



# MPA1091M SOLID STATE HIGH POWER AMPLIFIER

## FEATURES

- Class AB GaAs linear design
- Instantaneous wide Bandwidth
- Suitable for CW, pulse and all single channel modulation standards
- Built-in protection circuits
- High reliability and ruggedness

## ELECTRICAL SPECIFICATIONS

Parameter	Specification	Notes
Operating Frequency Range	6.0 - 18.0 GHz	
Power Output Psat	1 Watt Min	CW
Power Output P1dB GCP	27 dBm Min - 28 dBm Max	CW
Gain @ P1dB GCP	26 dB Min - 29 dB Max	
Power Gain Flatness	2 dB p-p Max	
Gain Variation Over Temperature	±1.5 dB Max	
Input Return Loss	10 dB Min	Relative to 50 Ohm
Harmonics	-20 dBc Typ	At rated Pout
Noise Figure	6 dB Max	
Spurious	-60 dBc Max	Non-harmonics
Operating Voltage	12 - 15 VDC	
Current Consumption	1.2 Amp Max	At rated Pout
Max Input Power Protection	+8 dBm Max	<10 Sec without damage
Load VSWR Protection	5 : 1 Max	<1 minute @ rated Pout
Phase Tracking	±5 Deg Max	
Gain Tracking	±1.0 dB Max	
AM/PM	3 Deg/dB Max	Any Freq. across bandwidth

## ENVIRONMENTAL CHARACTERISTICS

Parameter	Specification	Notes
Operating Case Temperature	-20 to +70 °C	
Storage Temperature	-40 to +85 °C	
Relative Humidity	5 to 95 %	Non Condensation

## MECHANICAL SPECIFICATIONS

Parameter	Specification	Notes
Dimensions	75 x 20 x 10 mm	Excluding Connectors
Weight	TBD	
RF Connectors In/Out	SMA female	Cover Flange
DC Power	Feed Thru	
Mounting Holes	4 Nos., M 2.5 through holes	
Sealing	Hermetic	

## PIN ASSIGNMENT

Pin	Function	Description
1	DC Voltage	+15VDC
2	GND	GND

**Environmental Test Specifications:**

S. No	Test	Specification	Operational/ Non-operational
1.	BURN-IN	8 hours at Room Temperature	Operational
2.	Random Vibration	Random Spectrum 20-1000Hz: 0.04g <sup>2</sup> /Hz PSD, 3-axis, 1 Hr /axis.	Non-Operational
3.	Mechanical Shock	Shock Pulse: Half Sine Pulse Peak: 15g, Duration: 11msec. No. of Shocks: 18	Non-Operational
4.	Acceleration	3.6g along all 6 axes for 1min along each direction	Non-Operational
5.	High Temperature (Storage)	+85° C for 8 hrs (1cycle)	Non-Operational
6.	High Temperature (Operation)	+71° C for 30 min +60° C for 60 min +55° C for 4 hrs	Operational
7.	Combined Altitude, Temperature and Humidity (10 Cycles)	Temperature: -40° C to +60° C Altitude: 11 Kms RH : 75%	Operational
8.	Humidity Test (10 Cycles)	Temp: +30° C to +60° C RH 85% to 95% - 1 Cycle is 24 Hr	Non-Operational
9.	Salt Fog 4 Cycles	Exposure to 2Hrs Drying period: 22Hrs at 35o C, 1 Cycle is 24 Hours	Non-Operational
10.	Transit Drop	26 drops, 1 on each surface edge and corner Drop from 48" height (in package condition)	Non-Operational
11.	Bench Handling	4 drops on each face from 4" height or 45° angle whichever is less	Non-Operational
12.	EMI/EMC	MIL STD 461-E	

**General Terms and Conditions:**

Sl. No.	Specification
1	The firm has to provide the following with the quotation i. Mechanical outline, clearly indicating mounting details ii. Compliance matrix against each of the above specifications
2.	(i) The firm has to submit the detailed functional test procedure of the SSPA well in advance to MTRDC, if any suggestions/modifications involved in the procedure, the firm should implement the same before carrying out the tests at factory. (ii) Every SSPA Should be tested at the factory and test report of every SSPA should be submitted to MTRDC.