

An excellent alternative to traveling wave tube amplifiers, POAM – PA3436250V5 is a solid-state Power Amplifier with an operating range of 34-36 GHz while achieving a minimum of 54 dBm (250 Watts) of instantaneous saturated power. With its maximum performance in gain, efficiency, signal flatness, and RF output power, this SSPA is the ideal building block for millimeter-wave sub-systems with wide-ranging applications.

Product Features

- Frequency Range: 34– 36 GHz
- Saturated Power: 54 dBm
- Solid State MMIC Reliability
- Multi-Element Redundancy
- Instant On (no warm-up)
- **IP68 protection**
- Ultra-low weight (only 12kg)
- small in size: 320 x 283 x 205 mm

Application:

- Radar
- Satellite communication
- TWTA Replacement





SOLID STATE POWER AMPLIFIER 250W KA-BAND

PART NO.: PA3436250V5

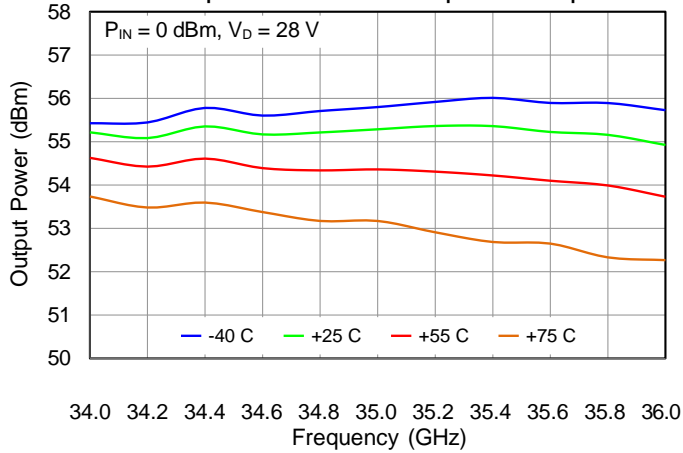
Electrical Specifications

Parameter	Min	Typ.	Max	Units
Frequency	34		36	GHz
Output Power (Pulsed, PIN = 0 dBm)		54		dBm
Input Power (Pulsed)	-2	0	+6	dBm
Gain Flatness vs Freq. (Pulsed, PIN = 0 dBm)		0.6		dB
Pulse Droop (PW=50 us, F=35 GHz, PIN=0 dBm)				
-40 C		0.7		dB
+25 C		0.8		dB
+55 C		1.0		dB
+75 C		1.6		dB
Rise/Fall Time (PW=20 ns, F=35 GHz, PIN=0 dBm)				
-40 C		5.0 / 2.9		ns
+25 C		5.8 / 3.1		ns
+55 C		6.4 / 3.1		ns
+75 C		9.3 / 3.4		ns
Input Return Loss (CW)		13		dB
DC Power (average)		1100		W
Input RF Interface J1	WR-28 Waveguide			
Output RF Interface J2	WR-28 Waveguide			
Auxiliary Interface J5	D38999/20WB35SN MPHENOL			
Power Interface J3 & J4	D38999/20WD18PN AMPHENOL			
Total Weight		12		kg
Total Dimensions (L) x (W) x (H)		320 x 283 x 205		millimeters
IP Rating		IP68		
Cooling	Heatsink & Forced Air fan (IP68)			

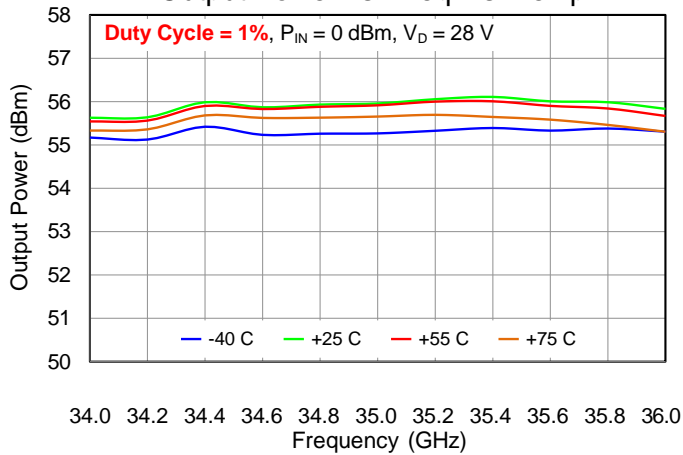
Typical Performance

Conditions unless otherwise specified: $V_D = +28\text{ V}$, $I_{DQ} = 6\text{ A}$, $P_{IN} = 0\text{ dBm}$, Pulse Width = 5 us, Duty Cycle = 50%

