Email: sales @diamondmw.com
www.diamondmw.com

X-band Pulsed GaN High Power Amplifier (HPA)

Product Reference: DM-X400-02

Electrical performance specified at 40V, 20°C and into terminating VSWR <1.3:1 unless otherwise stated

Spec ref.	Description	Units	limits	Value	Comment
1.00	**Electrical Performance**				
1.01	Lowest Frequency	GHz		8.2	Will extend to 7.9GHz; output power may dip below specified minimum
1.02	Highest Frequency	GHz		9.5	Will extend to 9.6GHz; output power may dip below specified minimum
1.03	Peak pulsed output power (Psat)	W	min	400	At output of N-type connector into VSWR <1.3:1.
1.04	Output power variation (Psat)	dB	max	±1	Deviation from median power across the band
1.05	RF input power	dBm	max	0±1	
1.06	Saturated Power Gain	dB	nom	55	Depends on level of compression and input power
1.07	Pulse droop (on 100µs pulse)	dB	max	0.8	Typically 0.6dB
1.08	HPA turn on time (from standby)	ns	nom	200	Measured between 10% and 90% points. Can be customised to be faster
1.09	RF Gating Pulse width (min)	µs	min	2	Shorter time is feasible but not specified
1.10	Duty cycle	%	max	15	Not to be exceeded with any pulse width, or damage may occur
1.11	PRI	µs	min	13.3	At minimum pulse width only. Constrained by duty cycle.
1.12	Power Supply	Vdc	min	40	
1.13	Power supply variation	V	max	+0.5	
1.14	Mean DC current	A	max	8	At maximum (15%) duty
1.15	Power added efficiency @15% duty	%	min	20	At maximum (15%) duty
1.16	Termination return loss	dB	min	17.7	To achieve specified performance
1.17	Worst case load VSWR		max	3:1	Not to be exceeded, else damage may occur at high power output
1.18	Internal reservoir capacitance	µF	min	1000	Can be adjusted to suit requirements
2.00	**Environmental & Physical**				
2.01	Input RF connection			SMA-F	
2.02	Output RF connection			N-Female	
2.03	Operating temperature	°C		0 to +60	Heatsink required. Max temperature at interface must not exceed 60°C
2.04	Operating humidity level				Non-condensing atmosphere
2.05	Weight	kg	nom	2.25	
2.06	Ingress Protection rating	IP		55	
2.07	Dimensions (exc connectors & fixings)	mm		220x150x41	Diamond Microwave drawing ref: 02-00156x01
3.00	**Operating Modes**				
3.01	Standby (RF power output disabled)				HPA is enabled/disabled with "RF_Enable" signal (TTL or 3.3V LVCMOS). Signal high = HPA enabled
3.02	Pulsed (RF power ON)				Amplifier will amplify any CW or nested RF signal present at RF Input, during "RF_Gate" control pulse (TTL or 3.3V LVCMOS)
3.03	Alarm (Output)				Alarm signal (3.3V LVCMOS-Low) for any alarm state. Connect "Alarm" (externally) to "RF_Enable" to auto-disable HPA
4.00	**TCP/IP Control & Monitoring**				IP Address set prior to dispatch. LED indicates LAN status
4.01	Output Peak RF Power				Reported via webpage
4.02	Reflected Power				Reported via webpage
4.03	Termination return loss				Reported via webpage
4.04	Operating DC Voltage				Reported via webpage. Alarm and HPA disabled if threshold exceeded
4.05	Operating DC Current				Reported via webpage. Alarm if threshold exceeded
4.06	Electronics Temperature				Reported via webpage.
4.07	PA section Temperature				Reported via webpage. Alarm and HPA disabled if threshold exceeded
4.08	Duty cycle				Reported via webpage. Alarm and HPA disabled if threshold exceeded

End User undertaking is required for export licence application

Diamond Microwave Devices Ltd,
Salts Mill, Saltaire, Shipley, BD18 3LA, UK.
Registered in England No. 5882717
Tel: Tel: +44 (0)1274 535240

