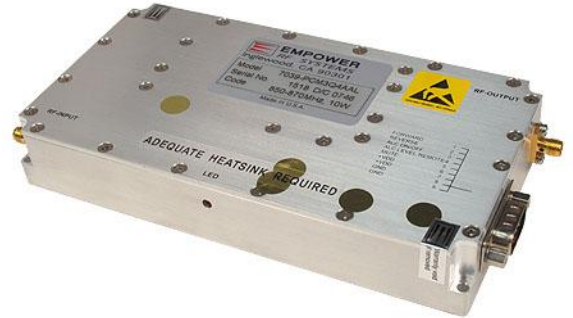


Solid State Personal Communication Power Amplifier

7039 - PCM3R3SAL
850 – 870 MHz / 10 Watts iDEN

The PCM3R3SAL (SKU 7039) formerly PCM3Q4AAL is suitable for Ultra linear SMR and iDEN repeater and base station applications in the Cellular frequency range. Also suitable for CDMA, GSM and TDMA applications, this amplifier utilizes linear LDMOS power 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 Pre-D linear design
- Small form factor and lightweight
- Suitable for SMR, iDEN and multi FA Applications.
- 50 ohm input/output impedance
- High reliability and ruggedness
- Built-in high dynamic range ALC circuit and control functions
- Built-in Output Circulator

ELECTRICAL SPECIFICATIONS @ +28 VDC, 25°C, 50 Ω System

Parameter	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	850		870	MHz
Output Power CW	P _{SAT}	50	80		Watt
Output Power @ 1 dB Gain Compression Point	P _{1dB}		50		Watt
Power Output CDMA per IS-97	P _{CDMA}	10			Watt
Third Order Intercept Point 2-Tones, Pout = 12 W Avg., 500 KHz spacing	IP3	+62	+66		dBm
Small Signal Gain	G	44	46	48	dB
Small Signal Gain Flatness	ΔG		±0.5	±0.75	dB
Input/output VSWR	S ₁₁ / S ₂₂		1.2:1	1.5:1	
Harmonics @ P1 dB Gain Compression Point	H			-45	dBc
Noise Figure	NF		7	10	dB
Spurious Signals	Spur		-70	-60	dBc
Operating Voltage	V _{DD}	26	28	30	Volt
Supply Current @ P _{OUT} = 50 W CW	I _{DD}		7	10	Amp
Supply Current @ P _{OUT} = 12 W Composite	I _{DD}		4		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 In/Out	SMA female		
DC / Function Connector	D-sub, 9 Pins, Male		
Cooling	External Heatsink		

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	10,000		30,000	Feet
Shock / Vibration (MIL-STD-810F Method 516.5)	SH / VI		Airborne		

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PROTECTIONS

Input Overdrive	+10 dBm	Max
Load VSWR @ nominal output power	∞ @ all load phase & amplitude for duration of 1 minute 3:1 @ all load phase & amplitude continuous	Nom
Thermal Overload	85°C shutdown	Max

