

Solid State Matched Band High Power Amplifier

5008 - MBM3435KO
3.4 - 3.5GHz / 100Watts

The MBM3435KO (SKU# 5008) is suitable for high power linear applications in the new WLL frequency range. This amplifier utilizes linear GaAsFET power devices that provide excellent linearity, high gain, and wide dynamic range. Exceptional performance, long term reliability, and high efficiency are achieved by employing advanced broadband matching networks and combining techniques, built-in sequence regulators, EMI/RFI filters, machined housing, and qualified components. Empower RF's ISO9001 Quality Assurance Program assures consistent performance and the highest reliability.



- Solid-state Class A linear design
- Instantaneous broadband
- Small and lightweight
- Suitable for all modulation types
- 50 Ohm Input/Output impedance
- High reliability and ruggedness
- Built in output detector.

ELECTRICAL SPECIFICATIONS @ VDD=+12VDC, T=25°C, 50Ω System

Parameter	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	3.4		3.5	GHz
Power Output CW	P _{SAT}	100			Watt
Power Output @ 1dB G.C.P	P _{1dB}	80			Watt
Power Output, Meeting ETSI Mask (16-QAM)	P _{QAM}		30		Watt
Input Power for nominal Pout	P _{IN}		0		dBm
Small Signal Gain	SSG	50			dB
Small Signal Gain Flatness	ΔG			±1	dB
Gain Changes with Temperature	ΔG _T			±1	dB
Return Loss Input/Output	S11			-10	dB
Noise Figure	NF		7	10	dB
Third Order Intercept Point 2-Tones, Pout = 10W Avg., Δ = 100KHz	IP3		+60		dBm
Harmonics @ 1dB G.C.P	H			-30	dBc
Spurious Signals	Spur		-70	-60	dBc
Operating Voltage	VDC	11	12	13	Volt
Current Consumption @ 100W Output	I _{DD}			35	Amp
Test port coupling	TP _{cup}		30		dB

MECHANICAL SPECIFICATIONS

Parameter	Value	Units	Limits
Dimensions / With Heatsink	12.75x7.6x1.1 / 14.25x8.6x2.5	Inch	Max
Weight / With Heatsink	10 / 20	lb.	Max
RF Connectors Input / Sample / Output	SMA / SMA female / Type-N female		
DC / Control Interface	DC Terminal Lugs / D-sub 9-Pins		
Cooling	External Forced Air		

ENVIRONMENTAL CHARACTERISTICS (Design to Meet)

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	T _c	-25		+60	°C
Storage Temperature	T _{stg}	-40		+85	°C
Relative humidity w/o condensation	RH	95			%
Altitude	ALT	13,000	30,000		Feet
Shock / Vibration	SH / VI		Airborne		

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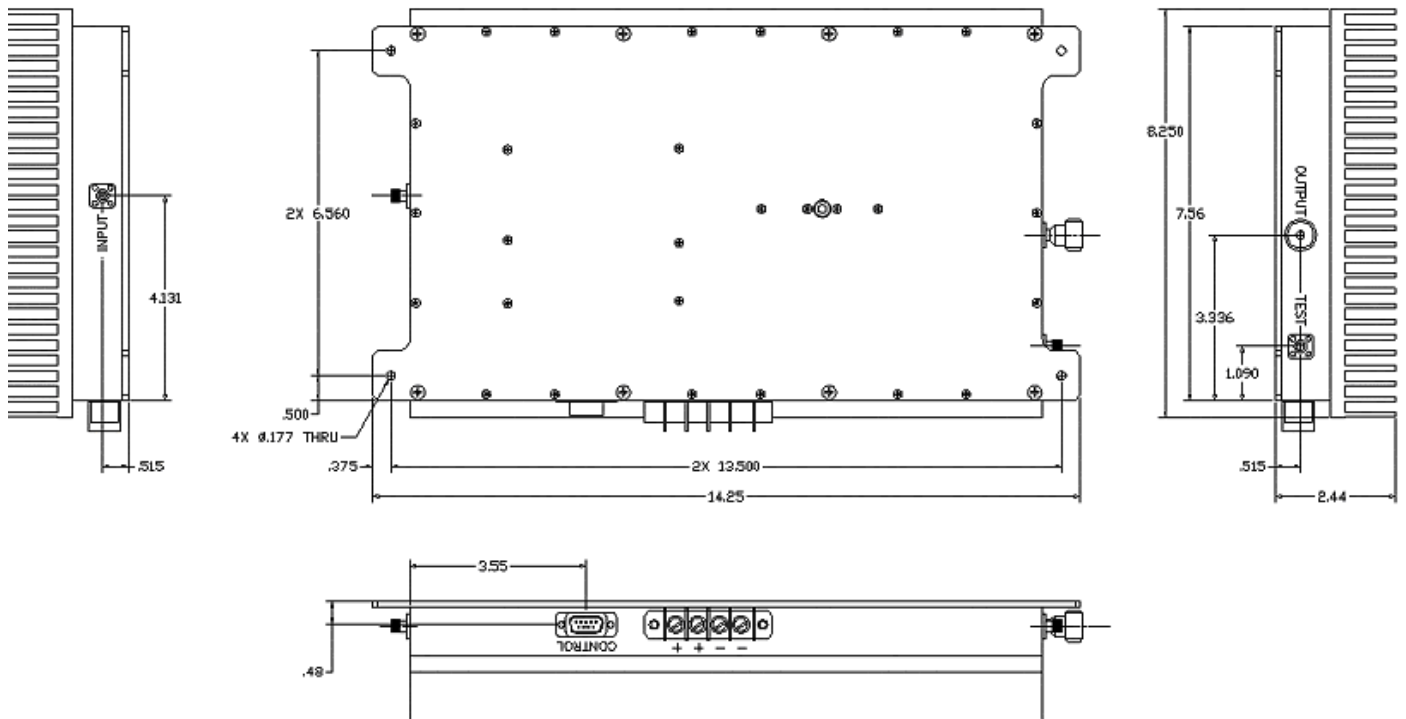
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PROTECTIONS

