

Solid State Personal Communication Power Amplifier

7045 - PCM3Q4A6M
869 - 894MHz / 4Watts for CDMA

The PCM3Q4A6M (SKU # 7045) is designed for Cell A & B single & multi-channel CDMA repeaters and MicroCell applications repeater applications. Also suitable for GSM and TDMA applications, this amplifier utilizes proprietary DIP™ (Direct Injection Pre-D) circuit and linear LDMOS power devices that provide ample output power margins, 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. This rugged module is input overdrive and output isolator protected, and proprietary ALC circuits ensure stable, ripple free output power under multi-channel conditions. 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 & multi FA CDMA
- 50 Ohm Input/Output impedance
- High reliability and ruggedness
- Built in Output Isolator
- Built in monitoring circuit

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

Parameter	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	869		894	MHz
Output Power CDMA	P _{CDMA}	4			Watt
Output Power @ 1dB G.C.P	P _{1dB}	25			Watt
Small Signal Gain	G _{SS}	44	46	48	dB
Gain Flatness (ALC On)	ΔG			±0.5	dB
ACPR @ 4 Watt CDMA Output Port HP E4433B source @ any input dynamic range fc ±885KHz @ 30KHz RBW, 100Hz VBW fc ±1.98MHz @ 30KHz RBW, 100Hz VBW fc ±3.125MHz @ 1MHz RBW	ACPR			-50 -60 -13	dBc dBc dBm
Third Order Intercept Point 2-Tones, Pout = 4W Avg., Δ = 500KHz	IP3	+56	+58		dBm
Input/Output VSWR	S11/S22		1.2:1	1.5:1	-
Noise Figure	NF		7	10	dB
Harmonics @ P1dB G.C.P	H			-45	dBc
Spurious Signals	Spur		-70	-60	dBc
Operating Voltage	VDC	26	28	30	Volt
Supply Current @ Pout = 25W CW	IDD		3.0		Amp
Supply Current @ Pout = 4W Composite	IDD		2.0	2.5	Amp

MECHANICAL SPECIFICATIONS

Parameter	Value	Units	Limits
Dimensions	5.0 x 3.75 x 1.0	Inch	Max
Weight	1.0	lb.	Max
RF Connectors In/Out	SMA female		
DC Connectors	D-sub 9 Pins		
Cooling	External Heatsink		

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ENVIRONMENTAL CHARACTERISTICS (Designed to Meet)

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	Tc	-10		+50	°C
Storage Temperature	Tstg	-40		+85	°C
Relative humidity w/o condensation	RH	95			%
Altitude	ALT	10,000	30,000		Feet
Shock & Vibration	SH / VI		Airborne		

PROTECTIONS

Input Overdrive		+6dBm			Max
Over Power Shutdown		45dBm			Min
Load VSWR @ 25W 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 CONNECTORS D-Sub, 9-Pin

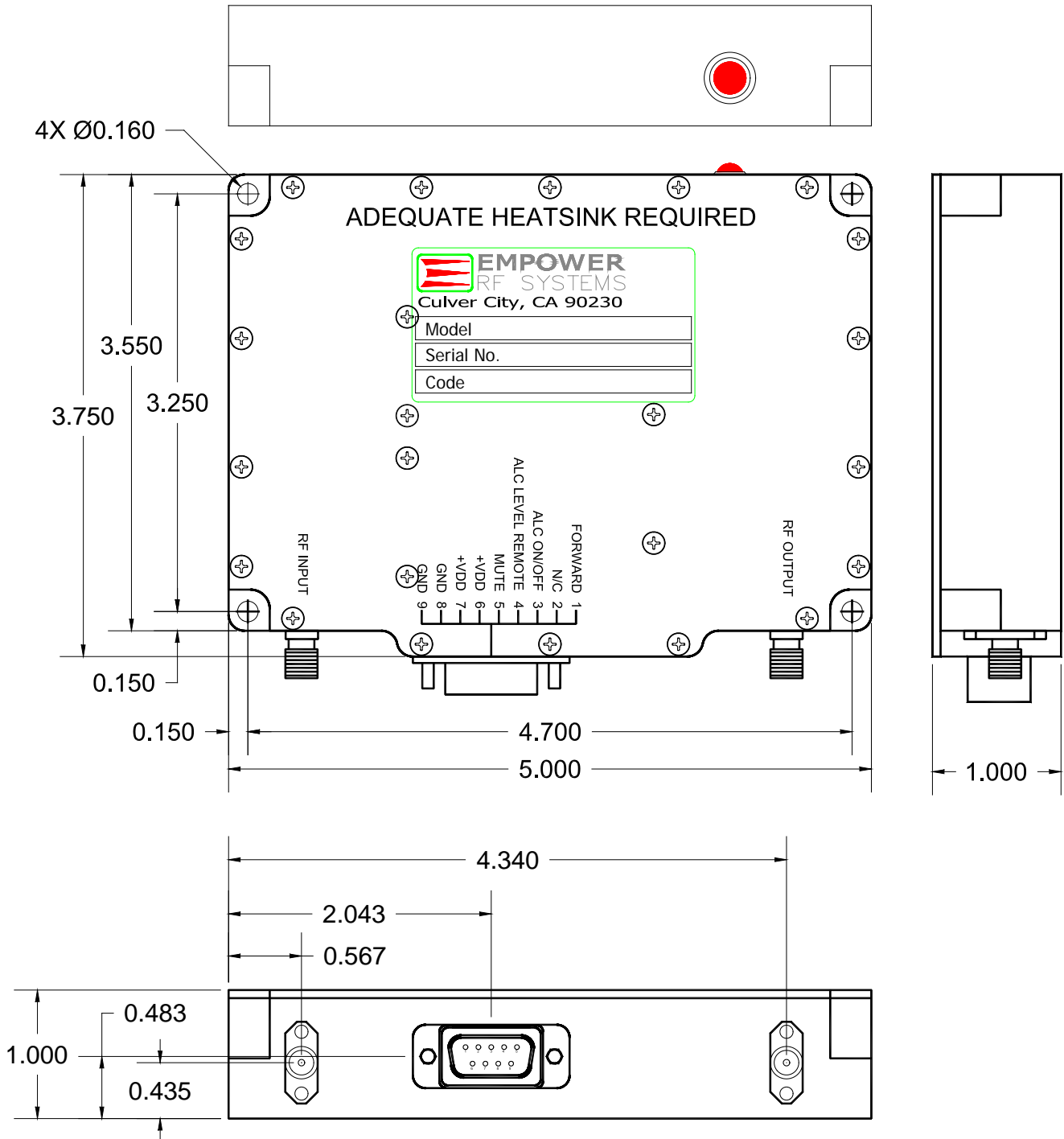
Pin #	Description	Specifications
1	Forward Power Monitor	Continuous Analog voltage relative to forward power via RMS detector FWDM: 13 – 43dBm @ 0 – 5V (200mV/dB) 28dBm output = V _{FWD} = 2.5VDC
2	Reverse Power Monitor	Continuous Analog voltage relative to reflected power via RMS detector REVM: 6 – 36dBm @ 0 - 5V (150mV/dB)
3	ALC ON/OFF	ALC ON = TTL "Low" ALC OFF = TTL "High"
4	ALC Level	Continuous adjustable range via analog input levels Setting Point (ASP): 31 – 41dBm @ 0 - 5V (300mV/dB) Error Range (AER): ±1.5dB Response Time (ART): 100mS/dB
5	Mute	Enable: TTL "Low" Disable: TTL "High"
6	+VDD	+28 ± 1VDC
7	+VDD	+28 ± 1VDC
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