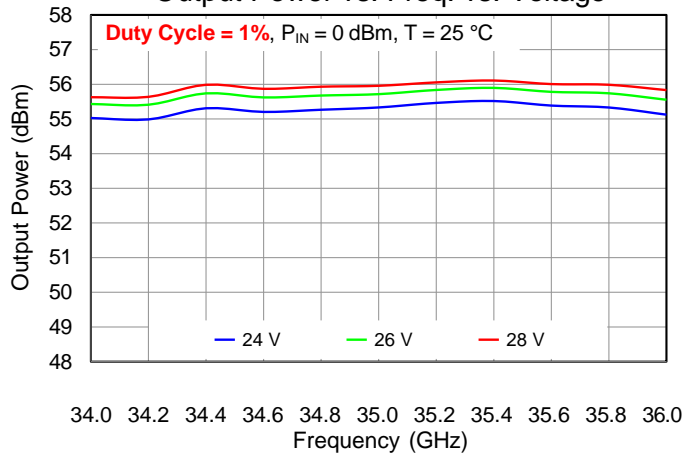
Output Power vs. Freq. vs. Temp.



Output Power vs. Freq. vs. Temp.

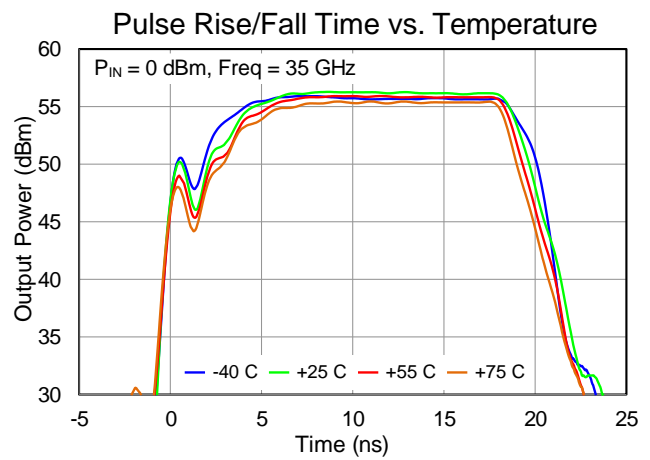
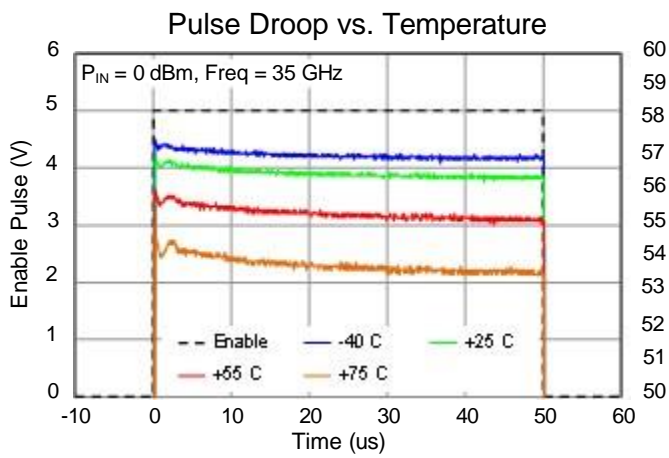