INTERFACE CONNECTOR – D-sub, 9-Pin

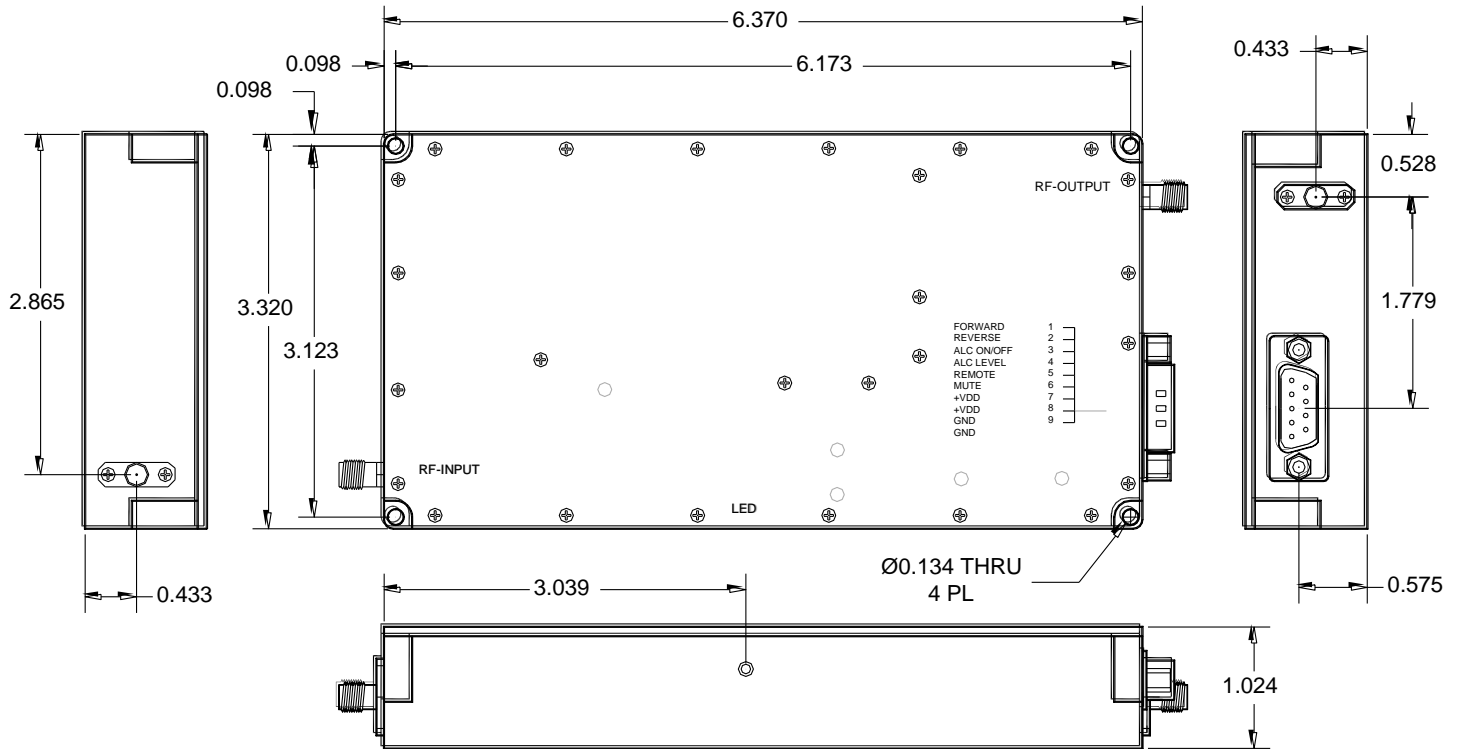
Pin #	Description	Specifications
1	Forward Power Monitor	Continuous Analog voltage relative to forward power via RMS detector FWDm: 17 – 47 dBm @ 0 – 5 V (200 mV/dB)
2	Reverse Power Monitor	Continuous Analog voltage relative to reflected power via RMS detector REVM: 12 – 42 dBm @ 0 – 5 V (150 mV/dB)
3	ALC ON/OFF	ALC ON = TTL “Low” ALC OFF = TTL “High” or “Open”
4	ALC Level	Continuous adjustable range via analog input levels Setting Point (ASP): 32 – 42 dBm @ 0 – 5 V (300 mV/dB) Error Range (AER): ±1.5 dB Response Time (ART): 100 mS/dB
5	Mute	Amplifier Enable: TTL “Low” or “Open” Amplifier Disable: TTL “High”
6	+VDD	+28 V _{DC} ± 2 V
7	+VDD	+28 V _{DC} ± 2 V
8	GND	Ground
9	GND	Ground
LED	LED Indicator	Output Power level indicator referenced to ALC setting

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OUTLINE DRAWING



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TYPICAL PERFORMANCE PLOTS
