

Solid State Personal Communication Power Amplifier

7085 – PCM5A5EFO
2110 – 2170 MHz / 30 Watts 3GPP W-CDMA

The PCM5A5EFO (SKU 7085) 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 (Doherty Design), 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
- Doherty Design

ELECTRICAL SPECIFICATIONS @ +28V_{DC}, 25°C, 50 Ω System, PAR 8 dB @ CCDF0.01%

Parameter	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	2110		2170	MHz
Output Power @ W-CDMA per 3GPP Standard	P _{WCDMA}	30			Watt
Input Power Range	P _{IN}	-25		-2	dBm
Power Gain Flatness @ 44.8dBm	Δ _{PG}			±0.75	dB
Small Signal Gain	G _{SS}	49	50	51	dB
Small Signal Gain Flatness	Δ _G		±0.75	±1.0	dB
Gain Variation over operating temperature range	ΔG _{TEMP}			±1.5	dB
Input/Output Return Loss	S ₁₁ /S ₂₂			-14	dB
ACLR @ P _{OUT} = 30W 4FA W-CDMA, 64 DPCH BW = 3.84MHz, P _{IN} = -10dBm Spectrum Analyzer Settings: Res BW = 30kHz, Video BW = 100Hz	Δ = 5MHz			-45	dBc
	Δ = 10MHz			-50	
Harmonics @ 30W 1FA W-CDMA	H			-45	dBc
Spurious Signals @ P _{OUT} = 30W	Spur			-70	dBc
Operating Voltage	V _{DD}	27	28	29	Volt
Current Consumption P _{OUT} = 30W 4FA W-CDMA	I _{DD}		5.5	6	Amp

MECHANICAL SPECIFICATIONS

Parameter	Value	Unit
Dimensions – Metric (Inch)	130 x 170 x 30 mm (5.1" x 6.7" x 1.2")	Max
Weight	TBD	Max
RF Connectors Input/Output	Input: Type-SMA, Female Output: Type-N, Female	
DC Interface Connectors	DC Power: D-Sub Hybrid 3-Pin, Male I/O Control: D-Sub 9-Pin, Male	
Cooling	External Heatsink + Forced air	

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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
Shock / Vibration (MIL-STD-810F Method 500.4)	SH / VI		Airborne		

PROTECTIONS

Over Power Shutdown		+46 dBm		Typ
Load VSWR @ 30W		∞:1 VSWR		-
Thermal Overload		95°C shutdown		Max

I/O CONTROL CONNECTOR – D-Sub 9-Pin, Male

Pin #	Description	Specifications
1	GND	Ground
2	Over Power Alarm	TTL Logic "High" (5V): 46 dBm±0.5 dB
3	VSWR Alarm	TTL Logic "High" (5V): 3:1
4	Temperature Monitor	Analog: (10mV/°C x Temp) + 500 mV
5	Over Temp Alarm	TTL Logic "High": (5V): 95°C shutdown, Auto-restart @ 85°C
6	Shutdown	Amplifier Enable: TTL Logic "Low" (<0.7V) (<i>Internally Pulled-High</i>)
7	GND	Ground
8	Forward Power Monitor	Analog: +4V _{DC} @ 44.8dBm, 0.1V/dB, 4FA W-CDMA
9	N/C	No Connection

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

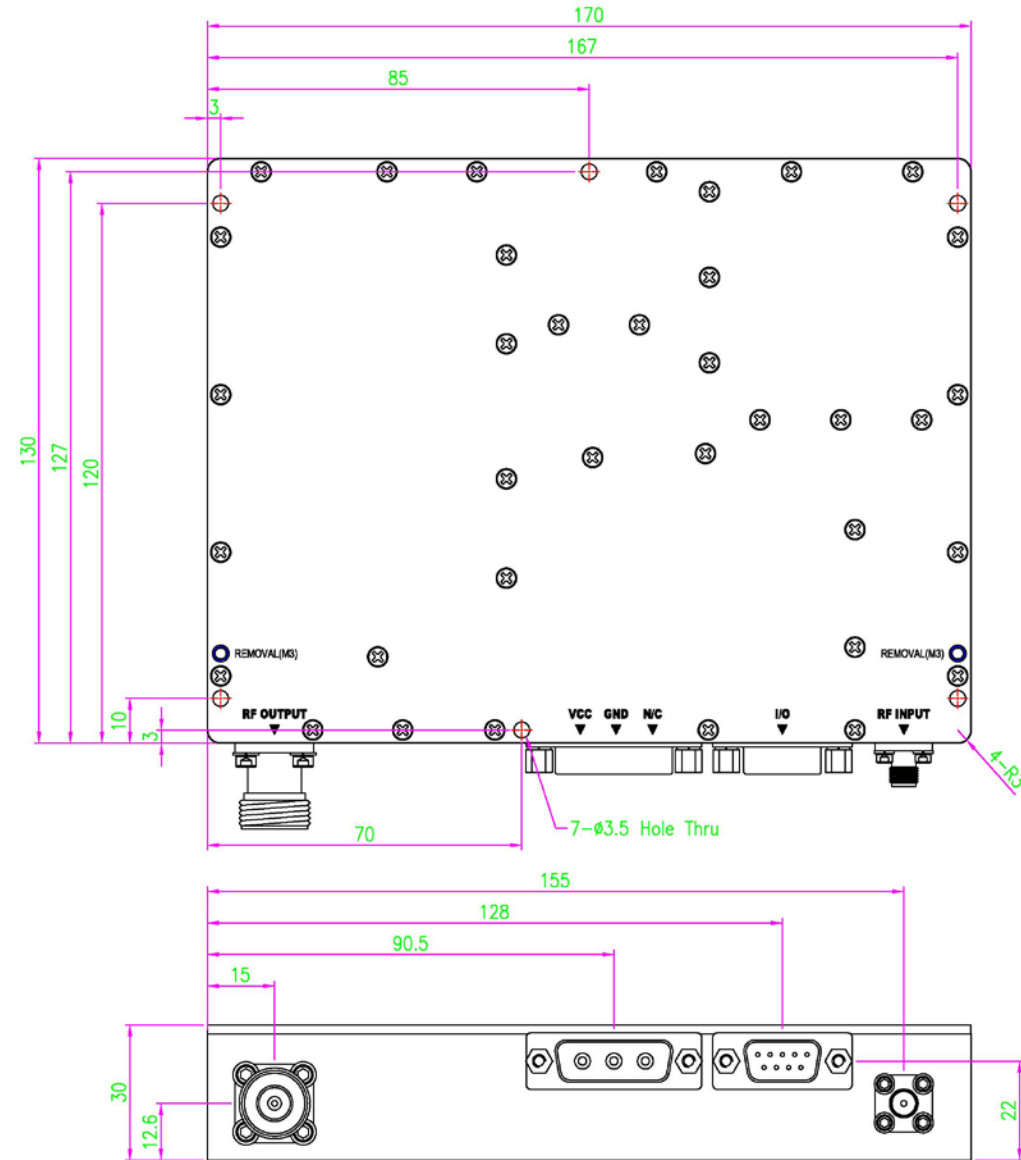
Pin #	Description	Specifications
A1	VDD	+28.0V _{DC} ±1.0V
A2	GND	Ground
A3	N/C	No Connection

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OUTLINE DRAWING



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30W, WCDMA 4FA PAR 8dB

