



Solid State Broadband High Power Amplifier

APCT-0.02-2.50-5-28V

20 – 2500 MHz / 5 Watts

Model APCT-0.02-2.50-5-28V is a gallium-nitride (GaN) solid state broadband high power amplifier designed to provide 5 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 high speed switching On/Off
- 50 ohm input/output impedance
- High reliability and ruggedness

Applications

- General Purpose
- Communication System

Electrical Specifications @ $V_{CC} = 28V$; $T_C = 45^\circ C$; $Z_S = Z_L = 50\Omega$

Parameter	Min	Typ	Max	Unit	Condition
Operating Frequency	20	-	2500	MHz	-
Power Gain @ Pin 0dBm	36	38	-	dB	20 ~ 2500 MHz
Power Gain Flatness @ Pin 0dBm	-	±2.0	±3.0	dBpp	20 ~ 2500 MHz
Output Power @ Pin 0dBm	36	38	-	dBm	20 ~ 2500 MHz
Input Return Loss	-	-10	-5	dB	-
Supply Voltage	28	-	-	V	$V_{CC} (=V_{ds})$
Quiescent Current Consumption	-	0.7	1.2	A	-
Current Consumption @ Pin 0dBm	-	1.8	2.5	A	CW 1-tone
Shut Down TTL Voltage ***	0	-	0.5	V	ON: TTL "Low" (Enable)
	2.5	5	5.5		OFF: TTL "High" (100mA @ Disable)

Note

*** Drain On/Off : 500ms delay

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Mechanical Specifications

Parameter	Value	Unit
Dimension	55(L) x 50(W) x 15(H)	mm
RF Connectors	RF Input : SMA Female	-
	RF Output : SMA Female	-
DC Connector	SMW200-08	-
Cooling	Adequate Heatsink Required (Not Supplied)	-

Absolute Maximum Ratings

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

* Input Signal Condition : CW 1-tone

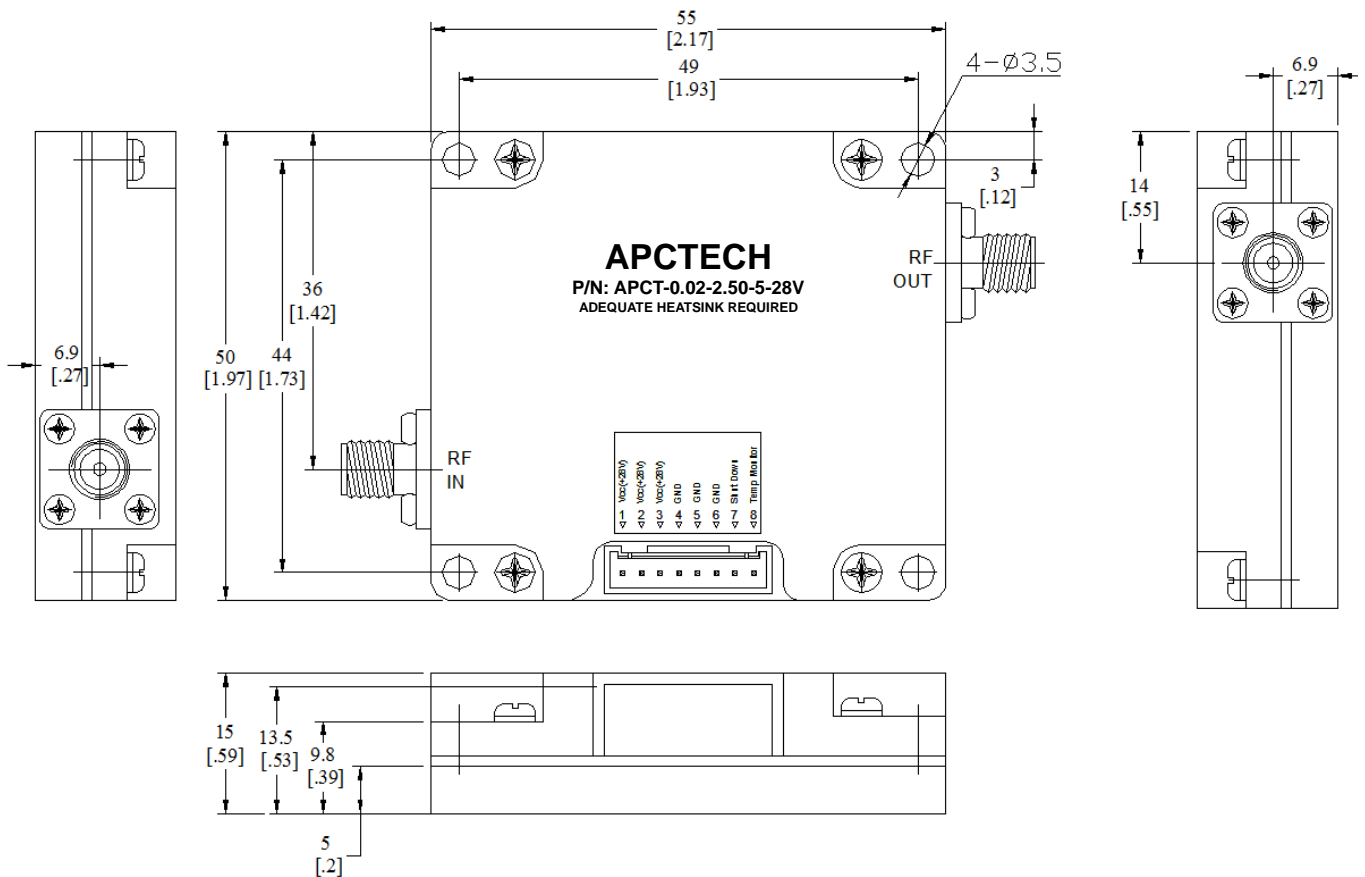
Environmental Characteristics

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	T _c	-10	-	80	°C
Storage Temperature	T _{stg}	-40	-	105	°C
Vibration	VI	MIL-STD-810G Method 514.6 ANNEX C			

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Outline Drawing

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



DC Connector Description

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

* Recommended Screw Torque : 8.0kgf.cm ± 1 using SEMS M3 20mm Bolt

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Product Ordering Information

Order Number	Description	Unit of Measure
APCT-0.02-2.50-5-28V	20-2500MHz 5W GaN Solid State Broadband High Power Amplifier	Each

Datasheet Revision Information

Part Number	Version	Release Date	Modification	Status
APCT-0.02-2.50-5-28V	0.9	2016.Step.8	-	Preliminary

Important Notice

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