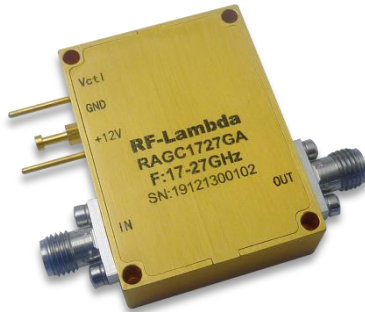




Wide Band Variable Gain Low Noise Amplifier 17GHz~27GHz



Features

- Gain: 38dB Typical
- Noise Figure: 2.2dB Typical
- Output P1dB : +23dBm Typical
- PSAT Output Power: 25dBm
- Supply Voltage: +12V

Typical Applications

- Wireless Infrastructure
- Military & Aerospace
- Test and Measurement

Electrical Specifications, TA = +25 °C, Vcc = +12V, Vctl= -4.5V to -1V

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	17		21	21		27	GHz
Gain	35	38	42	35	38	42	dB
Gain Adjustable Range		15			15		dB
Gain Flatness		±2.0			±2.0		dB
Gain Variation Over Temperature (-45°C ~ +85°C)		±1.0			±1.0		dB
Noise Figure		2.2	3.5		2.5	3.2	dB
Input VSWR		1.6			1.6		:1
Output VSWR		1.6			1.6		:1
Output 1dB Compression Point (P1dB)	20	23		19	23		dBm
Saturated Output Power (Psat)		25			25		dBm
Output Third Order Intercept (OIP3)		28			30		dBm
Isolation S12		-60			-60		dB
Supply Current (Vcc=+12V, Vctl= -4.5 to -1V)		200	270		200	270	mA
Weight	1.4 Max.						Ounces
Impedance	50						Ohms
Input / Output Connectors	SMA - Female						
Finish	Gold Plated						
Material	Aluminum						
Package Sealing	Epoxy Sealed (Standard)						
	Hermetically Sealed (Optional)						

Wide Band Variable Gain Low Noise Amplifier 17GHz~27GHz



Absolute Maximum Ratings

Operating Voltage	+15V
Vg Control Voltage	-5 to 0V
RF Input Power (@25°C, 50Ω)	-15dBm

Biasing Up Procedure

Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +12V biasing
Step 4	Connect Vctl Control
Step 5	Turn on +12V biasing
Step 6	Turn on Vctl Control
Power OFF Procedure	
Step 1	Turn off Vctl Control
Step 2	Turn off +12V biasing
Step 3	Remove RF connection
Step 4	Remove Ground.

Environmental Specifications and Test Standards

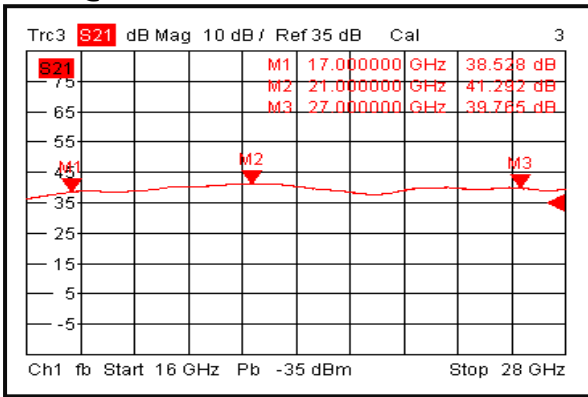
Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-45°C~+85°C
Storage Temperature		-50°C~+125°C
Thermal Shock		1 Hour@ -45°C → 1 Hour @ +85°C (5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & Temperature Burn In		Temperature +85°C for 72 Hours
Shock		1. Weight >20g, 50g half sine wave for 11ms, Speed variation 3.44m/s 2. Weight <=20g, 100g Half sine wave for 6ms, Speed variation 3.75m/s 3. Total 18 times (6 directions, 3 repetitions per direction).
Altitude		Standard: 30,000 Ft (Epoxy Sealed Controlled Environment) Optional: Hermetically Sealed (60,000 ft. 1.0 PSI min)
Hermetically Sealed (Optional)	MIL-STD-883	MIL-STD-883 (For Hermetically Sealed Units)

