

Solid State Personal Communication Power Amplifier

7015 - PCM3Q4AFQ
850 - 870MHz / 30Watts iDEN

AMPLIFIER MODULE FOR SMALL iDEN BASE STATIONS AND REPEATERS

The PCM3Q4AFQ (SKU # 7015) is suitable for single and Multi-Channel base station and repeaters applications in the iDEN frequency range. Also suitable for CDMA, 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, EMI/RFI filters, machined housing, and qualified components. Empower RF's ISO9001 Quality Assurance Program assures consistent performance and the highest reliability.



- Solid-state linear design
- Small and lightweight
- Suitable for iDEN, GSM, TDMA and Multi-Carrier CDMA Applications
- 50 Ohm Input/Output impedance
- High reliability and ruggedness

ELECTRICAL SPECIFICATIONS @ +27V_{DC}, 25°C, 50Ω System

Characteristics	Rating	Limit
Frequency Response	850 - 870MHz	Typ
RF Input Power Range	-29dBm to -9dBm CDMA Power	Min
Power Output iDEN composite	30Watts Multi-channel, 40Watts single channel Overall conditions	Min
Gain Window (Overall conditions)	54dB ±0.75dB within input dynamic range	Min
Gain Variation vs. Frequency	±0.5dB overall Frequency	Max
Gain Flatness over operating frequency range	±0.2dB over any 5MHz	Max
Gain variation over operating temperature range	±0.75dB	Max
Intermodulation Distortion	50dBc with 2-tone @ 30 Watt output	Min
Harmonics	2 nd : -40dBc, 3 rd : -60dBc	Max
Input/Output Return Loss	-14dB (50 Ohm reference)	Max
Noise Receive Band (30W output)	-34dBm (30kHz RBW) @ receive band	Max
Reverse IMD and Load VSWR	Output Isolator	-
Conducted Emission	DC Power and Control line include RFI filters	-
Output Protection	Infinite VSWR, all phases with forward output power up to 50Watts	Min
Load Stability	VSWR ∞ : 1, all phases	Nom
Supply Voltage	27V _{DC} ±1.0V	Nom
Current Consumption @ P _{OUT} = 30 Watts composite	8.0Amp	Typ

MECHANICAL SPECIFICATIONS

Parameter	Value	Units	Limits
Dimensions (L x W x H)	8.1 x 6.7 x 1.1	Inches	Max
Weight	3.5	Lbs	Max
RF Connectors Input/Output	Type-SMA, Female / Type-N, Female		
DC Interface Connectors	Control: D-sub 9-Pin, Male DC Power: Hybrid D-Sub 3-Pin, Male (3W3)		
Cooling	External Heatsink (Not Supplied)		

ENVIRONMENTAL CHARACTERISTICS (Design to Meet)

Parameter	Description	Limit
Operating Temperature (Case Temperature)	-20°C to +60°C	Min
Relative Humidity	0 to 90% Non-condensing	Min
Altitude	10,000 feet	Typ
Shock and Vibration	Normal Truck transportation	Min

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PROTECTIONS

Input Overdrive	+6dBm	Max
Load VSWR @ P _{OUT} = 50W	∞ @ all load phase & amplitude continuous (Isolator Protected)	-
Thermal Overload	85°C shutdown	Max

CONTROL INTERFACE CONNECTOR – D-Sub 9-Pin, Male

Pin #	Description	Specifications
1	GND	Ground
2	Over Power Alarm	TTL "High": 46dBm±0.5dB
3	VSWR Alarm	TTL "High": 3:1
4	Temperature Monitor	Analog: (10mV/°C x Temp) + 500mV
5	Over Temp Shutdown	TTL: 85°C shutdown, auto-restart @ 75°C
6	Shutdown	Amplifier Disable: TTL Logic "High" (5V) (Internally Pulled-Low)
7	GND	Ground
8	Forward Power Monitor	Analog: +4V @ 44.8dBm, 0.1V/dB
9	N/C	No Connection

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

Pin #	Description	Specifications
A1	VDD	+27.0V _{DC} ±1V
A2	GND	Ground
A3	N/C	No Connection

OUTLINE DRAWING

