

**APCT-0.02-0.52-50-28V**
**20 –520 MHz / 50 Watts**

Model APCT-0.02-0.52-50-28V is a gallium-nitride (GaN) solid state narrowband high power amplifier designed to provide 50 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 narrowband 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	20	-	520	-
Power Gain @ Pin 13dBm	dB	32	34	-	20 ~ 520 MHz
Power Gain Flatness @ Pin 13dBm	dB <sub>pp</sub>	-	±1.0	±2.0	20 ~ 520 MHz
Output Power @ Pin 13dBm	dBm	45	47	-	20 ~ 520 MHz
Input Return Loss	dB	-	-10	-5	-
Supply Voltage	V	28	-	-	$V_{CC} (=V_{ds})$
Quiescent Current Consumption	A	-	1.5	2.0	-
Current Consumption @ Pin 13dBm	A	-	4.5	6.0	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	15	dBm
Supply Voltage	33	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 <sub>case</sub>	-20	-	80	°C
Operating Ambient Temperature	T <sub>amb</sub>	-40	-	60	°C
Storage Temperature	T <sub>stg</sub>	-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 <sub>cc</sub>	+28VDC
2	V <sub>cc</sub>	+28VDC
3	V <sub>cc</sub>	+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

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

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



**Product Ordering Information**

Order Number	Description
APCT-0.02-0.52-50-28V	20-520MHz 50W 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-0.02-0.52-50-28V	1.0	2016.March.28	-	-
-	1.1	2017.September.1	-	In production

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