

FEATURES

Class AB GaN Devices
Designed for X-Band Pulse applications
Built-in protection circuits
High reliability and ruggedness

ELECTRICAL SPECIFICATIONS

Parameter	Specification	Notes
Operating Frequency Range	9100 - 9500 MHz	BW = 400 MHz
Peak Pulse Output @ Psat	56 dB Min / 56.5 dBm Typ	
Peak Pulse Output @ P1dB	55 dBm Min	
Saturated Gain	56 dB Min	
Max Input Power	+10 dBm	No damage
Power Gain Flatness	±1.0 dB Max	
Gain Stability Over Temperature	±0.3 dB Max	
Input VSWR	1.5 : 1 Max	Relative to 50 Ohm
Output VSWR	2.0 : 1 Max	Relative to 50 Ohm
Harmonics	-35 dBc Max @ Psat	
Spurious	-65 dBc Max	
Pulse Width	60 µs Max	
Duty Cycle	20% Max	
PRF	5 KHz Max	
Pulse Droop	0.8 dB Max @ Psat	50 µs PW, 20 % Duty
Rise / Fall Time	75 nS Max @ Psat	
Switching Delay Time (Td)	300 nS Typical	
Noise Figure	10dB Max	
Operating Voltage	48 VDC ± 1.0 V	
Efficiency (PAE)	18 % @ Psat	
Quiescent Current	TBD	

ENVIRONMENTAL CHARACTERISTICS

Parameter	Specification	Note
Operating Case Temperature	-30 to +60 °C	
Storage Temperature	-40 to +70 °C	
Relative Humidity	5 to 95 %	Non Condensation

MECHANICAL SPECIFICATIONS

Parameter		Value
Dimensions	160 x 235 x 41 mm	Excluding Connectors
Weight	4 Kg. Max	
Cooling	External Heatsink	Forced air required



AMP3004P SOLID STATE HIGH POWER PULSE AMPLIFIER

• I/O INTERFACE

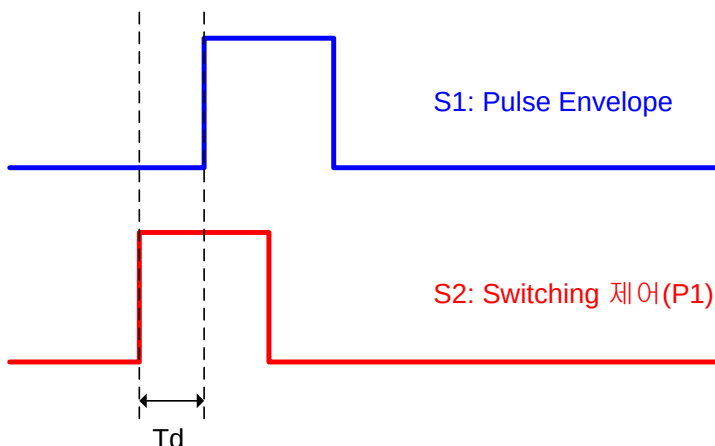
Parameters	Specifications			Remarks
RF Input Connector	SMA Female			
RF Output Connector	WR-90 Waveguide Type			Cover Flange
I/O Connector (17W2 Male Type)	A1	+48Vdc	I	
	A2	GND		
	P1	Switch_Control	I	Active High (TTL Level)
	P2	GND		
	P3	Temp_Monitor	O	0V ~ +1.5V (DC)
	P4	Current_Monitor_48V	O	0V ~ +4.5V (DC)
	P5	Voltage_Monitor_48V	O	0V ~ +4.5V (DC)
	P6	Current_Monitor_10V	O	0V ~ +4.5V (DC)
	P7	Voltage_Monitor_10V	O	0V ~ +4.5V (DC)
	P8	GND		
	P9	Temp_Atten_Control	I	(Option)
	P10	GND		
	P11	Gain_Atten_Control	I	0V ~ +4.5V (DC)
	P12	Input_Detector	O	0V ~ +2V (Pulse Envelop)
	P13	GND		
	P14	Enable	I	Active Low (TTL Level)
	P15	GND		

Note1: Attenuator for the Gain Control (P11)

3V at the control line will cause minimum attenuation (Maximum gain). 0V at the control line will cause maximum attenuation (Minimum gain). To control the output power by 1dB increment, output voltage must be controlled by the MCU with the look up table value.

Note2: Define Switch Control Signal: P1 (TTL 5V Level)

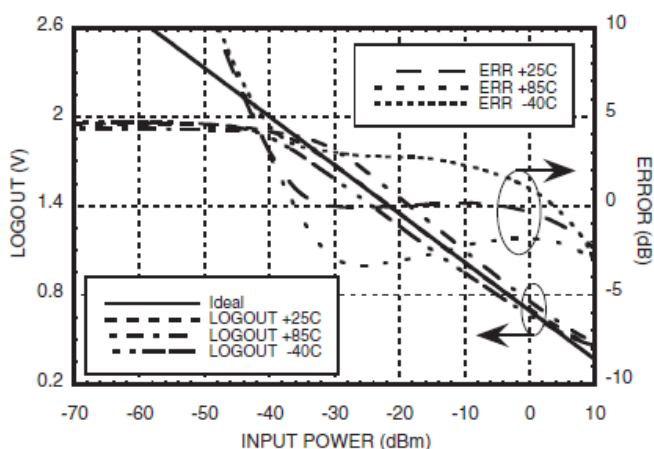
There has to be a switching signal (S2) with same width as the RF pulse signal (S1) that comes into the RF input port FIRST before S1 comes in. The Time Difference between S2 and S1 has to be minimum 200ns.



Note3: Input RF Detector (HMC611LP4E, Hittite)

The component for the input RF Detector is HMC 611LP4E from Hittite. For pulse Envelop detection, CLPF port is used in OPEN position.

**LOGOUT Voltage & Error
vs. Input Power, $F_{in} = 10000$ MHz**



• MECHANICAL OUTLINE (Unit: mm)

