

Solid State Matched Band High Power Amplifier

6001 - MBS3135HM
3100 - 3500MHz / 50Watts

PRELIMINARY INFORMATION

The MBS3135HM (SKU # 6001) is suitable for S-Band high power linear CW and pulse applications. This amplifier utilizes high power GaAsFET devices that provide high gain, wide dynamic range, low distortions and good linearity. Exceptional performance and high efficiency are achieved by employing advanced broadband RF matching networks and combining techniques, built in high quality power supply, EMI/RFI filters, machined housings and all qualified components. Empower RF's ISO9001 Quality Assurance Program assures consistent performance and the highest reliability.



Shown with option package 05

- Solid-state linear design
- Instantaneous broadband
- Small and lightweight
- Standard front panel manual gain adjust
- Suitable for all modulation standards
- 50 Ohm Input/Output impedance
- Built in control, monitoring and protection circuits
- High reliability and ruggedness

ELECTRICAL SPECIFICATIONS @ 120VAC, 25°C, 50Ω System

Parameter	Symbol	Min	Typ	Max	Unit
Operating Bandwidth	BW	3100		3500	MHz
Output Power CW	P _{SAT}	50	60		Watt
Output Power @ P1dB G.C.P.	P _{1dB}	40			Watt
Power Gain @ 1dB G.C.P	G _{1dB}	46			dB
Input Power for Nominal Pout	P _{IN}		0		dBm
Small Signal Gain Flatness	ΔG		±0.5	±1.0	dB
Input/Output Return Loss	S11/S22			-10	dB
Noise Figure	NF			10	dB
Third Order Intercept Point	IP3		+56		dBm
Harmonics @ rated P1dB G.C.P.	H		-30		dBc
Spurious Signals	Spur		-70	-60	dBc
Operating Voltage (single phase) 50/60Hz	V _{AC}	100		240	VAC
AC Power Consumption	P _D			600	Watts

ENVIRONMENTAL CHARACTERISTICS

Parameter	Symbol	Min	Typ	Max	Unit
Operating Temperature	T _c	0		+50	°C
Non-operating Temperature	T _{stg}	-40		+85	°C
Relative humidity w/o condensation	RH	95			%
Altitude	ALT	10,000	30,000		Feet
Shock & Vibration	SH / VI		Airborne		

MECHANICAL SPECIFICATIONS

Parameter	Value	Units	Limits
Dimensions	19 x 3.5 x 18	Inch	Max
Weight	30	lb.	Max
RF Connectors Input/Output	Type-N female		-
Cooling	Built in internal forced air cooling system		-

