

**Product Features**

- GaN on SiC Broadband High Power Amplifier
- 420 ~ 470MHz Operation Bandwidth
- Power Gain 39dB min
- 40W Typical @ P3dB

**Applications**

- Aerospace & Defense
- Military
- Radar
- Communication
- Test & Measurement



**Description**

RWS05520-10 is a unique GaN-SiC wideband amplifier that powers 45dBm over a wide instantaneous bandwidth of 420-470MHz. This affordable GaN wideband amplifier has been specifically developed for Broadcasting, Communication System and other applications in general. This amplifier offers a typical Power gain of 40dB, and typically draws 2.1A at +28V

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

PARAMETER	UNIT	MIN	TYP	MAX	CONDITION
Operating Frequency	MHz	420	-	470	-
Power Gain	dB	39	40		
Gain Flatness	dB	-	$\pm 1.0$	$\pm 1.5$	
Gain Variation vs Frequency	dBpp	-2.0	-	2.0	
P1dB	dBm	44	45	-	CW 1-tone
Input Return Loss	dB	-	-10	-5	
N <sup>TH</sup> Harmonic suppression	dBc		-25	-15	CW 1-tone @Po = +41.5dBm
IMD @ Po = +41.5dBm (100KHz Tone spacing, CW 2-Tone)	dBc	-25			3rd IMD @ Operating Frequency
	dBc	-40			5th IMD @ Operating Frequency
	dBc	-45			7th IMD @ Operating Frequency
	dBc	-50			9th IMD @ Operating Frequency
Spurious	dBc	-65			Pout @ 41.5dBm
Supply Voltage	V	27.5	28	30	Vcc(=Vds)
Quiescent Current consumption	A	2.05	2.1	2.15	+28V
Current Consumption@41.5dB	A	2.0	2.1	2.2	CW 1-tone
Current Consumption@P1dB		-	2.8	3.2	
On/Off Switching Time*	uS	-	3	5	On : TTL "high"(Enable)
					Off : TTL "low"
Shut Down or Switch On/Off TTL Voltage	V	2.5	5	5.5	On : TTL "high"(Enable)
		0	-	0.5	Off : TTL "low"

**Absolute Maximum Ratings**

PARAMETER	UNIT	RATING
Input RF Power	dBm	10
Supply Voltage	V	28
Load Mismatch Value	-	3 : 1 @all load phase

\* Input Signal Condition : CW 1-Tone

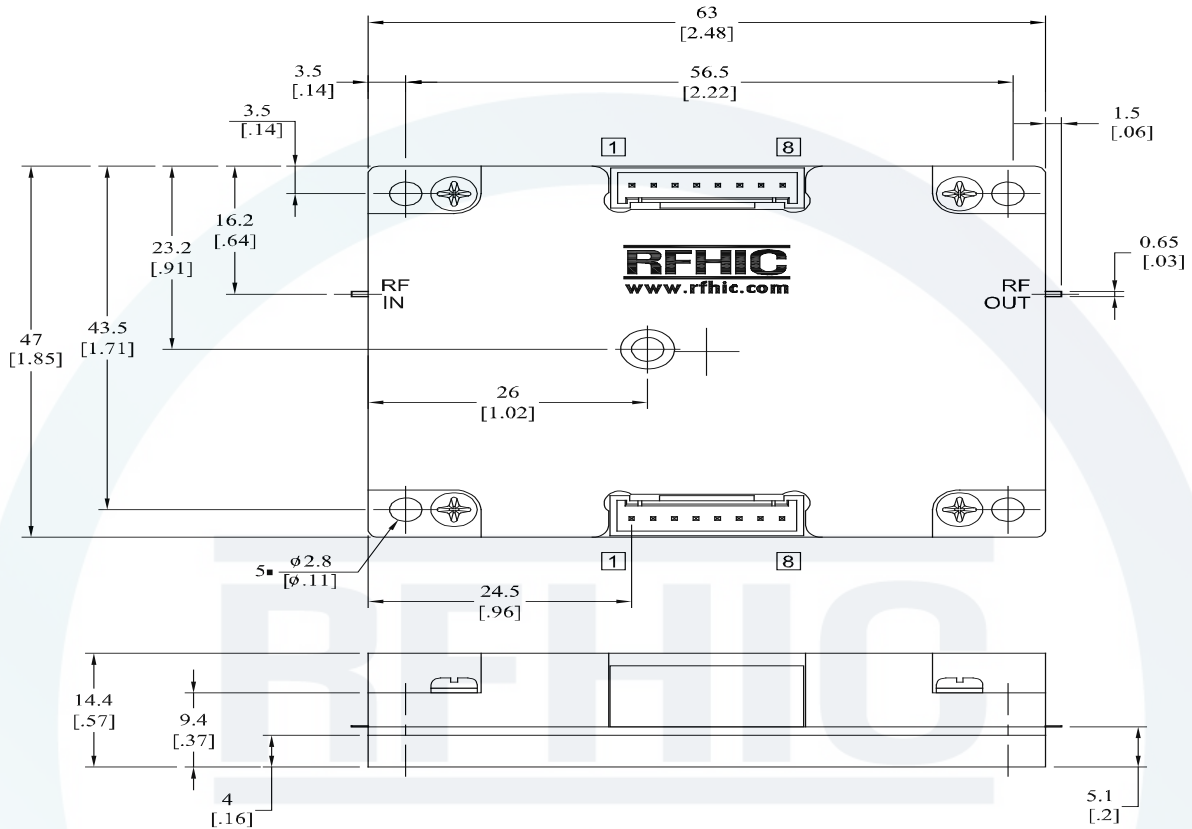
**Environmental Characteristics**

PARAMETER	UNIT	MIN	TYP	MAX
Operating Temperature	°C	-40	-	85
Cold Start Temperature	°C	-40		
Storage Temperature	°C	-40	-	105
Vibration		MIL-STD-810G Method 514.6 ANNEX C		



**Outline Drawing**

\* Unit: mm[inch] | Tolerance:  $\pm 0.15$ [.006]



Pin Description			
Pin No	Function	Pin No	Function
1	Vcc(+28V)	5	GND
2	Vcc(+28V)	6	Temp Monitor
3	Vcc(+28V)	7	Switch ON/OFF
4	GND	8	Shout down(+5V)

**Note**

- \* Cover screw holes and Module Mount Holes would be changed.
- \* Recommended Screw Torque : 6.0kgf.cm $\pm 1$  using SEMS M2.6 14mm Bolt

**Revision History**

Part Number	Release Date	Version	Modification	Data Sheet Status
RWS05520-10	2022.12.21	1.0	Electrical Specifications addition.	-



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