

		2-6GHz GaN High Power Amplifier (HPA)			
Product reference: DM-SC100-02					
Electrical performance specified at 28V, 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		2.0	
1.02	Highest Frequency	GHz		6.0	
1.03	Peak pulsed output power (Psat)	W	min	100	>80 watts 5 to 6 GHz
1.04	Peak CW output power (Psat)	W	min	100	>80 watts 5 to 6 GHz
1.05	Output power variation (Psat)	dB	max	±1.1	Deviation from median output power. 2-5GHz.
1.06	RF input power	dBm	max	0	Typically -5.0dBm to 0 dbm to achieve compressed Psat
1.07	Saturated Power Gain	dB	nom	55	
1.08	Linear (small-signal) gain	dB	nom	62	for <-10dBm input power.
1.09	Pulse droop	dB	max	1.0	Up to 100µs pulse width, from 10%-90% of pulse width.
1.10	HPA turn-on time (from standby)	ns	nom	250	From 50% TX-GATE signal edge to 50% RF out rising edge
1.11	TX Gating Pulse width	µs	min	1.0	Shorter time is feasible but not specified
1.12	Duty cycle (pulsed mode)	%	max	10.0	recommended maximum for <1dB pulse droop at 100µs pulse width
1.13	Power Supply	Vdc	min	28	
1.14	Power supply variation	V	max	+0.5	
1.15	Mean DC current (pulsed)	A	typ	0.8 - 1.8	At 10% duty. Depends on duty cycle, frequency and power output.
1.16	Mean DC current (CW)	A	typ	6.0 - 9.0	For sinusoidal input and 50W output.
1.17	Termination return loss	dB	min	17.7	To achieve specified performance
1.18	Worst case load VSWR		max	3:1	Not to be exceeded, or damage may occur at high power output
2.00	Environmental & Physical				
2.01	Input RF connection			SMA-F	Field replaceable. SMA-M also available
2.02	Output RF connection			SMA-F	Field replaceable. SMA-M also available
2.03	Operating temperature	°C		-40 to +60	Temperature at heat-sink interface to be maintained at <60°C
2.04	Operating humidity level				Non condensing atmosphere
2.05	Weight	kg	nom	0.75	
2.06	Ingress Protection rating	IP		55	
2.07	Dimensions (exc connectors & fixings)	mm		137x120x24	Diamond Microwave Drg ref: 02-00185x01 (See p2)
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	Continuous wave (CW. RF power ON)				Amplifier will continuously amplify any RF signal present at the RF Input when "RF_Gate" is high (TTL or 3.3V LVCMOS).
3.04	Alarm (Output)				Alarm signal (3.3V LVCMOS-Low) if internal temperature exceeds 85C. Connect (external) to "RF_Enable" to auto-disable HPA. Alarm pin TBD (9-15)

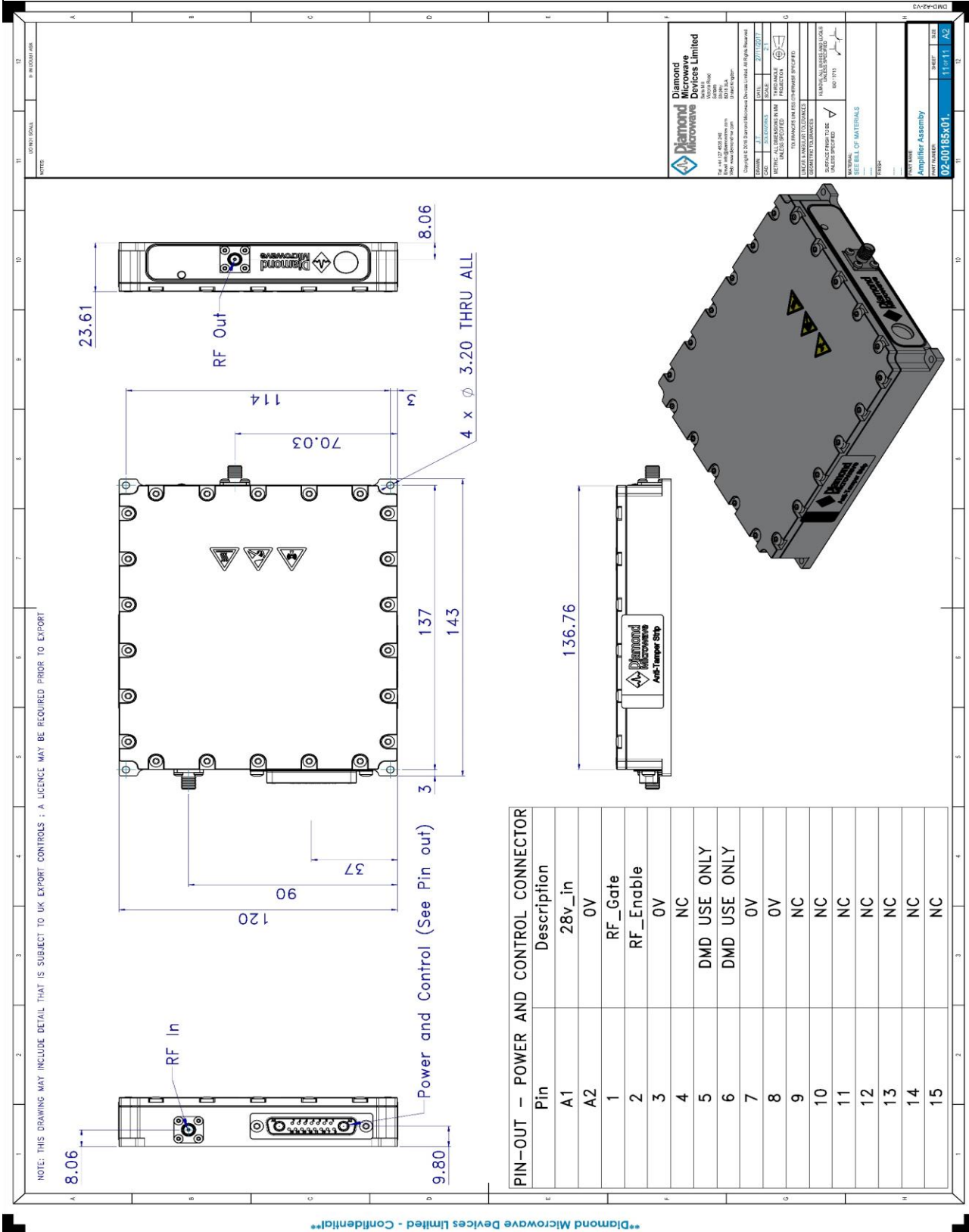
End User undertaking is required for export licence application



Diamond Microwave

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