Output Power vs. Freq. vs. Voltage



Typical Performance

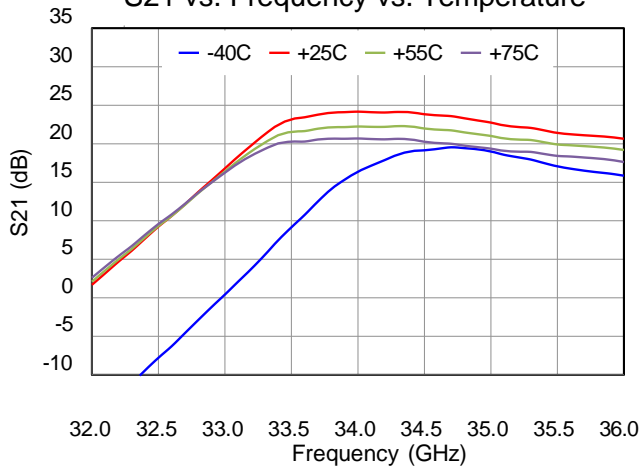
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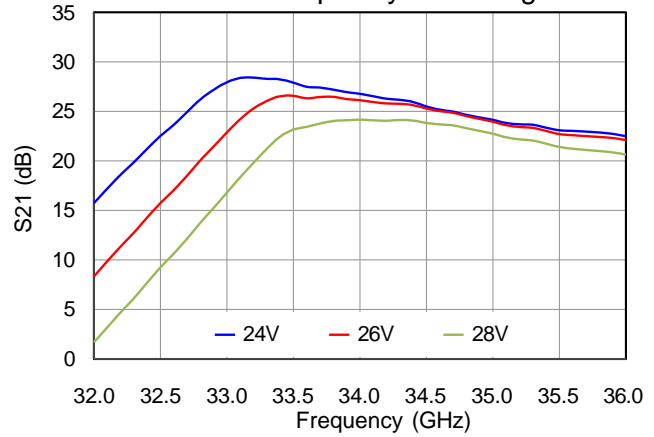
Typical Performance

Conditions unless otherwise specified: $V_D = +28\text{ V}$, $I_{DQ} = 6\text{ A}$, $P_{IN} = 0\text{ dBm}$, Pulse Width = 5 us, Duty Cycle = 50%