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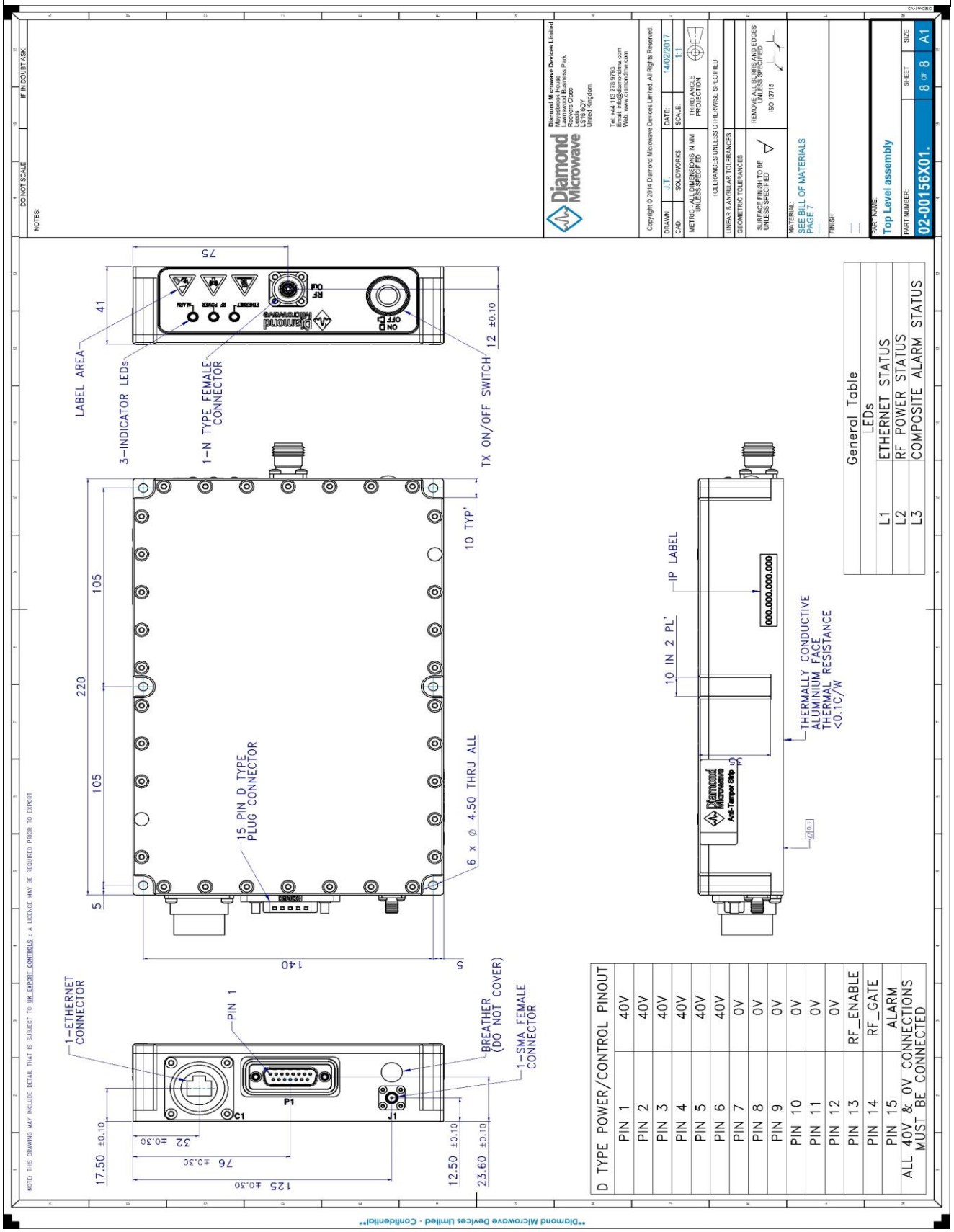

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