 3 dB Compression (0.01 – 100MHz)	P3dB	2500	2800	>3000	W
Power Output @ 3 dB Compression (100 – 200MHz)	P3dB	2000	2300	>2500	W
Power Output @ 3 dB Compression (200 – 225MHz)	P3dB	1800	2000	>2000	W
Power Output @ 1 dB Compression (0.01 – 100MHz)	P1dB	2000	2400	>2700	W
Power Output @ 1 dB Compression (100 – 200MHz)	P1dB	1500	1900	>2100	W
Power Output @ 1 dB Compression (200 – 225MHz)	P1dB	1300	1500	>1600	W
Operating Frequency	BW	0.01		225	MHz
Gain (Small Signal)		64	69		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		70		dBm
Noise Figure	NF		7.0		dB
Harmonic Distortion @ 1750 W	H2, H3		-40	-20	dBc
Harmonic Distortion @ Rated Power (Minimum)	H2, H3		-25	-15	dBc
Spurious			-70		dBc
Power Consumption	PD			8000	W

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) (26U Rack)	57.4 x 136 x 67.1	cm
	22.6 x 53.5 x 26.5	in
Weight	204	kg
	450	lb
Cooling	Forced air (self-contained fans)	
Acoustic Noise Measured @ 1 Meter	78	dBA

Connector Interfaces	
Function	**Type**
RF Input	N, female, rear (50 Ω) (option front)
RF Output	7-16 DIN female, rear (50 Ω)
RF Sample	N, female, rear (50 Ω) (64dB 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

