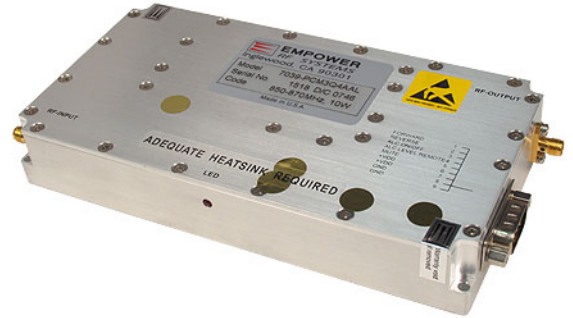


Solid State Personal Communication Power Amplifier

7075 – PCM3Q3SLS
805 - 870MHz / 120Watts CW

The PCM3Q3SLS (SKU # 7075) 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.



- 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_{DC}, 25°C, 50Ω System

Parameter	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	805		870	MHz
Output Power CW	P _{SAT}	120			Watt
Input Power Range with ALC ON	P _{IN}	-11		-5	dBm
Gain Flatness @ P _{IN} = -20dBm	ΔG		±0.5	±0.75	dB
Input/Output Return Loss	S ₁₁ /S ₂₂		-20	-14	dB
Small Signal Gain @ P _{IN} = -20dBm	G	57	59	61	dB
Third Order Intercept Point 2-Tone @ 38dBm/Tone, 500kHz Spacing	IP3	+62	+66		dBm
Harmonics @ P _{OUT} = 12W	H			-45	dBc
Spurious Signals @ P _{OUT} = 12W	Spur		-70	-60	dBc
Noise Figure	NF		7	10	dB
Operating Voltage	V _{DD}	26	28	30	Volt
Quiescent Current	I _{DQ}		2		Amp
Current Consumption @ P _{OUT} = 50W, CW (ALC ON)	I _{DD}		7	10	Amp
Current Consumption @ P _{OUT} = 12W, 2-Tone	I _{DD}		4		Amp

ENVIRONMENTAL CHARACTERISTICS

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	T _C	0		+75	°C
Storage Temperature	T _{STG}	-40		+85	°C
Relative Humidity w/o Condensation	RH			95	%
Altitude (MIL-STD0-810F Method 500.4)	ALT			30,000	Feet
Vibration/Shock MIL-STD-810F - Method 514.5/516.5 – Proc I	VI/SH		Airborne		

MECHANICAL SPECIFICATIONS

Parameter	Value	Units	Limits
Dimensions	6.4 x 3.4 x 1.0	Inch	Max
Weight	1.4	lb.	Max
RF Connectors Input/Output	Type- SMA, Female		
DC Interface Connector	D-Sub 9-Pin, Male		
Cooling	External Heatsink (Not Supplied)		