PROTECTIONS

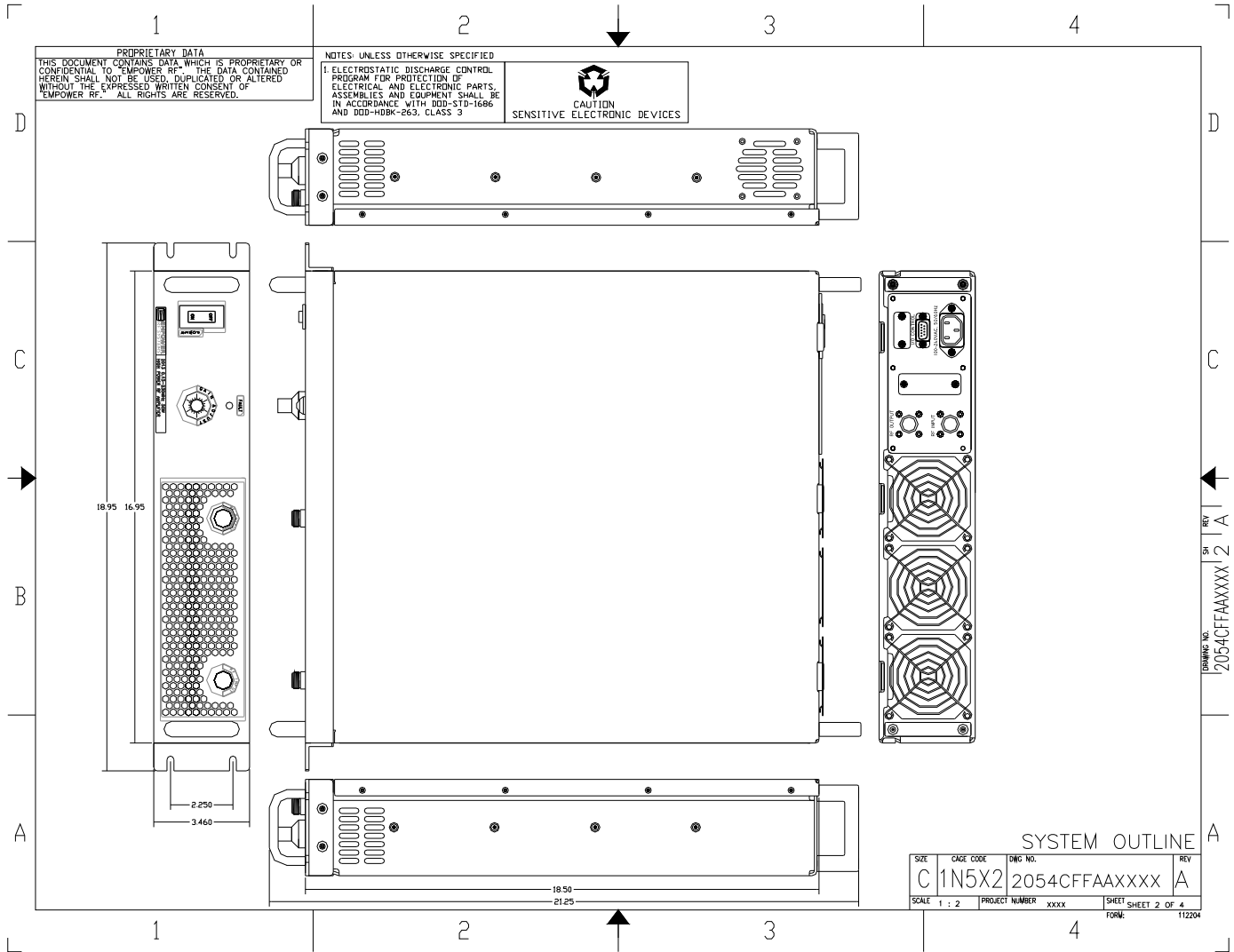
Input Overdrive	+10dBm		Max
Load VSWR @ rated Pout	Infinite @ any amplitude & phase		Nom
Thermal Overload	85°C shutdown		Max

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AVAILABLE OPTIONS (for complete options list refer to www.empowerrf.com)

Option	Number	Description	Price
FGA	061	Front panel 10 turns manual gain adjustment.	Standard
LCD	062	Touchscreen Digital Display, including Fwd/Rev Power indication (dB or Watt scale), Gain Adjustment, ALC Fast/Slow, On/Off, Standby mode, Fault indication, Rear panel HPIB IEEE-488.2 and Full Duplex RS232 remote interface. Note: Output Power is lowered by 0.5 - 0.75dB with this option.	Call
FCN	051	Front Panel Type-N female	N/C
RCN	052	Rear Panel Type-N female	N/C
RSP	054	Rear Panel SMA-F Sample Port -23dB coupling factor	Call
RMS	026	Rack Mount Chassis Slides	Call

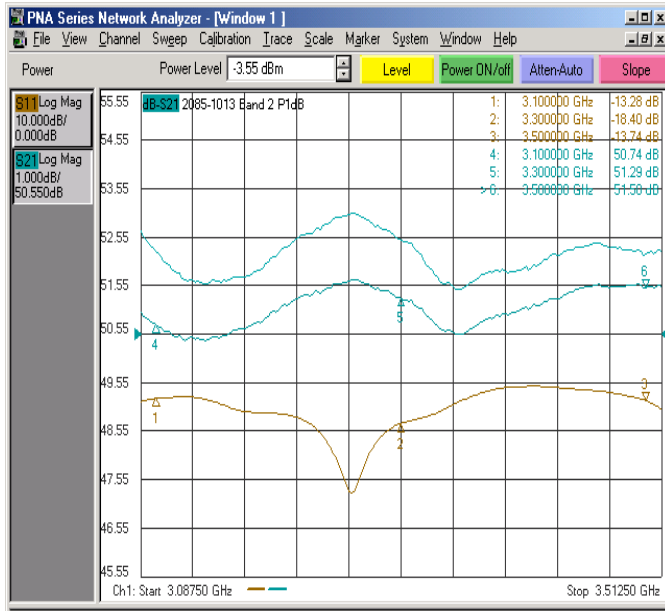
Refer to option table for the available packages: 03, 04, 05, 06