2500A225D	-		-	N	-		-	716	-		-	
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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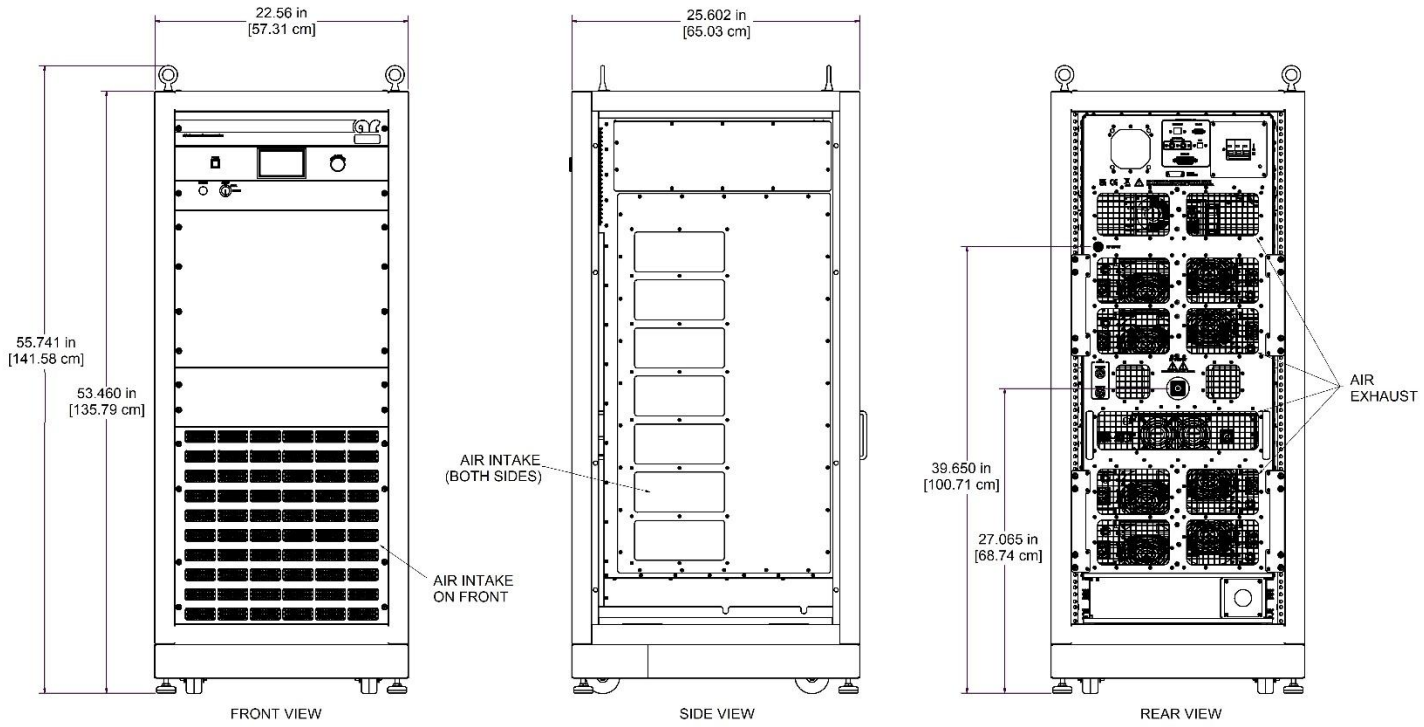
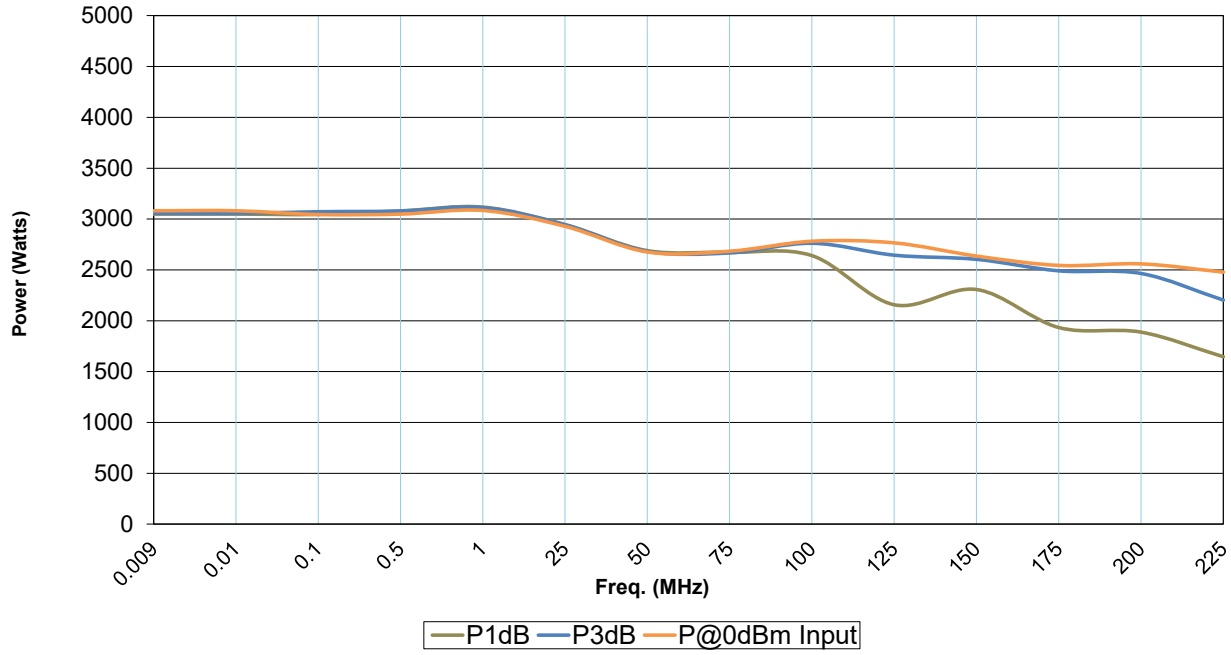
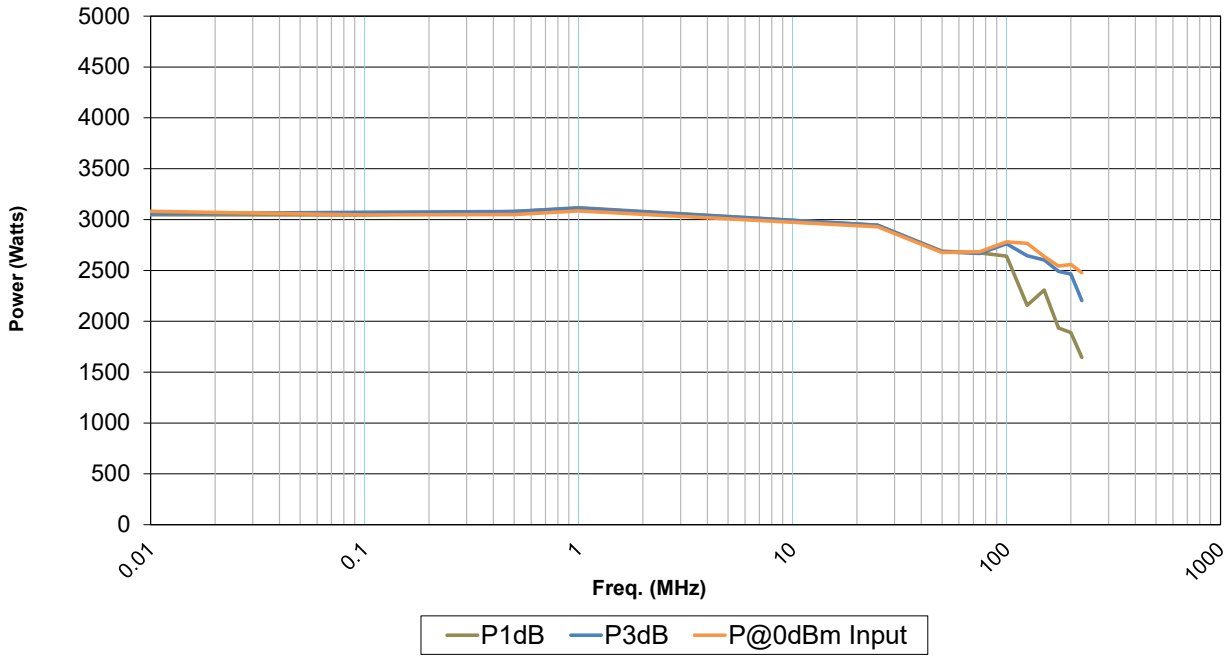
Envelope Drawing



