

Microwave Power Module

M1291

Stellant's M1291 represents the state of the art in low-noise, compact, high-efficiency, millimeter-wave amplifiers for airborne, shipboard and ground military Ka-Band communications applications. This Microwave Power Module (MPM) contains a TWT, an SSA and a power supply. For applications requiring high linearity, an alternate version is available with 50 W of linear output power.

PERFORMANCE

Frequency	28.5 GHz to 40 GHz	
RF Output Power	80 W min (28.5 GHz to 36 GHz)	
	40 W min (36 GHz to 40 GHz)	
RF Input Power	0 dBm max	
Small Signal Gain	50 dB min	
Spurious	-45 dBc max (>1 MHz from carrier)	
Noise Power Density		
Beam On	-30 dBm/MHz	
Beam Off	-90 dBm/MHz	
VSWR Input	2.0:1 max	
Output	2.0:1 max	
Load (no damage)	3.0:1 max	

INTERFACE

Prime Power, operating	270 VDC (250 VDC to 280 VDC)		
	380 W max		
Prime Power, standby	50 W max		
Controls	HV on/off, RF on/off		
Digital Indicators	Warm-up complete indicator		
	Fault indicator		
	High-voltage indicator		
Analog Monitor	Helix current		
ENVIDONMENT			

ENVIRONMENT

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Temperature	-40 °C to +85 °C
Cooling	Conduction
Altitude	50,000 ft.
Humidity	Up to 100%, with condensation
Shock	20 g, 11 ms
Acceleration	8 g
Vibration	+3 dB/octave from 20 Hz to 80 Hz
	0.04 g ² /Hz from 80 Hz to 350 Hz
	-3 dB/octave from 350 Hz to 2,000 Hz

MECHANICAL DESCRIPTION

Dimensions	See outline
Weight	7.7 lb. max
RF Input Connector	2.9 mm (K) female
RF Output Connector	WR-28
Control Input Connector	D38999/20WC35PN
Power Input Connector	D38999/20WB99PN



KEY FEATURES

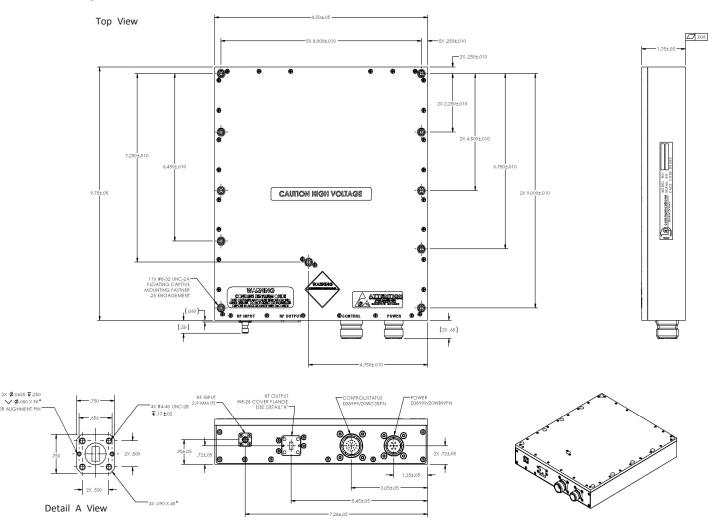
- * 28.5 GHz to 40 GHz
- * RF Output Power:
 - * 80 W min (28.5 GHz to 36 GHz)
 - * 40 W min (36 GHz to 40 GHz)



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Outline Drawing- All Dimensions in Inches



CONTROL CONNECTOR PINOUT					POWER CONNECTOR PINC		
PIN#	FUNCTION	SIGNAL FORMAT	NOTE	PIN#	FUNCTION	SIGN	
J4-1	RESERVED			J1-1	+270 VDC	POWER	
J4-2	RESERVED			J1-2	+270 VDC RETURN	POWER	
J4-3	ANALOG GROUND	GROUND		J1-3	+270 VDC RETURN	POWER	
J4-4	SPARE			J1-4	+270 VDC	POWER	
J4-5	SPARE			J1-5	SPARE		
J4-6	SPARE			J1-6	SPARE		
J4-7	HELIX CURRENT SENSE OUTPUT	ANALOG	200 mV/mA	J1-7	SAFETY GROUND	CHASS	
J4-8	BATTLE OVERRIDE INPUT	TTL	LOGIC 1 = OVERRIDE				
J4-9	SPARE						
J4-10	SPARE						
J4-11	SPARE						
J4-12	SPARE						
J4-13	RF CONTROL (BLANKING) INPUT	TTL	LOGIC 1 = BEAM ON				
J4-14	SIGNAL RETURN	DIGITAL					
J4-15	SIGNAL RETURN	DIGITAL					
J4-16	HIGH VOLTAGE INDICATOR	TTL	LOGIC 1 = HV OK				
J4-17	HIGH VOLTAGE CONTROL INPUT	TTL	LOGIC 1 = HV ON				
J4-18	MPM STATUS (FAULT) OUTPUT	TTL	LOGIC 1 = FAULT (HV, RF OFF)				
J4-19	WARM-UP INDICATOR	TTL	LOGIC 1 = WARM-UP (HV DISABLED)				
J4-20	SPARE						
J4-21	SPARE						

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