

Solid State Personal Communication Power Amplifier

7086 – PCM3R3SCO
869 –894 MHz / 16 Watts 3GPP W-CDMA

The PCM3R3SCO (SKU 7086) 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
- Small form factor and lightweight
- 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 @ +28 VDC, 25°C, 50 Ω System, PAR 8 dB @ CCDF0.01%

Parameter	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	869		894	MHz
Small Signal Gain	G _{SS}	49	50	51	dB
Gain Flatness	ΔG		±0.75	±1.0	dB
Gain Flatness @ 42dBm				±0.75	dB
Gain variation over operating temperature range	ΔG _{TEMP}			±1.5	dB
Input Power Dynamic Range	P _{IN}	-25		-2	dBm
Input/Output Return Loss	S ₁₁ /S ₂₂			-14	dB
Power Output W-CDMA per 3 GPP standard	P _{WCDMA}	16			Watt
ACLR @ P _{OUT} = 42 dBm 4-Tone 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 @ 16 Watt 1 FA W-CDMA	H			-45	dBc
Spurious Signals @ 16 Watts	Spur			-70	dBc
Operating Voltage (< 560 mV peak-to-peak)	V _{DD}	27	28	29	Volt
Supply Current @ P _{OUT} = 16 W 4FA W-CDMA	I _{DD}		3.0	3.3	Amp
Max inrush current				2.4	Amp

MECHANICAL SPECIFICATIONS

Parameter	Value	Unit
Dimensions – Metric (Inch)	110 x 170 x 28 mm (4.4" x 6.7" x 1.1")	Max
Weight	3.5	Max
RF Connectors Input / Output	SMA Female	
DC and Alarms / Interface	3 Pin Dsub Hybrid Male, 9 Pin Dsub Male	
Cooling	External heatsink + forced air	

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ENVIRONMENTAL CHARACTERISTICS (Design to Meet)

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	Tc	-30		+85	°C
Storage Temperature	Tstg	-40		+85	°C
Relative humidity (non-condensing)	RH			95	%
Altitude (MIL-STD-810F Method 500.4)	ALT			30,000	Feet
Shock & Vibration (MIL-STD-810F Method 516.5)	SH / VI		Airborne		

PROTECTIONS

Load VSWR @ 16 W	∞ @ all load phase & amplitude for duration of 1 minute 3:1 @ all load phase & amplitude continuous	Nom
Thermal Overload	95°C shutdown	Max

**INTERFACE CONNECTOR, D-Sub, 15-Pin
D-Sub, 9-Pin - Control**

Pin #	Description	Specifications
1	GND	Ground
2	Over Power Alarm	5 V TTL "High": 44 dBm±0.5 dB
3	VSWR Alarm	5 V TTL "High": Open @3:1 VSWR
4	Temperature Monitor	Analog: (10 mV/°C x Temp) + 500 mV
5	Over Temp Alarm	5 V TTL High: 95°C shutdown, auto-restart @ 85°C
6	Shutdown	Amplifier Enable: 5 V TTL "Low" Amplifier Disable: 5 V TTL "High" or Open - Pull-up Resistor
7	GND	Ground
8	Forward Power Monitor	Analog: +4 V @ 42 dBm, 0.1 V/dB, 4FA WCDMA
9	N/C	Reserved

D-Sub, 3-Pin - DC

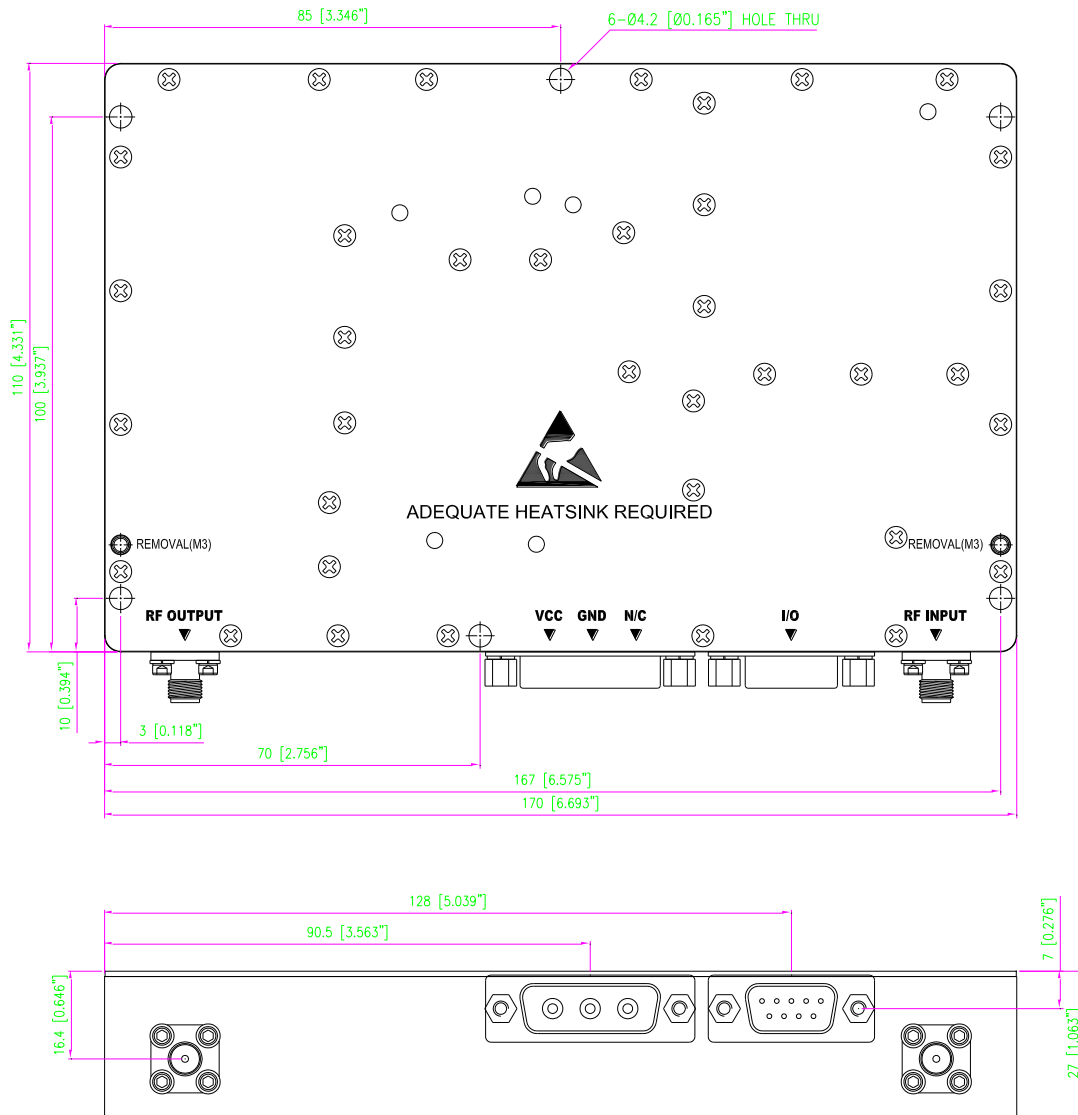
Pin #	Description	Specifications
A1	VDD	+28 V _{DC} ±1.0 V
A2	GND	Ground
A3	N/C	Spare

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OUTLINE DRAWING



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TYPICAL PERFORMANCE PLOTS