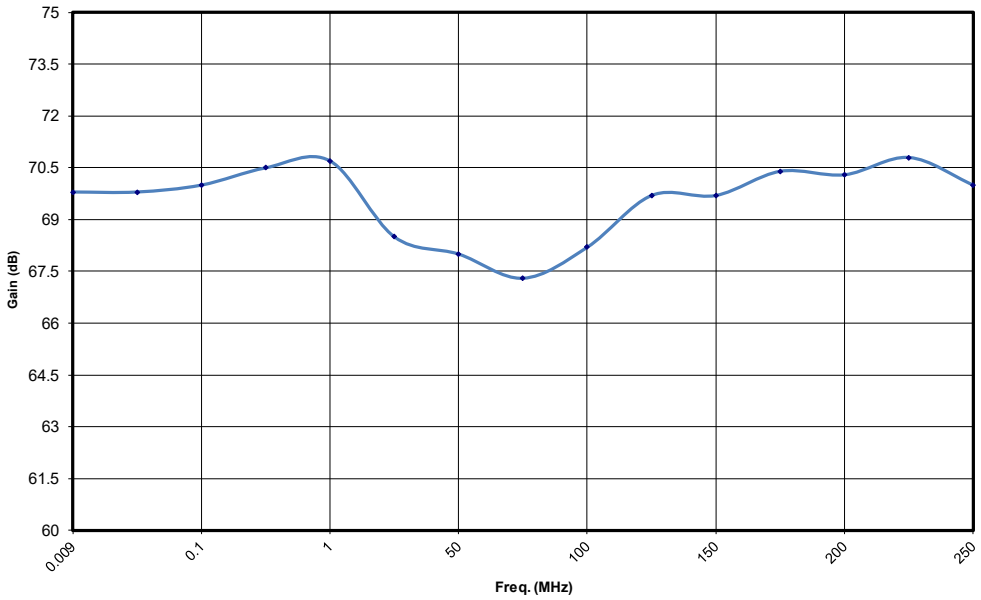
TYPICAL OUTPUT POWER (LINEAR FORMAT)



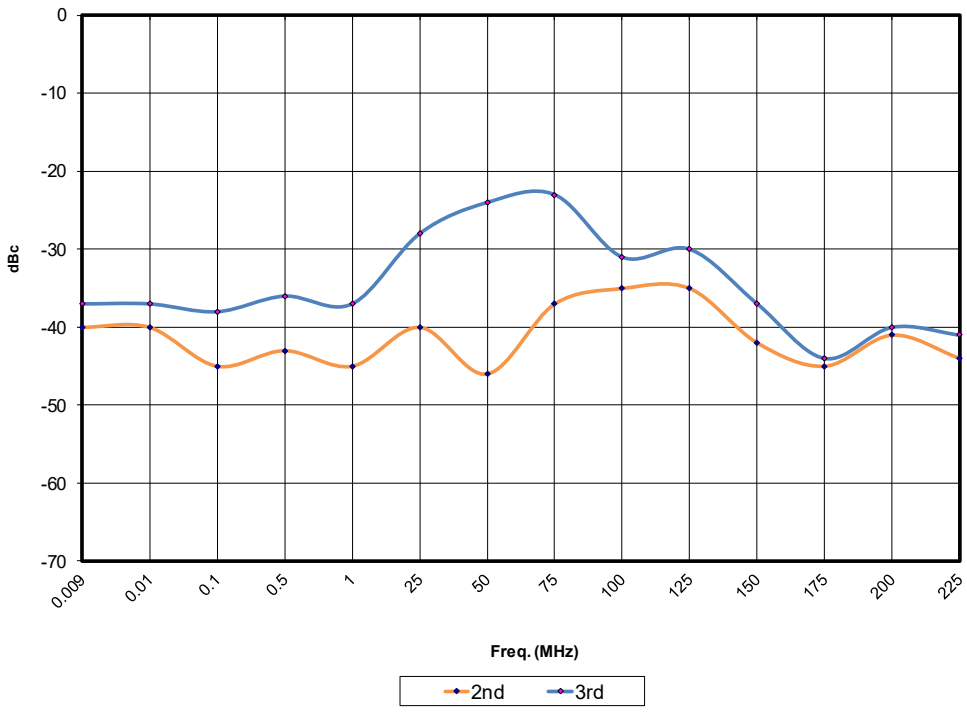
TYPICAL OUTPUT POWER (LOG FORMAT)



