

## 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<sub>DC</sub>, 25°C, 50Ω System, PAR 8dB @ CCDF 0.01%**

Parameter	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	2110		2170	MHz
Small Signal Gain @ P <sub>IN</sub> = -20dBm	G <sub>SS</sub>	49	50	51	dB
Small Gain Flatness @ P <sub>IN</sub> = -20dBm	ΔG <sub>SS</sub>		±0.50	±0.75	dB
Gain variation over operating temperature range	ΔG <sub>TEMP</sub>			±1.0	dB
Input/Output Return Loss	S <sub>11</sub> /S <sub>22</sub>			-14	dB
Power Output W-CDMA per 3GPP standard	P <sub>WCDMA</sub>	60			Watt
ACLR @ P <sub>OUT</sub> = 47.8dBm 4FA W-CDMA, TM1, 64 DPCH, BW= 3.84MHz PAR: 8dB @ CCDF= 0.01% Spectrum Analyzer Settings: Res BW= 100kHz	Δ= 5MHz			-45	dBc
	Δ= 10MHz			-50	
Harmonics @ 60 Watt CW-1Tone	H			-45	dBc
Spurious Signals @ P <sub>OUT</sub> = 60W	Spur			-70	dBc
Operating Voltage	V <sub>DC</sub>	28	29	30	Volt
Current Consumption @ P <sub>OUT</sub> 60W 4FA W-CDMA	I <sub>DD</sub>		8	8.5	Amp

**MECHANICAL SPECIFICATIONS**

Parameter	Value	Unit
Dimension	150 x 175 x 28 / 5.91 x 6.89 x 1.1	mm/Inch
Weight	TBD	Pound
RF Connectors Input / Output	SMA-Female / Type-N, Female	-
DC Interface Connectors	Control: D-sub 9-pin, Male DC Power: Hybrid D-sub 3-pin, Male	-
Cooling	External Heatsink (not supplied)	-

**ENVIRONMENTAL CHARACTERISTICS**

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	T <sub>C</sub>	-20		+70	°C
Storage Temperature	T <sub>STG</sub>	-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 <sub>OUT</sub> = 60W	∞:1 @ all load phase & amplitude for duration of 1 minute 3:1 @ all load & phase amplitude continuous	-
Thermal Overload	95°C shutdown, auto-restart @ 85°C	Max

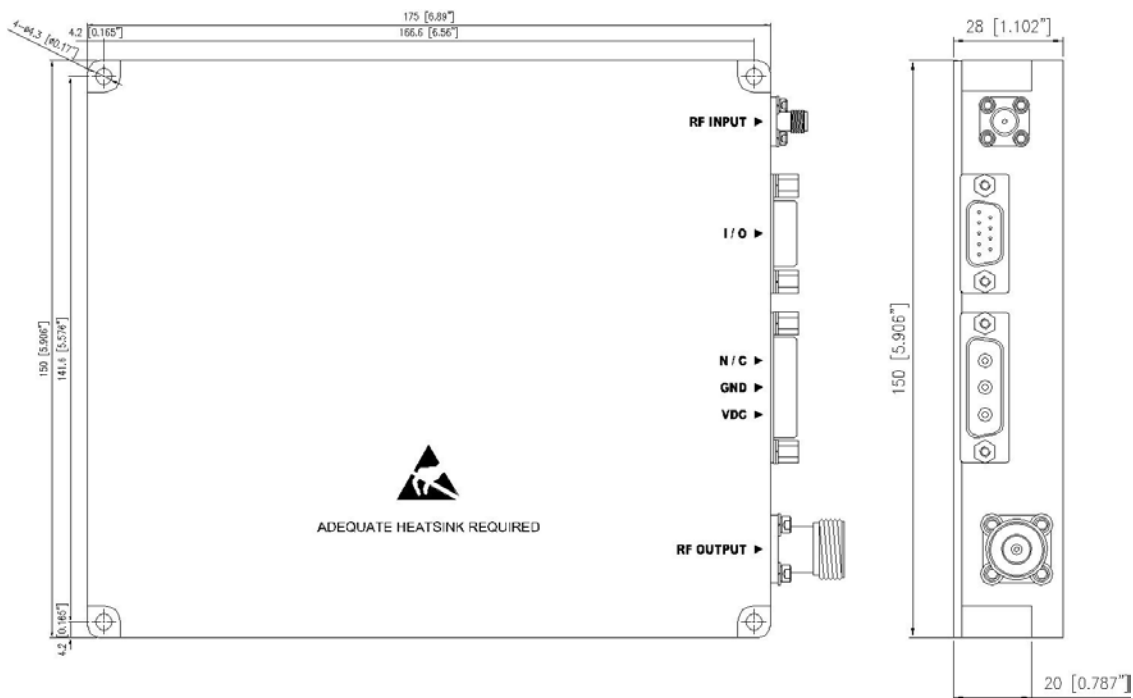
### INTERFACE CONNECTORS CONTROL – D-sub 9-pin, Male

Pin #	Description	Specification
1	GND	Ground
2	Over Power Alarm	Alarm: TTL Logic High (5V): 49dBm ±0.5dB, ( <i>Normally Low</i> )
3	VSWR Alarm	Alarm: TTL Logic High (5V): ≥3:1 VSWR, ( <i>Normally Low</i> )
4	Temperature Monitor	Analog voltage relative to module's temperature @ 10mV/°C with 0.50V <sub>OFFSET</sub> Equation; (V <sub>MEASURED</sub> - 0.50) / 0.01 = °C, or (0.75V-0.50)/0.01= 25°C
5	Over Temp Alarm	Alarm: TTL Logic High (5V): 95°C (shutdown)
6	Shutdown	Amplifier Enable: TTL Logic Low (0V), ( <i>Internally Pulled-high</i> )
7	GND	Ground
8	Forward Monitor	Analog: +4.0V <sub>DC</sub> @ 47.8dBm, 0.1V/dB
9	N/C	No Connection

### DC POWER – Hybrid, D-sub 3-pin, Male

Pin #	Description	Specification
A1	VDD	+28.0-30.0V <sub>DC</sub>
A2	GND	Ground
A3	N/C	No Connection

### OUTLINE DRAWING



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## PERFORMANCE PLOTS

