

APCT-1.00-2.00-20-28V

1000 – 2000 MHz / 20 Watts

Model APCT-1.00-2.00-28-28V is a gallium-nitride (GaN) solid state broadband high power amplifier designed to provide 20 W output power across its full operating bandwidth and operate from a +28V supply. This compact module utilizes high power advanced GaN on SiC transistors that provide excellent power density, high efficiency and wide dynamic range. Exceptional performance, long term reliability and high efficiency are achieved by employing advanced broadband RF matching networks and combining techniques, machined housings and qualified components. UWB TECH ISO9001 Quality Management System assures consistent performance and the highest reliability.

FEATURES

- Class AB GaN linear
- Instantaneous wide bandwidth
- Small form factor and lightweight
- Built-in temperature monitoring
- Built-in high speed switching On/Off
- 50Ω input/output impedance
- High reliability and ruggedness

APPLICATIONS

- General Purpose
- Communication Systems
- RF Frequency Jamming Systems
- ISM(Industrial, Scientific and Medical equipment)
- Radar Simulator
- EMC Testing
- Broadcasting

Electrical Specifications [Test Condition: $V_{CC} = 28V$; $T_c = 45^\circ C$; $Z_s = Z_L = 50\Omega$]

Parameter	Unit	Min	Typ	Max	Notes
Operating Frequency	MHz	1000	-	2000	-
Small Signal Gain	dB	27	29	-	1000 ~ 2000 MHz
Small Signal Gain Flatness	dB _{pp}	-	±1.0	±2.0	1000 ~ 2000 MHz
P3dB	dBm	41	43	-	1000 ~ 2000 MHz
OIP3 @ Pout=+33dBm (1MHz Tone Spacing, CW 2-tone)	dBm	44	46	-	1000 ~ 2000 MHz
2 nd Harmonic Suppression (CW 1-tone)	-	-30	-15	dBc	Test Frequency 1GHz, Pout 30dBm,
Input Return Loss	dB	-	-10	-5	-
Supply Voltage	V	28	-	-	$V_{CC} (=V_{ds})$
Quiescent Current Consumption	A	-	1.0	1.5	-
Current Consumption @ P3dBm	A	-	3.5	4.5	CW 1-tone
On/Off Switching Time **	uS	-	2	5	On : TTL "Low"
					Off : TTL "High" (50mA @ Disable)
Shut Down or Switch On/Off TTL Voltage ***	V	0	-	0.5	On : TTL "Low" (Enable)
		2.5	5	5.5	Off : TTL "High" (50mA @ Disable)

Note
 ** Gate On/Off : High speed switching
 *** Drain On/Off : 500ms delay

Absolute Maximum Ratings

Parameter	Specification	Unit
Input RF Power	20	dBm
Supply Voltage	32	V
Load Mismatch Value	3 : 1 @ all load phase	-

* Input Signal Condition : CW 1-tone

Environmental Characteristics

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	T _{case}	-20	-	80	°C
Operating Ambient Temperature	T _{amb}	-40	-	60	°C
Storage Temperature	T _{stg}	-50	-	110	°C
Vibration	VI	MIL-STD-810G Method 514.6 ANNEX C			

Mechanical Specifications

Parameter	Specification	Unit
Dimension	72 x 50.8 x 16.6	mm
RF Connectors	RF Input : SMA Female	-
	RF Output : SMA Female	-
Interface Connector	SMW200-08	-
Cooling	Adequate Heatsink Required (Not Supplied)	-

