

Solid State Personal Communication Power Amplifier

7079 – PCM5A5EIO
2110 – 2170 MHz / 60 Watts 3GPP W-CDMA

The PCM5A5EIO (SKU 7079) 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 & multi-FA W-CDMA
- 50 ohm input/output impedance
- High reliability and ruggedness
- Built-in Control & Monitoring Circuits
- Built-in Output Isolator
- High efficiency

ELECTRICAL SPECIFICATIONS @ +29V_{DC}, 25°C, 50 Ω 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} = -20dBm	ΔG		±0.75	±1.0	dB
Gain variation over operating temperature range	ΔG _{TEMP}			±0.75	dB
Input/Output Return Loss	S ₁₁ /S ₂₂			-14	dB
Power Output W-CDMA per 3GPP standard	P _{WCDMA}	60			Watt
ACLR @ P _{OUT} = 47.8dBm 4FA W-CDMA, 64 DPCH, BW = 3.84MHz Spectrum Analyzer Settings: Res BW = 30kHz, Video BW = 100Hz	Δ=5MHz			-45	dBc
	Δ=10MHz			-50	
Harmonics @ 60 Watt 1 FA W-CDMA	H			-45	dBc
Spurious Signals @ P _{OUT} = 60W	Spur			-70	dBc
Operating Voltage	V _{DC}	28	29	30	Volt
Current Consumption P _{OUT} = 60W 4FA W-CDMA	I _{DD}		8	8.5	Amp

MECHANICAL SPECIFICATIONS

Parameter	Value	Units	Unit
Dimensions	150 x 175 x 28 [5.91" x 6.89" x 1.1"]	mm[Inch]	Max
Weight	3.0	lb.	Max
RF Connectors Input/Output	Input: Type-SMA, Female Output: Type-N, Female		
DC Interface Connectors	Control: D-Sub 9-Pin, Male DC Power: Hybrid D-Sub 3-Pin, Male (3W3)		
Cooling	External Heatsink Required (Not Supplied)		

ENVIRONMENTAL CHARACTERISTICS

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

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PROTECTIONS

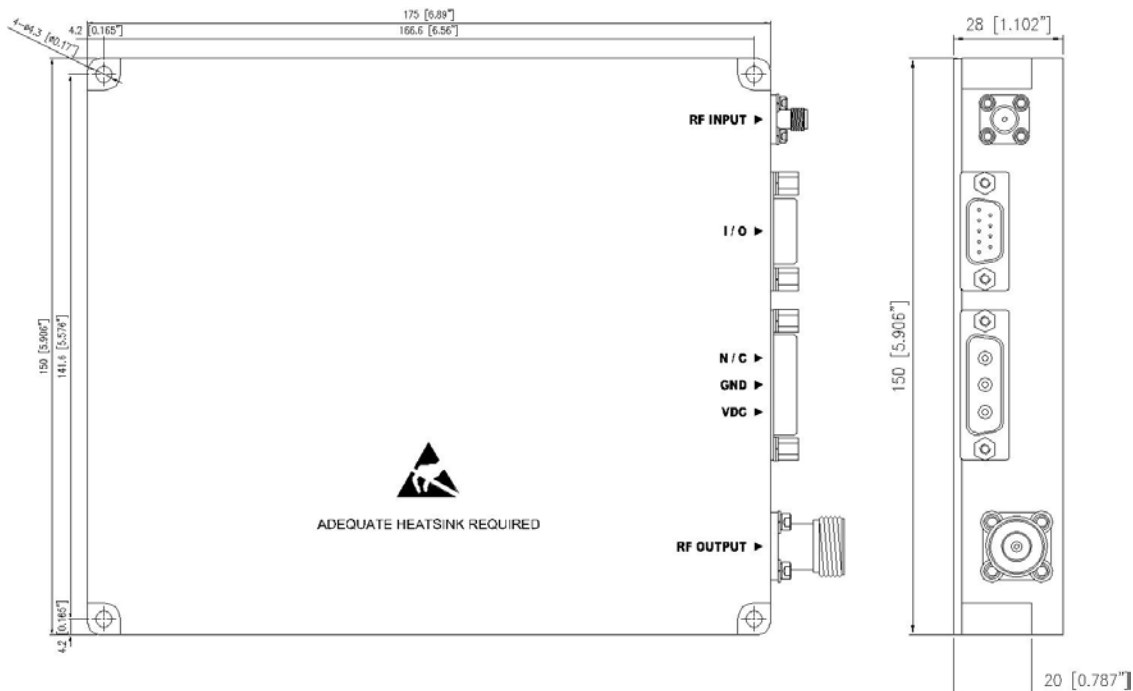
Over Power Shutdown	+49dBm	Min
Load VSWR @ P _{OUT} = 60W	∞:1 VSWR, All phases and magnitude	-
Thermal Overload	85°C shutdown	Max

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

Pin #	Description	Specifications
1	GND	Ground
2	Over Power Alarm	TTL Logic High (5V) @ 49dBm ±0.5dB (Normally Low)
3	VSWR Alarm	TTL Logic High (5V) @ ≥3:1 Load (Normally Low)
4	Temperature Monitor	Analog voltage relative to module temperature @ (10mV/°C x Temp) + 500mV
5	Over Temp Alarm	TTL logic High (5V) @ 85°C (shutdown) Auto-restart @ 75°C (Normally Low)
6	Shutdown	Amplifier Enable: TTL Logic Low (0V) (Internally Pulled-High)
7	GND	Ground
8	Forward Monitor	Analog voltage relative to forward power level: 4.0V _{DC} @ 47.8dBm, 0.1 V/dB
9	N/C	No Connection

DC POWER CONNECTOR – Hybrid, D-Sub 3-Pin, Male

Pin #	Description	Specifications
A1	VDD	+29.0V _{DC} ±1.0V
A2	GND	Ground
A3	N/C	No Connection

OUTLINE DRAWING


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7079 – PCM5A5E10

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PERFORMANCE PLOTS

