

Solid State Personal Communication Power Amplifier

7022- PCM4Q5AHM
1800 - 2000MHz / 50Watts

The PCM4Q5AHM (SKU # 7022) is suitable for broadband PCS range linear repeater, base-station and counter communication applications. This amplifier utilizes high power LDMOS devices that provide high gain, wide dynamic range, and excellent group delay and phase linearity. Exceptional performance, long term reliability, and high efficiency are achieved by employing advanced matching networks and combining techniques, EMI/RFI filters, machined housings, and qualified components. Empower RF's ISO9001 Quality Assurance Program assures consistent performance and the highest reliability.

- Solid-state high efficiency linear design
- Small form factor and lightweight
- Suitable for all modulation standards
- 50 Ohm Input/Output impedance
- High reliability and ruggedness
- Built-in control and monitoring functions
- Built-in Output Circulator for added reliability



ELECTRICAL SPECIFICATIONS @ +28V_{DC}, 25°C, 50Ω System

Parameter	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	1800		2000	MHz
Power Output CW	P _{SAT}	50	80		Watt
Output Power @ 1dB Gain Compression	P _{1dB}	50	-		Watt
Power Gain @ 1dB Gain Compression	G _{1dB}	46			dB
Input Power for Rated P _{SAT}	P _{IN}		0		dBm
Small Signal Gain Flatness	ΔG _{SS}		±0.75	±1.0	dB
Input/Output Return Loss	S ₁₁ /S ₂₂			-14	dB
Third Order Intercept Point 2-Tone @ 37dBm/Tone, 100kHz Spacing	IP3		+57		dBm
Harmonics @ P _{OUT} =50W	H			-45	dBc
Noise Figure	NF			10	dB
Spurious Signals	Spur		-70	-60	dBc
Operating Voltage	V _{DD}	26	28	30	Volt
Current consumption @ P _{OUT} = 50W	I _{DD}			8.0	Amp

MECHANICAL SPECIFICATIONS

Parameter	Value	Units	Limits
Dimensions	6.4 x 3.4 x 1.1	Inch	Max
Weight	1.0	lb.	Max
RF Connectors Input / Output	Type-SMA, Female		
DC Interface Connector	D-sub 9-pin, Male		
Cooling	External Heatsink (not supplied)		

ENVIRONMENTAL CHARACTERISTICS (Design to Meet)

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	T _C	0		+50	°C
Storage Temperature	T _{STG}	-40		+85	°C
Relative Humidity (non-condensing)	RH			95	%
Altitude (MIL-STD-810F - Method 500.4)	ALT			30,000	Feet
Vibration / Shock MIL-STD-810F Method 514.5/516.5 – Proc I	VI / SH		Airborne		

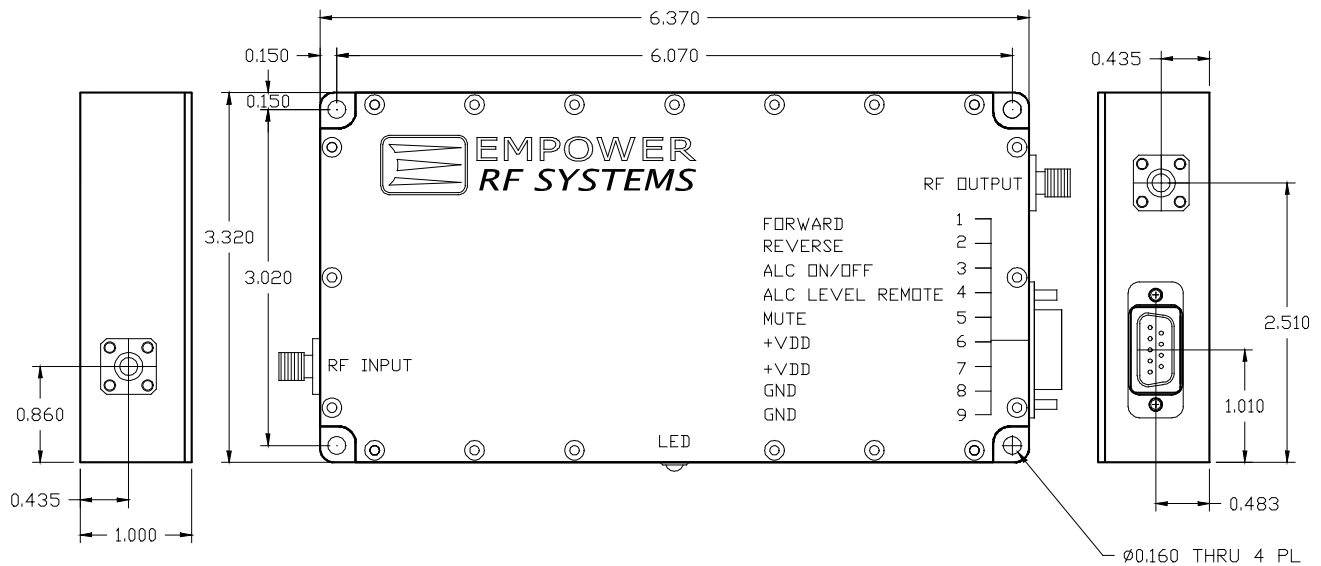
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LIMITS

Input RF drive level without damage	+3dBm	Max
Load VSWR @ P _{OUT} = 50W	∞ @ all load phase & amplitude for duration of 1 minute 3:1 @ all load phase & amplitude continuous	-
Thermal Overload	85°C shutdown	Max

DC INTERFACE CONNECTOR – D-sub 9-pin, Male

Pin #	Description	Specifications
1	Forward Power Mon	Continuous Analog voltage 0-5V _{DC} relative to forward power level 47dBm = 4.7V _{DC} @ 0.2V/dB, 27-47dBm range
2	Reverse Power Mon	Continuous Analog voltage 0-5V _{DC} relative to reflected power Level 47dbm = 4.7V _{DC} @ 0.2V/dB, 27-47dBm range
3	N/C	No Connection
4	N/C	No Connection
5	Mute	Disable: TTL Logic High (5V) (Internally Pulled-low)
6, 7	+VDD	+26.0-30.0V _{DC}
8, 9	GND	Ground

OUTLINE DRAWING


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TYPICAL PERFORMANCE PLOTS