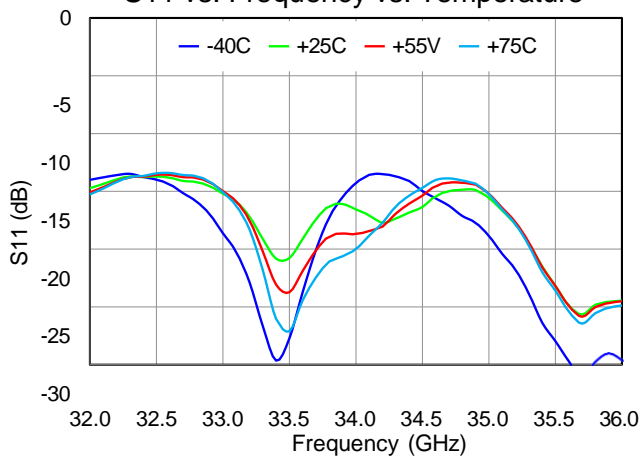
S21 vs. Frequency vs. Temperature



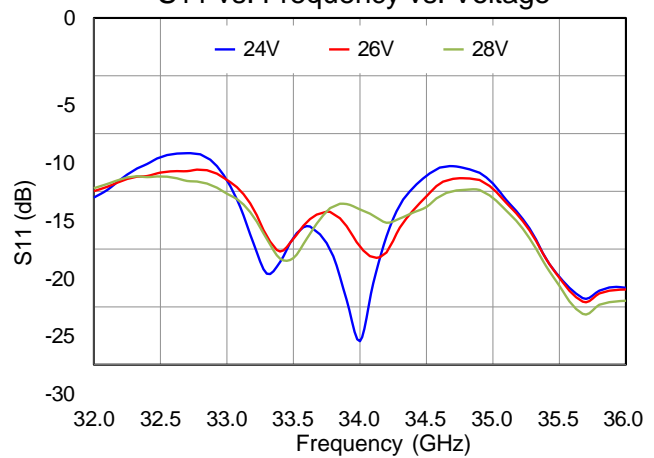
S21 vs. Frequency vs. Voltage



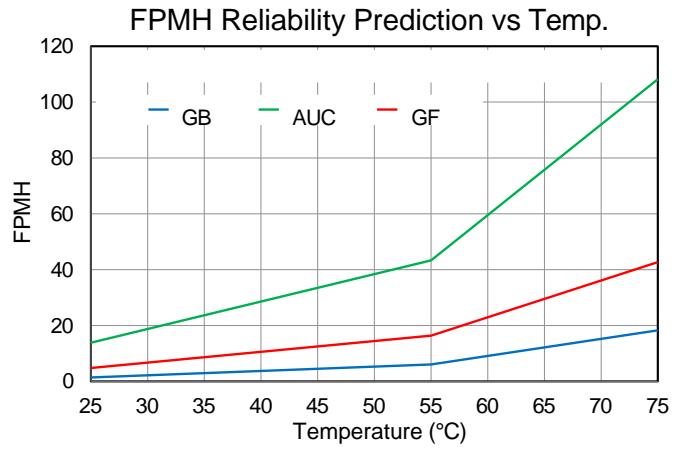
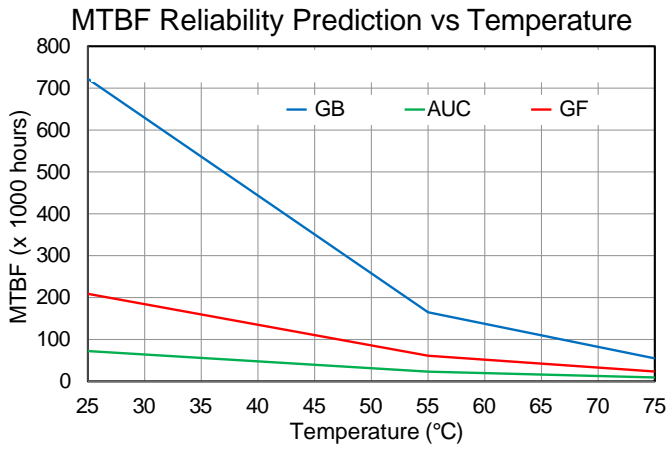
S11 vs. Frequency vs. Temperature



S11 vs. Frequency vs. Voltage



Reliability Information



Calculations derived from MIL-HDBK-217F

Operational environments are:

GB – Ground Benign

GF – Ground Fixed

AUC – Airborne Uninhabited Cargo

Connectors pins layout

Auxiliary connector PIN-OUT for J5:

Connector name/type: D38999/20WB35SN (AMPHENOL 13 pins circular connector)

J5 AUXILIARY			
	PIN	SIGNAL	
SSPA AUXILIARY	1	RS422 Tx+	Heath, Temp, Voltage, and current monitoring
	2	RS422 Tx-	
	3	RS422 Rx+	
	4	RS422 Rx-	
	5	RS422 Tx+	Enable and disable SSPA 5V logic command bit to turn on/off the drain voltage. 0V puts the unit into a low-power state while 5V will allow normal operation. In the absence of an external logic signal (open), the amplifier will power on with the application of the supply voltage.
	6	RS422 Tx-	
	7	RS422 Rx+	
	8	RS422 Rx-	
	9	Logic ground	
	10	Logic ground	
	11	Free	
	12	Free	
	13	Free	

Connector PIN-OUT for J3 & J4:

Connector name/type: D38999/20WD18PN (AMPHENOL 18 pins circular connector)

J3 & J4 POWER PIN-OUT		
	PIN	SIGNAL
SSPA POWER	1	+28VDC
	2	+28VDC
	3	+28VDC
	4	+28VDC
	5	+28VDC
	6	+28VDC
	7	+28VDC
	8	+28VDC
	9	+28VDC
	10	GND
	11	GND
	12	GND
	13	GND
	14	GND
	15	GND
	16	GND
	17	GND
	18	GND



Handling Precautions



Caution!
ESD-Sensitive Device

RF VOLTAGE HAZARD: Contact with RF fields at the output connector can cause burns or electric shock. High levels of RF/Microwave energy may be present when the unit is operating.

HIGH DC CURRENT HAZARD: High levels of DC current are present when the unit is operating.

Contact Information

For the latest specifications, additional product information, worldwide sales and distribution locations:

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Email: sales@poamelectronics.com

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