

APCT-0.02-1.00-20-32V
20 – 1000 MHz / 20 Watts

Model APCT-0.02-1.00-20-32V 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 +32V 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: $V_{CC} = 32V$; $V_{DC} = 7V$; $TC = 45^{\circ}C$; $Z_S = Z_L = 50\Omega$]

Parameter	Unit	Min	Typ	Max	Notes
Operating Frequency	MHz	20	-	1000	-
Small Signal Gain	dB	39	41	-	20 ~ 1000 MHz
Small Signal Gain Flatness	dB _{pp}	-	±1.0	±2.0	20 ~ 1000 MHz
P3dB	dBm	42	43	-	20 ~ 1000 MHz
OIP3	dBm	45	50		Po=33dBm, Tone Spacing 1MHz
Input Return Loss	dB	-	-15	-10	-
2 nd Harmonic suppression	dBc	-	-40	-30	Po=30dBm, CW 1-tone
Supply Voltage	V	32	-	-	$V_{CC} (=V_{ds})$
		7			V_{DC}
Quiescent Current Consumption	A	-	1.5	1.7	$V_{CC}=32V$
	mA	-	20	60	$V_{DC}=7V$
Current Consumption @ P3dB	A	-	2.0	3.0	$V_{CC}=32V$, CW 1-tone
	mA	-	20	60	$V_{DC}=7V$, CW 1-tone
On/Off Switching Time **	uS	-	2	5	On : TTL "Low" (Enable)
					Off : TTL "High" (50mA @ Disable)
Shut Down or Switch On/Off TTL Voltage ***	V	0	-	0.5	Off : TTL "Low" (50mA @ Disable)
		2.5	5	5.5	On : TTL "High" (Enable)

Note

** Gate On/Off : High speed switching

*** Drain On/Off : 500ms delay

Absolute Maximum Ratings

Parameter	Specification	Unit
Input RF Power	8	dBm
Supply Voltage	35	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	63 x 38 x 15.4	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

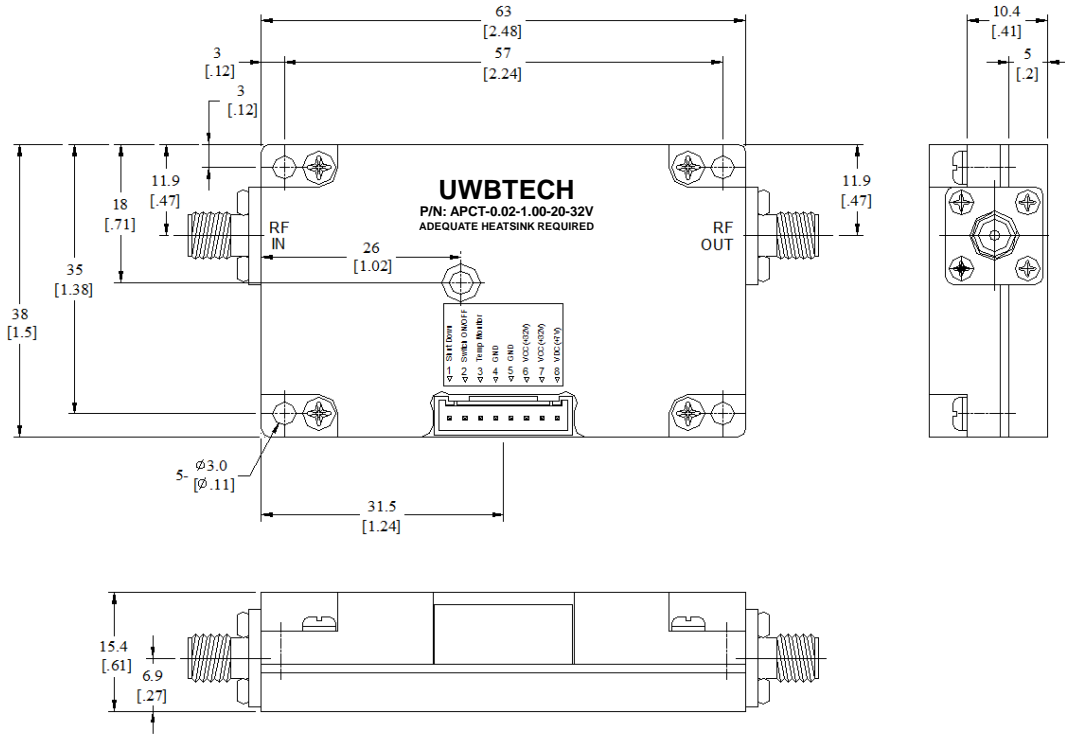
Pin	Description	Specification
1	Shut Down	Disable : TTL "Low", Enable : TTL "High" (Low : 0~0.5V, High : 2.5~5V) Disable Status : 50mA current consumption
2	Switch ON/OFF	Enable : TTL "Low", Disable : TTL "High" (Low : 0~0.5V, High : 2.5~5V) Disable Status : 50mA current consumption
3	Temp Monitor	Reference voltage : 750mV @ 25°C, Scale : 10mV/°C
4	GND	Ground
5	GND	Ground
6	V _{CC}	+32V _{DC}
7	V _{CC}	+32V _{DC}
8	V _{DC}	+7V _{DC}

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

* Recommended Screw Torque : 6.0kgf.cm±1 using SEMS M2.6 14mm Bolt

Outline Drawing

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



Product Ordering Information

Order Number	Description
APCT-0.02-1.00-20-32V	20-1000MHz 20W 32V 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-0.02-1.00-20-32V	1.0	2016.July.1	-	-
-	1.1	2017.March.3	Environmental Characteristics	In production

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