

Solid State Personal Communication Power Amplifier

7084 – PCM5A5ECO
2110 – 2170 MHz / 16 Watts 3GPP W-CDMA

The PCM5A5ECO (SKU 7084) is designed for single and multi-channel 3GPP W-CDMA repeater applications in the UMTS frequency range. This amplifier utilizes linear LDMOS power devices that provide high gain, wide dynamic range, low distortions, and excellent group delay and phase linearity. Exceptional performance, long term reliability and high efficiency are achieved by employing Direct Injection Pre-D™ 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 linearized design
- Compact, lightweight form factor
- Suitable for single and multi FA W-CDMA
- 50 ohm input/output impedance
- High reliability and ruggedness
- Built-in control and monitoring circuits
- Built-in output isolator
- High efficiency

ELECTRICAL SPECIFICATIONS @ +28V_{DC}, 25°C, 50Ω System, PAR 8dB @ CCDF0.01%

Parameter	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	2110		2170	MHz
Small Signal Gain	G _{SS}	49	50	51	dB
Gain Flatness @ P _{IN} = -20 dBm	ΔG		±0.75	±1.0	dB
Gain variation over operating temperature range	ΔG _{TEMP}			±1.5	dB
Return Loss Input/Output	S ₁₁ /S ₂₂			-14	dB
Power Output W-CDMA per 3GPP standard	P _{WCDMA}	16			Watt
ACLR @ P _{OUT} = 42dBm 4 Carrier, W-CDMA, 64 DPCH, BW = 3.84 MHz Spectrum Analyzer Settings: Res BW = 30 KHz, Video BW = 100 Hz	Δ=5MHz			-45	dBc
	Δ=10MHz			-50	
Harmonics @ 16W 1FA W-CDMA	H			-45	dBc
Spurious Signals @ 16W	Spur			-70	dBc
Operating Voltage (< 560mV peak-to-peak)	V _{DD}	27	28	29	Volt
Current Consumption @ P _{OUT} = 16W 4FA W-CDMA	I _{DD}		3.5	3.7	Amp
Max inrush current				2.4	Amp

MECHANICAL SPECIFICATIONS

Parameter	Value	Unit
Dimensions – Metric (Inch)	100 x 140 x 32 (4.0" x 5.5" x 1.3")	mm (Inch)
Weight	3.5 lbs.	Pound
RF Connectors Input/Output	Type-SMA, Female, Right Angle	
DC Interface Connector	High Density, D-Sub 15-Pin, Male	
Cooling	External Heatsink (Not Supplied)	

ENVIRONMENTAL CHARACTERISTICS (Design to Meet)

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	T _C	-30		+85	°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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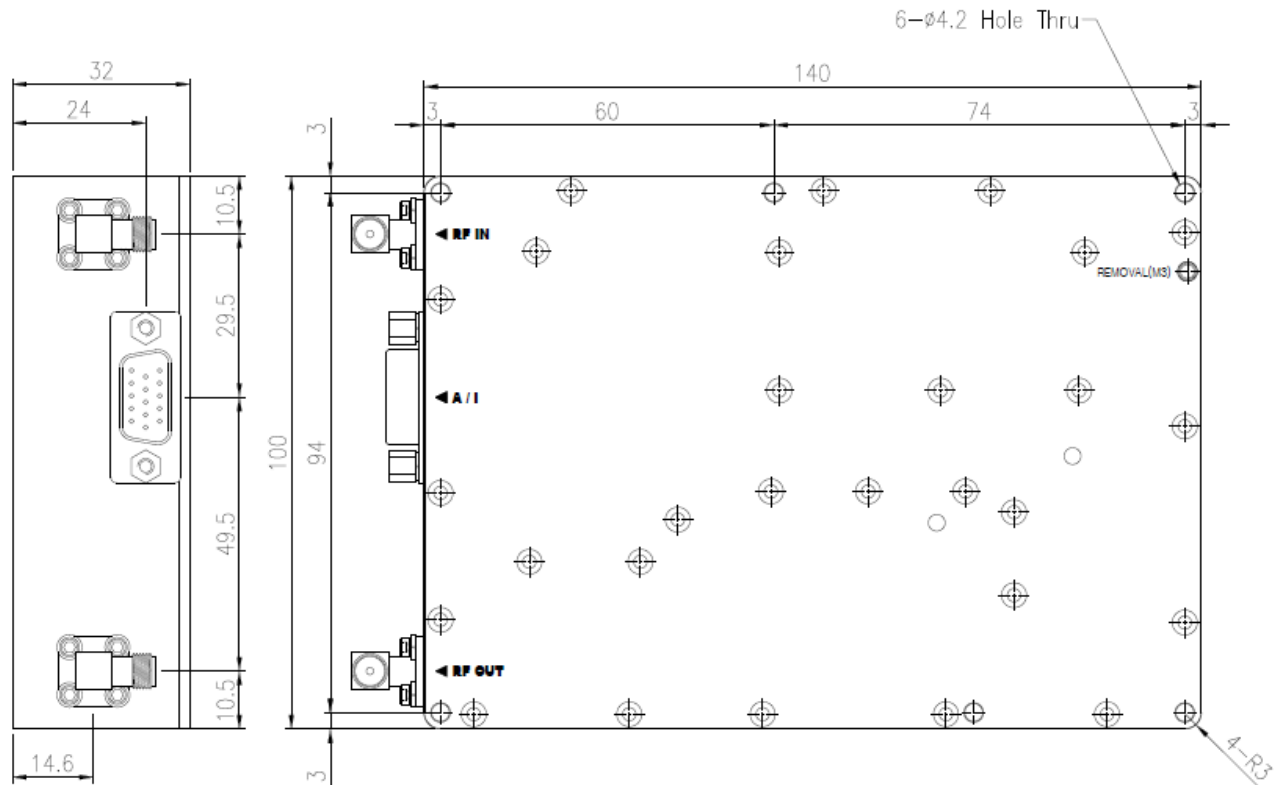
PROTECTIONS

Load VSWR @ P _{OUT} = 16W	∞ @ all load phase & amplitude for duration of 1 minute 3:1 @ all load phase & amplitude continuous	—
Thermal Overload	95°C shutdown	Max

DC INTERFACE CONNECTOR, D-Sub, 15-Pin, Male

Pin #	Description	Specification
1	GND	Ground
2	Over Power Alarm	TTL Logic High (5V) @ 44dBm ±0.5dB (Normally Low)
3	VSWR Alarm	TTL Logic High (5V) @ Open (Normally Low)
4	Temperature Monitor	Analog voltage relative to module's temperature @ (10 mV/°C x Temp) + 500 mV
5	Over Temp Alarm	TTL Logic High (5V) @ 95°C shutdown, auto-restart @ 85°C (Normally Low)
6	Shutdown	Amplifier Enable: TTL Logic Low (0V) (Internally Pulled-High)
7/13	Reserved for manufacturer	TX/RX
8	Forward Power Monitor	Analog voltage relative to forward power level @ +4V @ 42dBm, 0.1V/dB, 4FA W-CDMA
9	N/C	No Connection
10~12	VDD	+28.0V _{DC} ±1V
14~15	GND	Ground

OUTLINE DRAWING



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TYPICAL PERFORMANCE PLOTS

