

Solid State Personal Communication Power Amplifier

HD33870

130~174 MHz / 25 Watts CW

- Solid-state linear design
- Small and lightweight
- Suitable for CW, GSM, ESMR, iDEN, TDMA & multi FA CDMA
- 50 ohm input/output impedance
- High reliability and ruggedness
- Built in monitoring circuit

ELECTRICAL SPECIFICATIONS @ +28 VDC, 25°C, 50 Ω System

Parameter	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	130		174	MHz
Output Power CW	P _{SAT}	40			Watt
Output Power @ 1 dB Gain Compression Point	P _{1dB}	25			Watt
ALC Range		10			dB
Small Signal Gain	G _{SS}	44	45	46	dB
Gain Flatness (ALC On)	Δ G			± 1.0 TBD	dB
Third Order Intercept Point 2-Tones, P _{OUT} = 37dBm Avg., Δ = 500 KHz	IP3	+57 TBD			dBm
Input Return Loss	S ₁₁ / S ₂₂			-14	dB
Noise Figure	NF		8 TBD	10 TBD	dB
Harmonics @ P1 dB Gain Compression Point	H			-40	dBc
Spurious Signals	Spur		-70	-60	dBc
Operating Voltage	V _{DC}	26	28	30	Volt
Supply Current @ P _{OUT} = 5W Avg.	I _{DD}			3.0 TBD	Amp

MECHANICAL SPECIFICATIONS

Parameter	Value	Units	Limits
Dimensions	160 x 90 x 25	mm	Max
Weight	1.5	lb.	Max
RF Connectors In/Out	SMA female		
DC Connectors	D-sub, 9 Pins, Male		
Cooling	External Heat-sink		

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ENVIRONMENTAL CHARACTERISTICS

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	T _c	-10		+60	°C
Storage Temperature	T _{stg}	-40		+85	°C
Relative humidity (non-condensing)	RH			95	%

PROTECTIONS

Input Overdrive	+6 dBm	Max
Over Power Shutdown	46 dBm	Nom
Load VSWR @ 25W output power	∞ @ all load phase & amplitude	Nom
Thermal Overload	85°C shutdown	Max

INTERFACE CONNECTORS

D-Sub, 9-Pin

Pin #	Description	Specifications
1	Forward Power Monitor	Continuous Analog voltage relative to forward power via RMS detector FWDM: 20 – 40 dBm @ 0 – 5 V (100 mV/dB) 30dBm output = V _{FWD} = 2.5 V _{DC}
2	Reverse Power Monitor	Continuous Analog voltage relative to reflected power via RMS detector REVM: 20 – 40 dBm @ 0 - 5V (100 mV/dB) 30dBm output = V _{REV} = 2.5 V _{DC}
3	ALC ON/OFF	ALC ON = TTL “Low” ALC OFF = TTL “High”
4	ALC Level	Continuous adjustable range via analog input levels Setting Point (ASP): 30(2.5Vdc) – 40 dBm(3.5Vdc) @ 0 – 5 V (100 mV/dB) Error Range (AER): ±1.5 dB Response Time (ART): 100 mS/dB
5	Mute	Amplifier Enable: TTL “Low” or Open Amplifier Disable: TTL “High”
6	+VDD	+28 ± 2 V _{DC}
7	+VDD	+28 ± 2 V _{DC}
8	GND	Ground
9	GND	Ground

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OUTLINE DRAWING