Solid State Personal Communication Power Amplifier

7075 – PCM3Q3SLS

805 - 870MHz / 120Watts CW

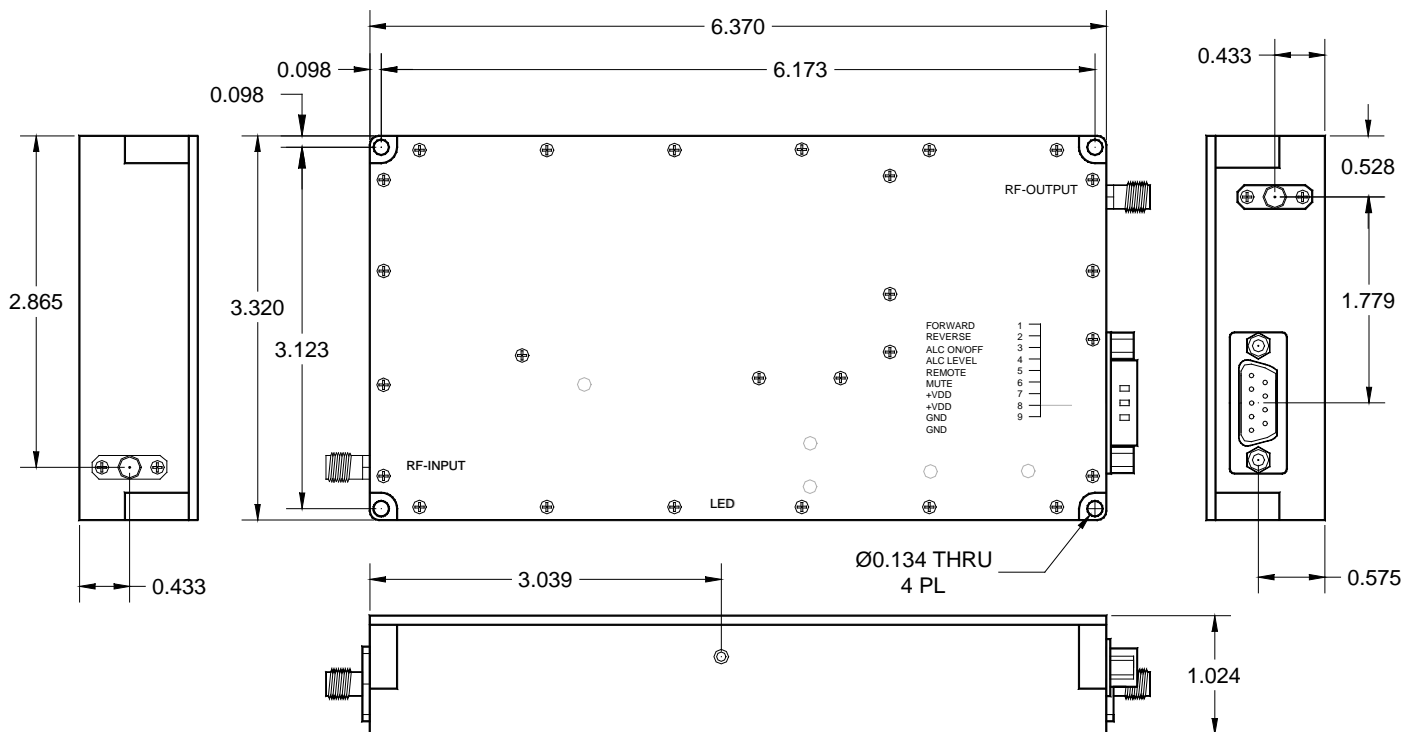
Limits

Input RF drive level without damage	+10dBm	Max
Load VSWR @ P _{OUT} = 50W	Infinite @ all load phase & amplitude	-
Thermal Overload	85°C shutdown	Max

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

Pin #	Description	Specifications
1	Forward Monitor	Continuous Analog voltage relative to forward power level FWDM: 17 – 47dBm @ 0 - 5V (100mV/dB)
2	Reverse Monitor	Continuous Analog voltage relative to reflected power level 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 _{DC} ±2V
8, 9	GND	Ground
LED	LED Indicator	Output Power level indicator referenced to ALC setting

OUTLINE DRAWING



Solid State Personal Communication Power Amplifier

7075 – PCM3Q3SLS

805 - 870MHz / 120Watts CW

PERFORMANCE PLOTS

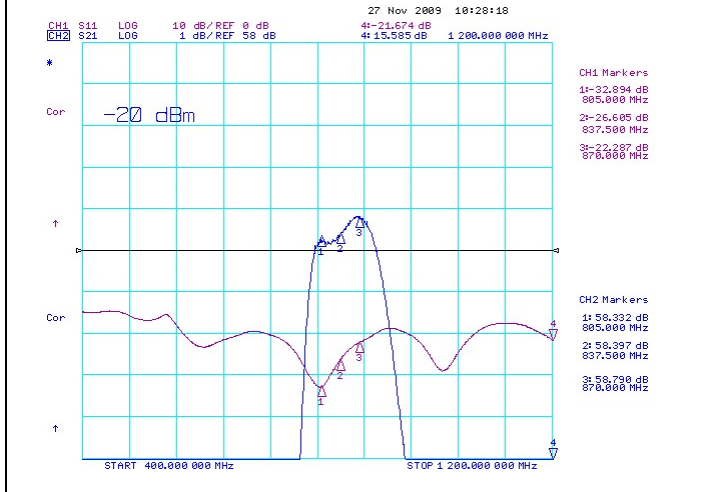
Plot 1 – Broadband Sweep, Small Signal Gain

Top curve: Small Signal Gain @ $P_{IN} = -20\text{dBm}$

Reference: 58dB, 1dB/div.

Bottom Curve: Input Return Loss

Reference: 0dB, 10dB/div.



Plot 2 – ALC Response @ 50W

Top Curve : ALC ON @ 50W, $P_{IN} = -8\text{dBm}$

Reference: 55dB, 1dB/div.

Bottom Curve: Input Returns Loss

Reference: 0dB, 10dB/div.