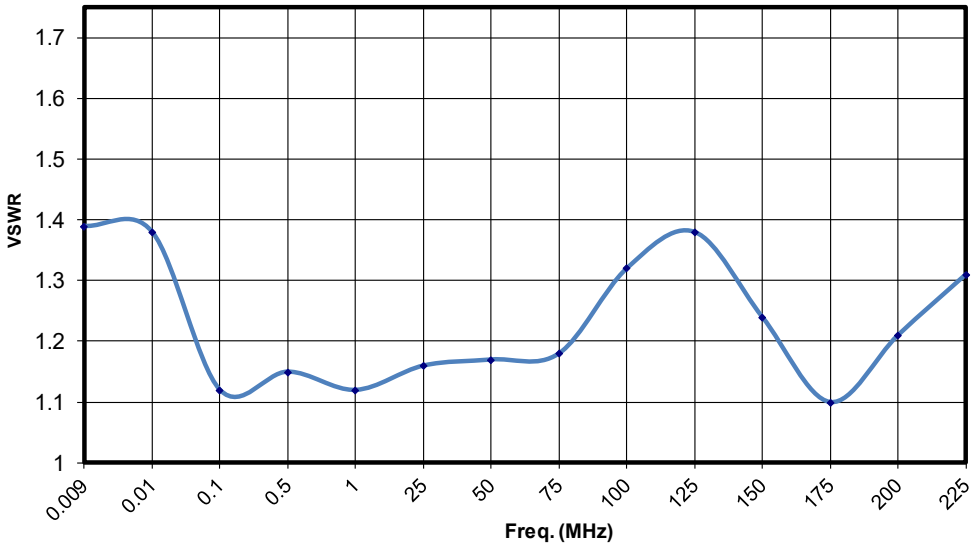
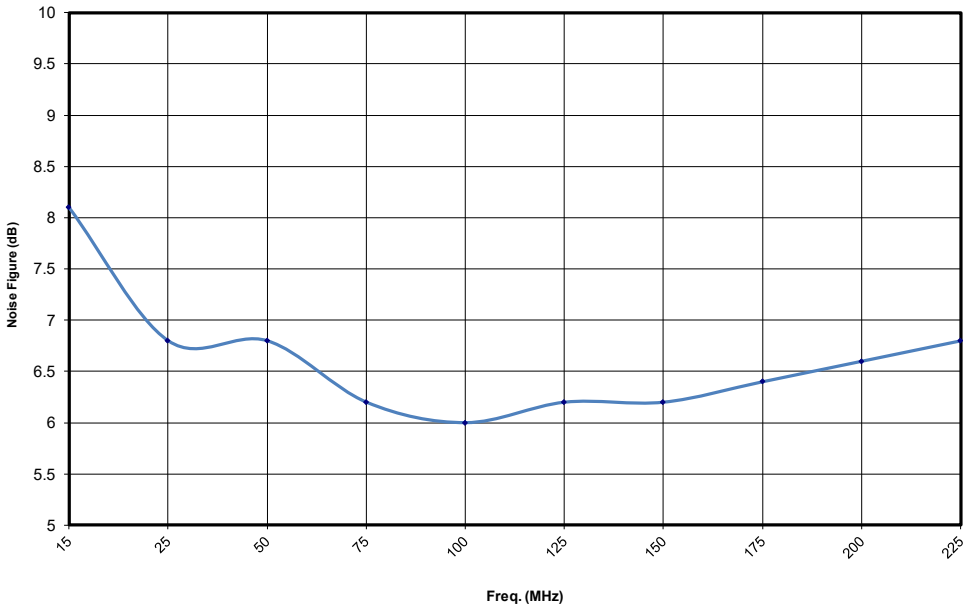
TYPICAL SMALL SIGNAL GAIN @ -20dBm INPUT



TYPICAL HARMONICS @ 1750 WATTS



TYPICAL INPUT VSWR



TYPICAL NOISE FIGURE