

## Solid State Personal Communication Power Amplifier

**7074 – PCM3P3QLS**
**758 – 805 MHz / 120 Watts**

The PCM3P3QLS (SKU 7074) is suitable for Ultra linear SMR and iDEN repeater and base station applications in the Cellular frequency range. Also suitable for CDMA, GSM and TDMA applications, this amplifier utilizes linear LDMOS power devices that provide 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. Empower RF's ISO9001 Quality Assurance Program assures consistent performance and the highest reliability.



- Solid-state Pre-D linear design
- Small form factor and lightweight
- Suitable for SMR, iDEN and multi FA Applications.
- 50 ohm input/output impedance
- High reliability and ruggedness
- Built-in high dynamic range ALC circuit and control functions
- Built-in Output Circulator

### ELECTRICAL SPECIFICATIONS @ +28V<sub>DC</sub>, 25°C, 50Ω System

Parameter	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	758		805	MHz
Output Power CW	P <sub>SAT</sub>	120			Watt
Output Power @ 1dB Gain Compression	P <sub>1dB</sub>	120			Watt
Power Output CDMA per IS-97	P <sub>CDMA</sub>	10			Watt
Third Order Intercept Point 2-Tones @ 38dBm/Tone, 500kHz spacing	IP3	+62	+66		dBm
Small Signal Gain	G <sub>SS</sub>	57		61	dB
Input Power Range with ALC ON	P <sub>IN</sub>	-11		-5	dBm
Small Signal Gain Flatness	ΔG		±0.5	±0.75	dB
Input Return Loss	S <sub>11</sub> /S <sub>22</sub>			-14	dB
Harmonics @ P <sub>OUT</sub> = 12W	H			-45	dBc
Noise Figure	NF		7	10	dB
Spurious Signals @ P <sub>OUT</sub> = 12W	Spur		-70	-60	dBc
Operating Voltage	V <sub>DC</sub>	26	28	30	Volt
Current Consumption @ P <sub>OUT</sub> = 50W CW	I <sub>DD</sub>		7	10	Amp
Current Consumption @ P <sub>OUT</sub> = 12W Composite	I <sub>DD</sub>		4		Amp

### MECHANICAL SPECIFICATIONS

Parameter	Value	Units	Limits
Dimensions	6.4 x 3.4 x 1.0	Inch	Max
Weight	1.0	lb.	Max
RF Connectors Input/Output	Type-SMA, Female		
DC Interface Connector	D-Sub, 9 Pin, Male		
Cooling	External Heatsink (Not Supplied)		

### ENVIRONMENTAL CHARACTERISTICS (Design to Meet)

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	T <sub>C</sub>	0		+75	°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

Input Overdrive (ALC ON)	+10 dBm	Max
Load VSWR @ P <sub>OUT</sub> = 50W	∞ @ all load phase & amplitude for duration of 1 minute 3:1 @ all load phase & amplitude continuous	-
Thermal Overload	85°C shutdown	Max

### DC INTERFACE CONNECTOR – D-Sub 9-Pin, Male

Pin #	Description	Specifications
1	Forward Power Monitor	Continuous Analog voltage relative to forward power via RMS detector FWDM: 17 - 47dBm @ 0 - 5V (100mV/dB)
2	Reverse Power Monitor	Continuous Analog voltage relative to reflected power via RMS detector REVM: 14 - 44dBm @ 0 - 5V (100mV/dB)
3	ALC ON/OFF	ALC ON = TTL Logic Low (0V) (Internally Pulled-High)
4	ALC Level	Continuous adjustable range via analog input levels Input Power Range: -11dBm to -5dBm Setting Point (ASP): 33 - 47dBm @ 0 - 5V (250mV/dB) Error Range (AER): ±1.5dB Response Time (ART): 100mS/dB
5	Mute	Amplifier Disable: TTL Logic High (5V) (Internally Pulled-Low)
6, 7	+VDD	+28.0V <sub>DC</sub> ±2V
8, 9	GND	Ground

<b>LED</b>	LED Indicator	Output Power level indicator referenced to ALC setting
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### OUTLINE DRAWING