SYSTEM OUTLINE SHOWN WITH OPTION PACKAGE 03


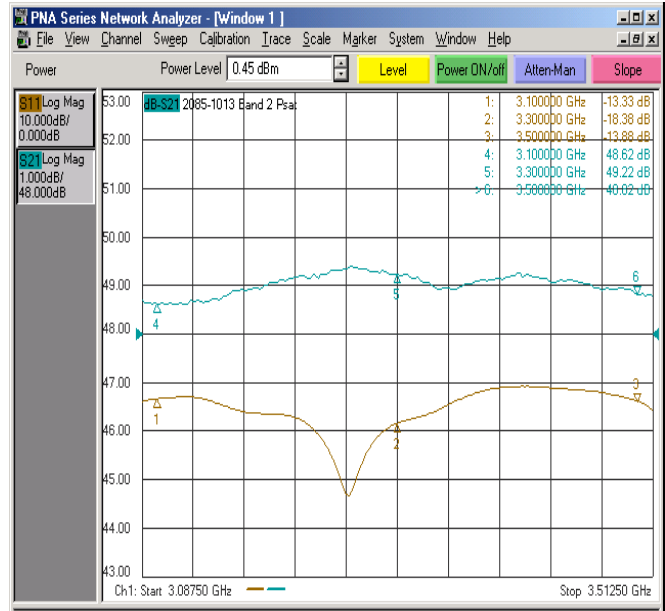
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TYPICAL PERFORMANCE PLOTS

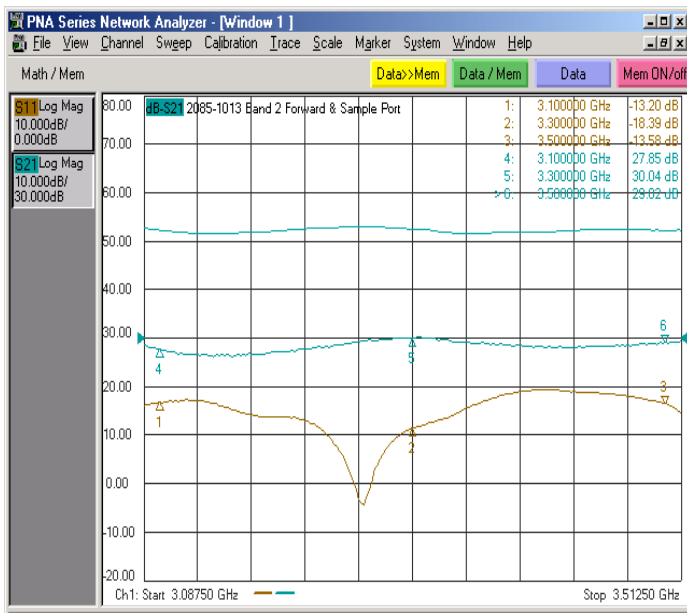
Top Curve: Small Signal @ $P_{IN} = -20\text{dBm}$
 Middle Curve: $P_{1\text{dB}}$ @ $P_{IN} = -4.0\text{dBm}$
 Reference = 50.55dB, 1dB/Div
 Bottom Curve: Input VSWR



Top Curve: Power Gain (P_{SAT}) @ $P_{IN} = 0\text{dBm}$
 Reference = 48dB, 1dB/Div
 Bottom Curve: Input VSWR



Top Curve: Forward Output (Optional)
 Middle Curve: Forward Sample Port
 Reference: 30dB, 10dB/Div
 Bottom Curve: Input VSWR



Top Curve: ALC @ 25W @ $P_{IN} = 0\text{dBm}$ (Optional)
 Reference: 44dB, 1dB/Div
 Bottom Curve: Input VSWR

