

## Solid State Personal Communication Power Amplifier

**7115 – PCM3R3SAJ**
**861 – 894 MHz/10 Watts WCDMA/GSM**

The PCM3R3SAJ (SKU 7115) is suitable for Ultra linear WCDMA & GSM repeater. Also suitable for other digital modulation applications, this amplifier utilizes linear LDMOS power devices that provide ample output power margins, 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 linear design
- Small form factor and lightweight
- Suitable for TETRA
- 50 ohm input/output impedance
- High reliability and ruggedness
- Built-in Control & Monitoring Circuits
- Built in output isolator

### ELECTRICAL SPECIFICATIONS @ +28 VDC, 25°C, 50 Ω System

Parameter	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	861		894	MHz
Small Signal Gain	G <sub>SS</sub>	39	40	41	dB
Gain Flatness	ΔG			±0.5	dB
Gain Variation over operating temperature range	ΔG <sub>TEMP</sub>		±0.5		dB
Input/Output Return Loss	S <sub>11</sub> /S <sub>22</sub>			-14	dB
Power Output		10			W
Inter-modulation 2 tones CW f1-861MHz +37dBm, f2-894MHz +37dBm			-60		dBc
WCDMA ACLR (64DPCH WCDMA HSPA) Performed at : 1 FA WCDMA at 40dBm	±5MHz	-45			dBc
	±10MHz	-50			
	±15MHz	-50			
WCDMA ACLR (64DPCH WCDMA HSPA) Performed at : 4 FA WCDMA at 34dBm	±5MHz	-45			dBc
	±10MHz	-50			
	±15MHz	-50			
Harmonics @ 10 Watt 1 FA	H	-40			dBc
Operating Voltage	V <sub>DD</sub>	27	28	29	Volt
Supply Current @ P <sub>OUT</sub> = 10 W	I <sub>DD</sub>		3.5	4.0	Amp

### MECHANICAL SPECIFICATIONS

Parameter	Value	Unit	Limit
Dimensions	4.3 x 7.9 x 1.4	Inch	Max
Weight	TBD	lbs.	Max
RF Connectors Input / Output	SMA Female	-	-
Interface and Alarms / DC	9-Pin D-Sub Male	-	-
Cooling	External heatsink + forced air	-	-

### ENVIRONMENTAL CHARACTERISTICS (Design to Meet)

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
Shock & Vibration (MIL-STD-810F Method 516.5)	SH / VI		Airborne		

### PROTECTIONS

Load VSWR @ 10 W	∞ @ all load phase & amplitude for duration of 1 minute 3:1 @ all load phase & amplitude continuous	Nom
Thermal Overload	90°C shutdown	Max

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### INTERFACE CONNECTORS

#### D-Sub, 9-Pin - Control

Pin #	Description	Specifications
1	UART Tx	
2	UART Rx	
3	Reverse Power Monitor	
4	Forward Power Monitor	
5	+VDD	+28.0V <sub>DC</sub> ±1.0 V
6	+VDD	+28.0V <sub>DC</sub> ±1.0 V
7	GND	Ground
8	GND	Ground
9	GND	Ground

### OUTLINE DRAWING