RF Input Overdrive	OD		+10	dBm
Load VSWR @ 80W - 5 Seconds	Ψ		5:1	-
Thermal Overload	T _{OL}	75		°C

OUTLINE DRAWING



D-Sub, 9-Pins Connector

1. Fwd. Detect (Analog)
2. Rev. Detect (Analog)
3. Temp. Alarm 75°C (TTL)
4. NC
5. Mute (On/Off) TTL
- 6, 7. NC
- 8, 9. GND

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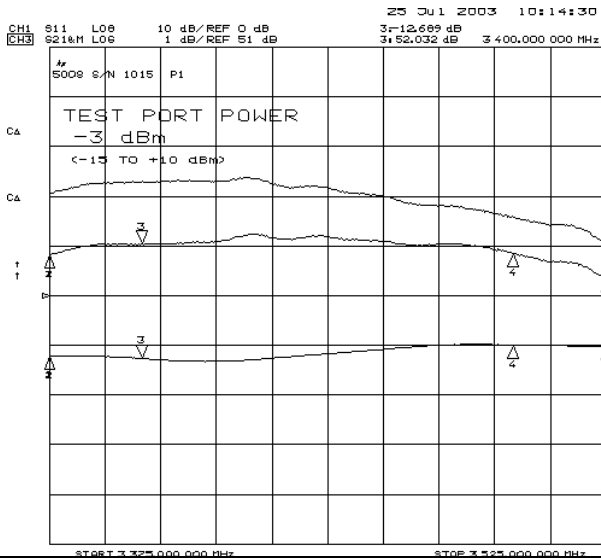
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TYPICAL PERFORMANCE PLOTS

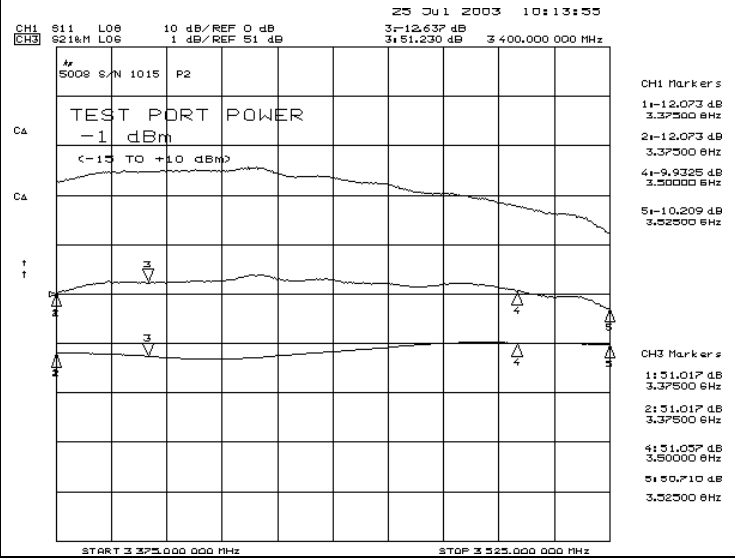
Narrow Band Sweep @ P1dB

Top Curve: Small signal Gain @ Pin = -20dBm
 Middle curve: Gain @ Pin = -3dBm
 Reference: 51dB, 1dB/Div.
 Bottom Curve: Input VSWR



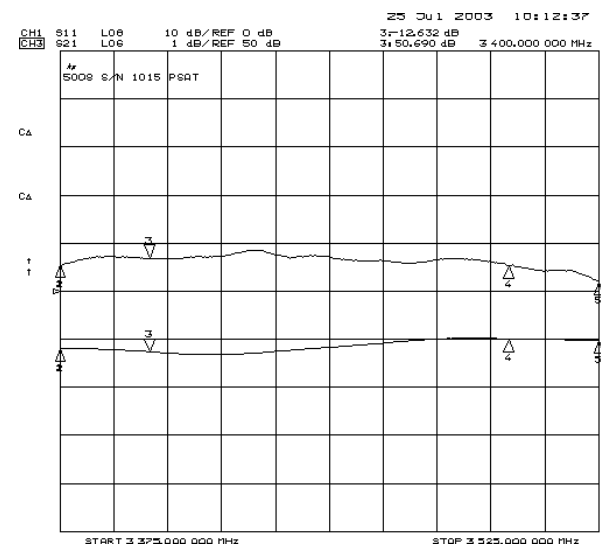
Narrow Band Sweep @ 100W

Top Curve: Small Signal Gain @ Pin = -20dBm
 Middle Curve: Power Gain @ Pin = -1dBm
 Reference: 51dB, 1dB/Div.
 Bottom Curve: Input VSWR



Narrow Band Sweep @ PSAT

Middle Curve: Power Gain @ Pin = 0dBm
 Reference: 50dB, 1dB/Div.
 Bottom Curve: Input VSWR



Wide Band Sweep

Top Curve: Small Signal Gain @ Pin = -20dBm
 Middle Curve: Power Gain @ Pin = 0dBm
 Reference: 45dB, 10dB/Div.
 Bottom Curve: Input VSWR

