

APCT-2.00-6.00-20-36V
2000 – 6000 MHz / 20 Watts

Model APCT-2.00-6.00-20-36V 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 +36V 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: $V_{CC} = 36V$; $T_C = 45^\circ C$; $Z_S = Z_L = 50\Omega$]

Parameter	Unit	Min	Typ	Max	Notes
Operating Frequency	MHz	2000	-	6000	-
Small Signal Gain	dB	40	48	-	2000 ~ 6000 MHz
Small Signal Gain Flatness	dB _{pp}	-	±5.0	±7.0	2000 ~ 6000 MHz
Output Power @ Psat	dBm	41	42	-	2000 ~ 2400 MHz
		42	43	-	2400 ~ 5800 MHz
		40	41	-	5800 ~ 6000 MHz
Input Return Loss	dB	-	-15	-8	-
Supply Voltage	V	36	-	-	$V_{CC} (=V_{ds})$
Quiescent Current Consumption	A	-	1.1	1.5	-
Current Consumption @ Psat	A	-	2.0	4.0	CW 1-tone
On/Off Switching Time **	uS	-	1	5	On : TTL "Low"
					Off : TTL "High" (180mA @ 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" (180mA @ Disable)

Note

** Gate On/Off : High speed switching

*** Drain On/Off : 500ms delay

Absolute Maximum Ratings

Parameter	Specification	Unit
Supply Voltage	38	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	115 x 38.8 x 17.2	mm
Weight	138	g
RF Connectors	RF Input : SMA Female	-
	RF Output : SMA Female	-
Interface Connector	SMW200-08	-
Cooling	Adequate Heatsink Required (Not Supplied)	-

Interface Connector Pin Description

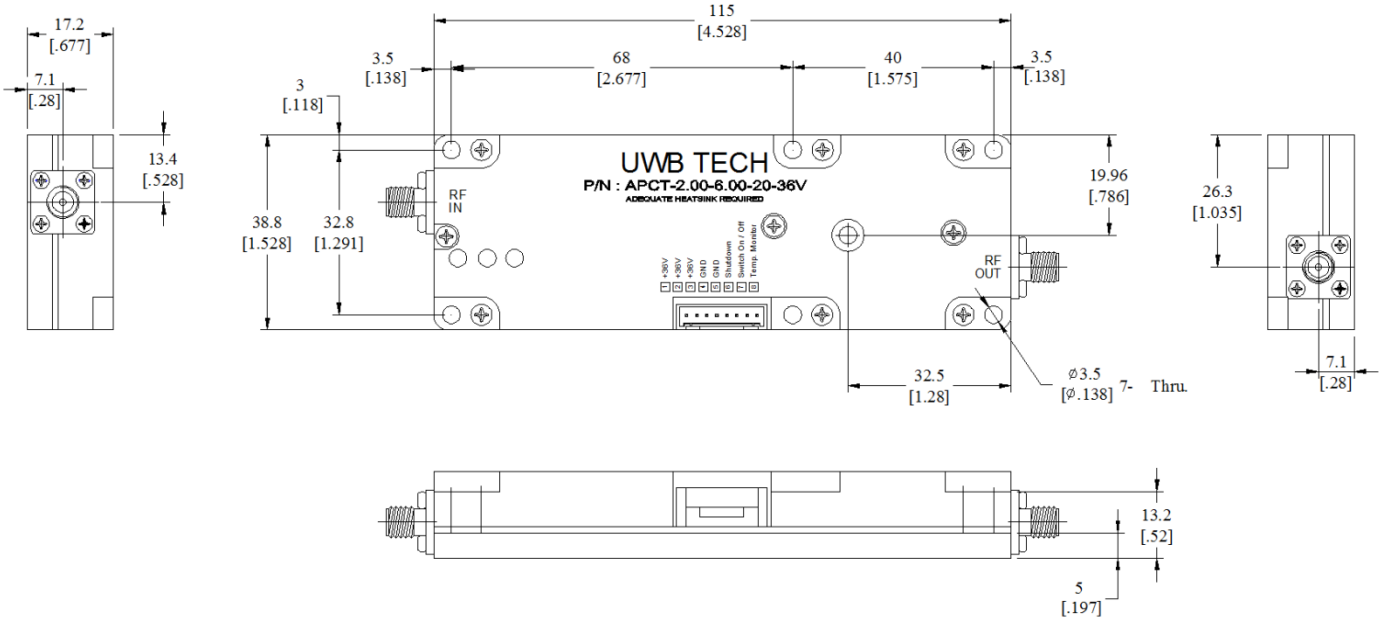
Pin	Description	Specification
1	V _{cc}	+36VDC
2	V _{cc}	+36VDC
3	V _{cc}	+36VDC
4	GND	Ground
5	GND	Ground
6	Shut Down	Enable : TTL "Low", Disable : TTL "High" (Low : 0~0.5V, High : 2.5~5V) Disable Status : 180mA current consumption
7	Switch ON/OFF	Enable : TTL "Low", Disable : TTL "High" (Low : 0~0.5V, High : 2.5~5V) Disable Status : 180mA current consumption
8	Temp Monitor	Reference voltage : 750mV @ 25°C, Scale : 10mV/°C

* Interface Connector Information SMW200-08(YEONHO Electronic, Wafer), SMH200-08(YEONHO Electronic, Housing)

* Recommended Screw Torque : 8.0kgf.cm±1 using SEMS M3 22mm Bolt

Outline Drawing

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



Product Ordering Information

Order Number	Description
APCT-2.00-6.00-20-36V	2000-6000MHz 20W 36V 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-2.00-6.00-20-36V	1.0	2016.June.20	-	-
-	1.1	2016.September.27	Electrical Specifications	-
-	1.2	2016.December.5	Applications, Product Ordering Information	-
-	1.3	2017.March.3	Environmental Characteristics	-
-	1.4	2018.January.2	Mechanical Specifications (Weight)	In production

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