

Solid State Personal Communication Power Amplifier

7092– PCM3R3SIO
869 – 894 MHz / 60 Watts CDMA

The PCM3R3SIO (SKU 7092) is suitable for single and Multi-Channel CDMA base station and repeaters applications in the Cellular frequency range. Also suitable for GSM and TDMA applications, this amplifier utilizes linear LDMOS power devices that provide excellent linearity and low distortions, high gain, and wide dynamic range. Exceptional performance, long term reliability, and high efficiency are achieved by employing advanced matching networks and combining techniques (Doherty Design), EMI/RFI filters, machined housing, 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 Multi-Carrier CDMA, GSM, and TDMA Applications
- Built-in control monitoring & protection circuits
- 50 ohm input/output impedance
- Built in Output Isolator
- High reliability and ruggedness
- High efficiency
- Doherty Design

ELECTRICAL SPECIFICATIONS @ +28V_{DC}, 25°C, 50Ω System, PAR 8dB @ CCDF 0.01%

Parameter	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	869		894	MHz
Small Signal Gain	G _{SS}	49	50	51	dB
Small Signal Gain Flatness @ P _{IN} = -20dBm	ΔG			±0.75	dB
Gain variation over operating temperature range	ΔG _{TEMP}			±0.75	dB
Input/Output Return Loss	S ₁₁ / S ₂₂			-18	dB
Power Output CDMA per IS-95 standard	P _{CDMA}	60			Watt
ACPR @ P _{OUT} = 47.8dBm Average 10FA CDMA, 9-Channels, IS-95, BW= 1.23MHz Settings: RBW= 30kHz, VBW= 100Hz	Δ= 750kHz			-29	dBc
	Δ= 1.98MHz			-44	
Harmonics @ P _{OUT} = 60W 1FA CDMA	2 ND			-45	dBc
Spurious Signals @ P _{OUT} = 60W	Spur			-70	dBc
Operating Voltage	V _{DD}	27	28	29	Volt
Current Consumption @ P _{OUT} = 60W 10FA CDMA	I _{DD}		8	8.5	Amp

MECHANICAL SPECIFICATIONS

Parameter	Value	Unit
Dimensions – Metric (Inch)	210 x 175 x 28 mm (8.3" x 6.9" x 1.1")	Max
Weight	4	Lbs.
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	
Cooling	External Heatsink (not supplied)	

ENVIRONMENTAL CHARACTERISTICS

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	T _C	-30		+85	°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		

LIMITS

Over Power Shutdown	+49dBm	Min
Load VSWR @ P _{OUT} = 60W	∞:1 VSWR (built-in isolator)	-
Thermal Overload	95°C shutdown	Max

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CONTROL INTERFACE CONNECTOR – D-sub 9-pin, Male

Pin #	Description	Specifications
1	GND	Ground
2	Over Power Alarm	Alarm: TTL Logic High (5V) @ 49dBm ±0.5dB
3	VSWR Alarm	Alarm: TTL Logic High (5V)
4	Temperature Monitor	Analog voltage relative to units temperature @ 10mV/°C (0.5V _{OFFSET}) Formula: $(V_{MEASURED} - 0.5)/0.01 = °C$, Example: $(0.75V-0.5)/0.01 = 25°C$
5	Over Temp Alarm	Alarm: TTL Logic High (5V), 95°C shutdown, operation resumes @ 85°C
6	Shutdown	Amplifier Disable: TTL Logic High (5V) (Internally Pulled-low)
7	GND	Ground
8	Forward Power Monitor	Analog voltage 0-5V _{DC} relative to forward power level 47.8dBm= 4.0V _{DC} , 27.8-47.8dBm range @ 0.1V/dB
9	N/C	No Connection

DC POWER – Hybrid, D-sub 3-pin, Male

Pin #	Description	Specifications
A1	VDD	+27.0-29.0V _{DC}
A2	GND	Ground
A3	N/C	No Connection

OUTLINE DRAWING

