

Solid State Personal Communication Power Amplifier

7034 - PCM3T4AGM
952 – 957 MHz / 40 Watts

The PCM3T4AGM (SKU 7034) is suitable for high efficiency, linear applications in the Cellular frequency range. Also suitable for GSM, CDMA and TDMA digital modulations, this amplifier provides high gain, wide dynamic range, low distortions, excellent group delay and phase linearity. Exceptional performance, long-term reliability, and high efficiency are achieved by employing efficient broadband RF 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 linear design
- Small and lightweight
- Suitable for CW, GSM, TDMA & CDMA applications
- 50 ohm input/output impedance
- High reliability and ruggedness
- Built-in control functions and output circulator

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

Parameter	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	952		957	MHz
Output Power CW	P _{SAT}	40	45		Watt
Output Power @ 1dB Gain Compression	P _{1dB}	25			Watt
Small Signal Gain	G _{SS}	46	48	50	dB
Input Power for Rated P _{SAT}	-P _{IN}		0		dBm
Small Signal Gain Flatness	ΔG		±0.25	±0.5	dB
Third Order Intercept Point (IMD) 2-Tone @ 37dBm/Tone, 500kHz Spacing	IP3	+57			dBm
Input Return Loss	S ₁₁			-14	dB
Noise Figure	NF		7	10	dB
Harmonics @ P _{OUT} = 25W	H			-45	dBc
Spurious Signals	Spur		-70	-60	dBc
Operating Voltage	V _{DC}	26	28	30	Volt
Current Consumption @ P _{OUT} = 25W	I _{DD}		2.8	3	Amp

MECHANICAL SPECIFICATIONS

Parameter	Value	Units	Limits
Dimensions	6.4 x 3.4 x 1.0	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	-5		+60	°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		

LIMITS

Input RF drive level without damage	+6 dBm	Max
Load VSWR @ P _{OUT} = 25W	∞ @ all load phase & amplitude continuous (Built-in circulator)	-
Thermal Overload	85°C shutdown	Max

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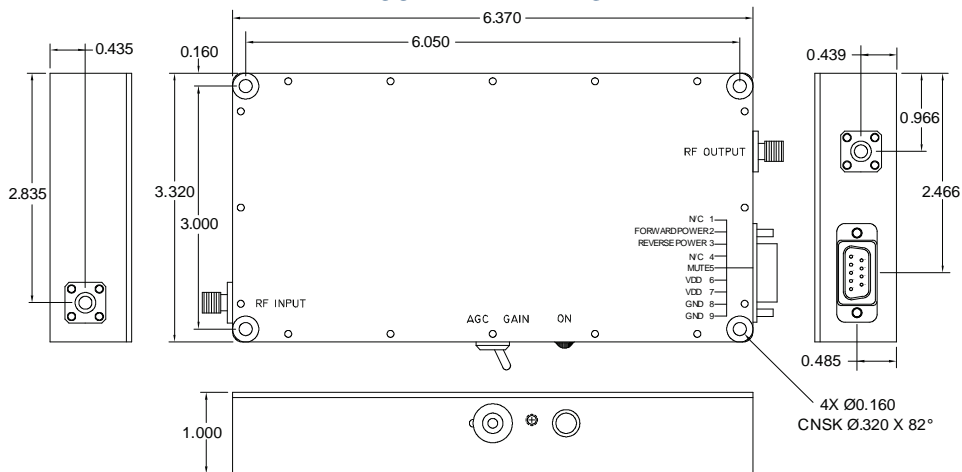
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DC INTERFACE CONNECTOR – D-Sub 9-Pin, Male

Pin #	Description	Specifications
1	N/C	No Connection
2	Forward Power	Continuous Analog voltage 0-5V _{DC} , relative to forward power level (200mV/dB)
3	Reverse Power	Continuous Analog voltage 0-5V _{DC} , relative to reverse power level (200mV/dB)
4	N/C	No Connection
5	Mute	Amplifier Disable: TTL Logic High (5V) (Internally Pulled-Low)
6&7	VDD	+28.0V _{DC} ±2.0V
8&9	GND	Ground

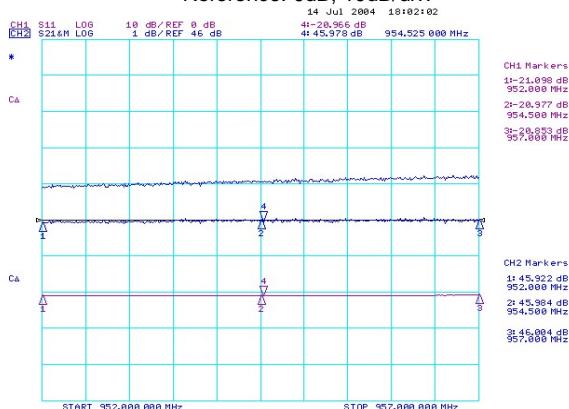
OUTLINE DRAWING



TYPICAL PERFORMANCE

Plot 1 – Small Signal Gain and P_{1dB}

Top Curve: Small Signal Gain @ P_{IN} = -20dBm
 Middle Curve: Power Gain @ P_{1dB}, P_{IN} = +1dBm
 Reference: 46dB, 1dB/div.
 Bottom Curve: Input Return Loss
 Reference: 0dB, 10dB/div.



Plot 2 – Small Signal Gain and P_{SAT}

Top Curve: Small Signal Gain @ P_{IN} = -20dBm
 Middle Curve: Power Gain @ P_{SAT}, P_{IN} = +3dBm
 Reference: 44dB, 1dB/div.
 Bottom Curve: Input Return Loss
 Reference: 0dB, 10dB/div.

