



Solid State Broadband High Power Amplifier

APCT-0.5-2.5-40-28V

500 – 2500 MHz / 40 Watts

Model APCT-0.5-2.5-40-28V is a gallium-nitride (GaN) solid state broadband high power amplifier designed to provide 40 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. APC Technologies ISO9001 Quality Management System assures consistent performance and the highest reliability.

- Solid-state Class AB linear design
- Instantaneous broadband
- Small form factor and lightweight
- Built-in temperature monitoring
- Built-in shut down function
- 50 ohm input/output impedance
- High reliability and ruggedness

Applications

- General Purpose
- Communication System

Electrical Specifications @ $V_{CC} = 28V$; $T_C = 25^\circ C$; $Z_S = Z_L = 50\Omega$

Parameter	Min	Typ	Max	Unit	Condition
Operating Frequency	50	-	2500	MHz	-
Power Gain @ Pin -10dBm	-	56	-	dB	500 ~ 2500 MHz
Power Gain Flatness @ Pin -10dBm	-	± 1.0	± 2.0	dBpp	500 ~ 2500 MHz
Output Power (Psat)	35	40		dBm	500 ~ 2500 MHz
Input Return Loss	-	-8	-5	dB	-
Supply Voltage	27.5	28	30	V	$V_{CC} (=V_{ds})$
Power Added Efficiency @ Psat	26	35	-	%	-
Current Consumption @ Psat, $V_{CC}=28V$	-	6	8	ISAT	-
Shut Down TTL Voltage ***	0	-	0.5	V	ON: TTL "Low" (Enable)
	2.5	5	5.5		OFF: TTL "High" (50mA @ Disable)

Note
 *** Drain On/Off : 300ms delay

Solid State Broadband High Power Amplifier

Mechanical Specifications

Parameter	Value	Unit
Dimension	172(L) x 88(W) x 24(H); TBD	mm
RF Connectors	RF Input : SMA Female; TBD	-
	RF Output : SMA Female; TBD	-
DC & Control Signals Connector	D-sub, 9-Pin; TBD	-
Cooling	Adequate Heatsink Required (Not Supplied)	-

Absolute Maximum Ratings

Parameter	Specifications	Unit
Input RF Power	-5	dBm
Supply Voltage	30	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 _c	-30	-	85	°C
Storage Temperature	T _{stg}	-40	-	105	°C
Vibration	VI	MIL-STD-810G Method 514.6 ANNEX C			



Solid State Broadband High Power Amplifier

Outline Drawing

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

TBD

DC Connector Description

Pin #	Description	Specifications
1	GND	Ground
2	GND	Ground
3	GND	Ground
4	GND	Ground
5	Shut Down	Enable : TTL "Low", Disable : TTL "High" (Low : 0~0.5V, High : 2.5~5V) Disable Status : 50mA current consumption
6	V _{CC}	28 V _{DC}
7	V _{CC}	28 V _{DC}
8	GND	Ground
9	GND	Ground



Solid State Broadband High Power Amplifier

Product Ordering Information

Order Number	Description	Unit of Measure
APCT-0.5-2.5-40-28V	500-2500MHz 40W GaN-on-SiC Broadband High Power Amplifier	Each

Datasheet Revision Information

Part Number	Version	Release Date	Modification	Status
APCT-0.5-2.5-40-28V	0.9	2016.Feb.04	-	Preliminary

Important Notice

Specifications are subject to change without notice. APC Technologies believes the information contained within this data sheet to be accurate and reliable. However, APC Technologies 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 APC Technologies products. All operating parameters should be validated by customer's technical experts for each application. APC Technologies 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 APC Technologies product could result in personal injury or death or in applications for planning, construction, maintenance or direct operation of a nuclear facility.

For more information, please contact:

APC Technologies
770, Sector-9,
Gurgaon – 122001 (Haryana), INDIA
sales@apctechnologies.in
91.124.4008220