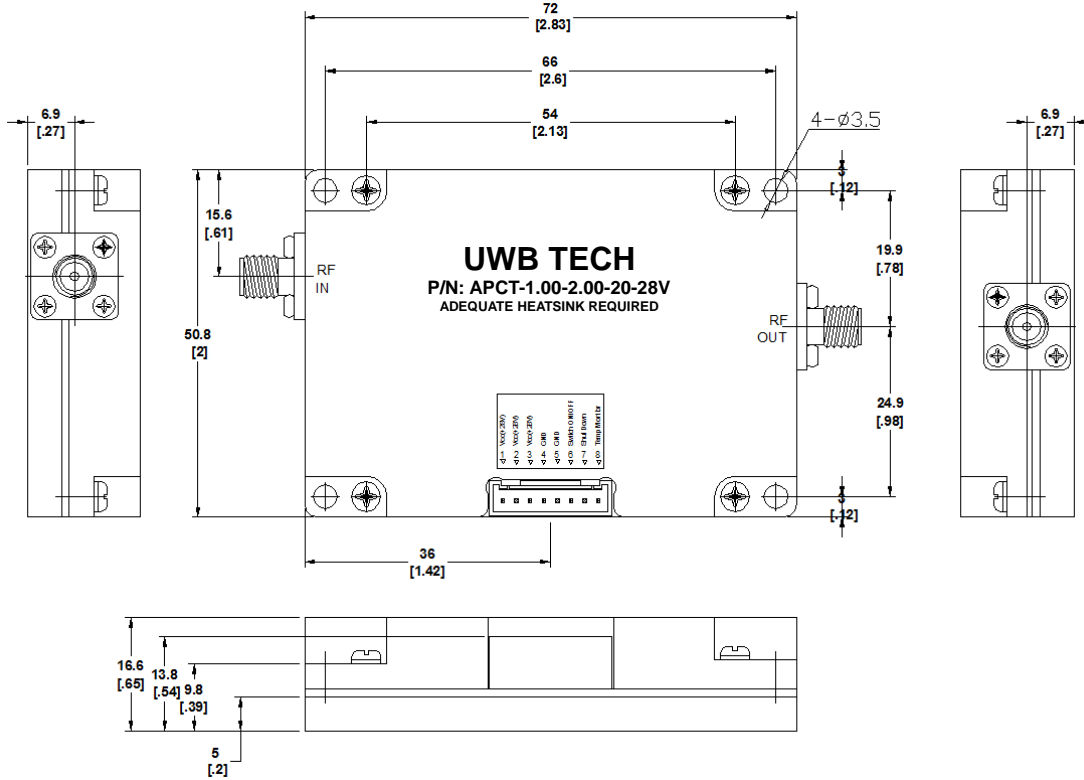
Interface Connector Pin Description

Pin	Description	Specification
1	V _{cc}	+28VDC
2	V _{cc}	+28VDC
3	V _{cc}	+28VDC
4	GND	Ground
5	GND	Ground
6	Switch ON/OFF	Enable : TTL "Low", Disable : TTL "High" (Low : 0~0.5V, High : 2.5~5V) Disable Status : 50mA current consumption
7	Shut Down	Enable : TTL "Low", Disable : TTL "High" (Low : 0~0.5V, High : 2.5~5V) Disable Status : 50mA current consumption
8	Temp Monitor	Reference voltage : 750mV @ 25°C, Scale : 10mV/°C

* Recommended Screw Torque : 8.0kgf.cm±1 using SEMS M3 14mm Bolt

Outline Drawing

Unit: mm[inch] | Tolerance: ±0.2[.008]



Product Ordering Information

Order Number	Description
APCT-1.00-2.00-20-28V	1000-2000MHz 20W 28V SMA Connector type GaN Solid State Broadband High Power Amplifier
SMH200-08	Interface Connector Housing with Cables

Datasheet Revision Information

Part Number	Version	Release Date	Modification	Status
APCT-1.00-2.00-20-28V	1.0	2016.March.28	-	-
-	1.1	2017.March.3	Document form, Electrical Specifications, Environmental Characteristics	In production

Important Notice

Specifications are subject to change without notice. UWB TECH believes the information contained within this data sheet to be accurate and reliable. However, UWB TECH assumes no responsibility or liability whatsoever for any of the information contained herein. The information contained herein is provided "AS IS, WHERE IS" and with all faults, and the entire risk associated with such information is entirely with the user. Customers should obtain and verify the latest relevant information before placing orders for UWB TECH products. All operating parameters should be validated by customer's technical experts for each application. UWB TECH products are not designed, intended or authorized for use as components or amplifiers in applications intended for surgical implant into the body or to support or sustain life, in applications in which the failure of the UWB TECH product could result in personal injury or death or in applications for planning, construction, maintenance or direct operation of a nuclear facility. Customers shall comply fully with all export administration and control laws and regulations of the Republic of Korea, the U.S. government and/or other national or international (e.g. UN) laws and regulations as may be applicable to the export, re-export, resale or other disposition of any products purchased from UWB TECH.

For more information, please contact:

UWB TECH

sales@uwb-tech.com