

Solid State Personal Communication Power Amplifier

7050 - PCM4S5A6M
1800 – 1860 MHz / 4Watts CDMA

The PCM4S5A6M (SKU 7050) is designed for DCS & CDMA single & multi-channel repeater applications. Also suitable for GSM, and TDMA digital modulations, this amplifier provides 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 efficient broadband RF 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 and lightweight
- Suitable for CW, DCS, GSM, TDMA & multi FA
- 50 ohm input/output impedance
- High reliability and ruggedness
- Built-in Output isolator and monitoring circuit

ELECTRICAL SPECIFICATIONS @ +28V_{DC}, 25°C, 50Ω System

Parameter	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	1800		1860	MHz
Output Power CW	P _{SAT}		30		Watt
Output Power @ 1dB Gain Compression	P _{1dB}	25			Watt
Output Power CDMA	P _{CDMA}	4			Watt
Power Gain @ 4W composite	G _p	46			dB
Small Signal Gain Flatness	ΔG _{SS}			±0.5	dB
ACPR @ 4W CDMA	ACPR			-50	dBc
F _C ±885kHz @ 30kHz RBW, 100Hz VBW				-60	dBc
F _C ±1.98MHz @ 30kHz RBW, 100Hz VBW				-12	dBm
F _C ±3.125MHz @ 1MHz RBW					
Third Order Intercept Point 2-Tone @ 33dBm/Tone, 500kHz spacing	IP3		+58		dBm
Input/Output Return Loss	S ₁₁ / S ₂₂			-14	dB
Noise Figure	NF		7	10	dB
Harmonics @ P _{OUT} = 25W	H			-45	dBc
Spurious Signals	Spur		-70	-60	dBc
Operating Voltage	V _{DD}	26	28	30	Volt
Current Consumption @ P _{OUT} = 25W CW	I _{DD}		3.0		Amp
Current Consumption @ P _{OUT} = 4W Composite	I _{DD}		1.6	3.0	Amp

MECHANICAL SPECIFICATIONS

Parameter	Value	Units	Limits
Dimensions	5.0 x 3.75 x 1.0	Inch	Max
Weight	1.0	lb.	Max
RF Connectors In/Out	Type-SMA, Female		
DC Connectors	D-sub 9-pin, Male		
Cooling	External Heatsink (not supplied)		

ENVIRONMENTAL CHARACTERISTICS (Design to Meet)

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	T _C	-10		+50	°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	VI / SH		Airborne		
MIL-STD-810F Method 514.5/516.5 – Proc I					

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LIMITS

Input RF drive level without damage	+6dBm	Max
Over Power Shutdown	46dBm	Min
Load VSWR @ P _{OUT} = 30W	∞ @ all load phase & amplitude continuous (built-in isolator)	-
Thermal Overload	85°C shutdown	Max

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

Pin #	Description	Specifications
1	Forward Power Monitor	Continuous Analog voltage 0-5V _{DC} relative to forward power level 40dBm= 4.7V _{DC} , 23-40dBm range @ 200mV/dB
2	Reverse Power Monitor	Continuous Analog voltage 0-5V _{DC} relative to reflected power level 36dBm= 4.7V _{DC} , 26-36dBm range @ 150mV/dB
3	ALC ON/OFF	ALC OFF: TTL Logic High (5V) (Internally Pulled-low)
4	ALC Level	Continuous adjustable range via analog input levels Setting Point (ASP): 31-41dBm @ 0-5V (300mV/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	+26.0-30.0V _{DC}
8&9	GND	Ground

LED	LED Indicator	Output Power level indicator referenced to ALC setting
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