Wide Band Variable Gain Low Noise Amplifier 17GHz~27GHz

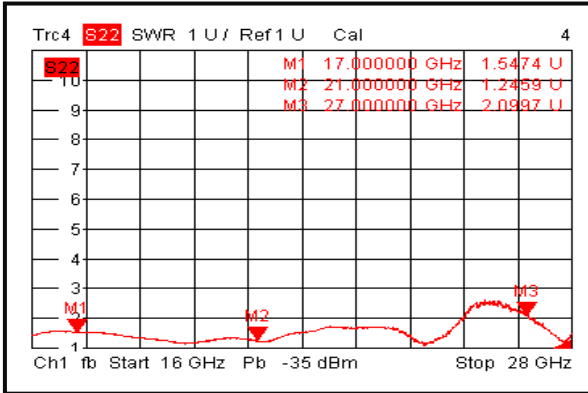


Typical Performance Plots

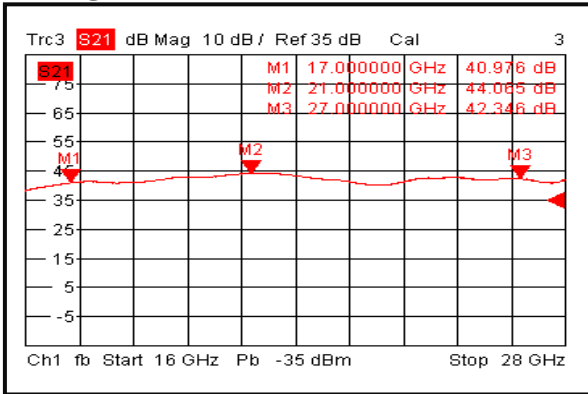
Gain @+25°C



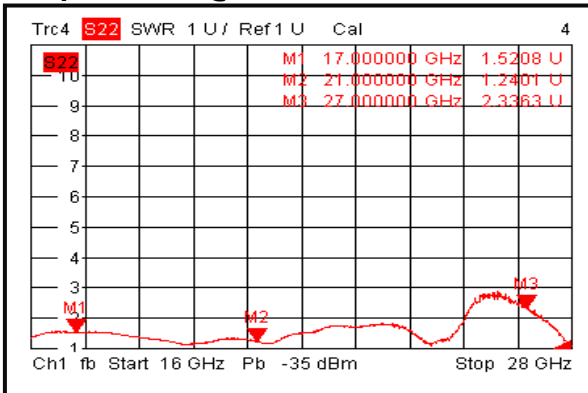
Output VSWR @+25°C



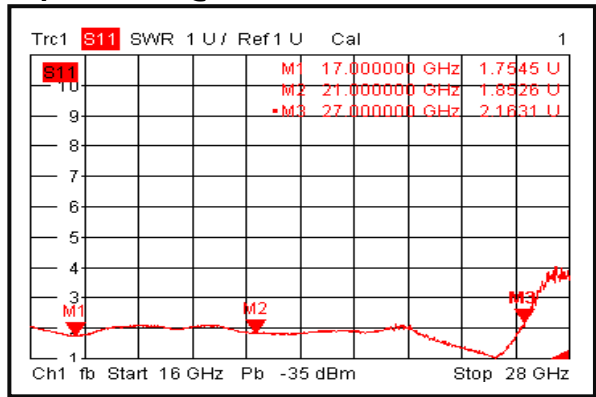
Gain @-45°C



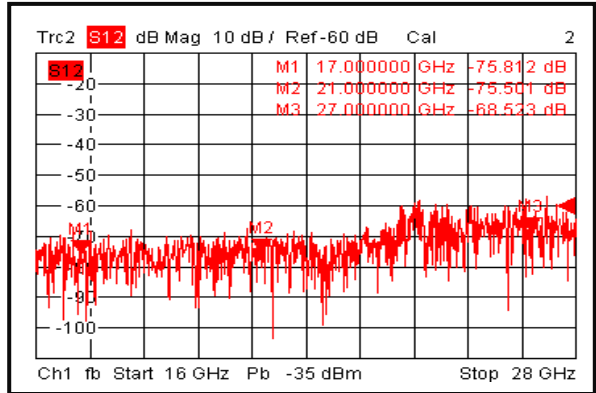
Output VSWR @-45°C



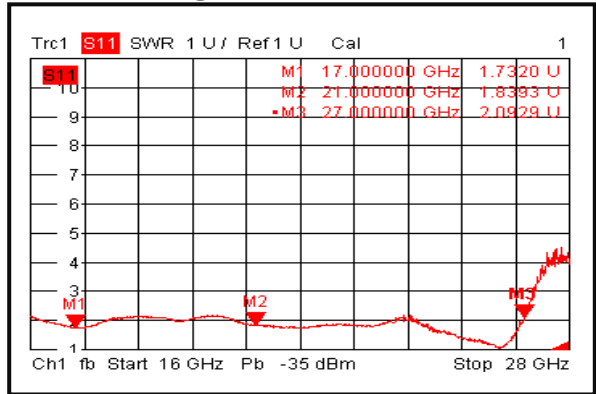
Input VSWR @+25°C



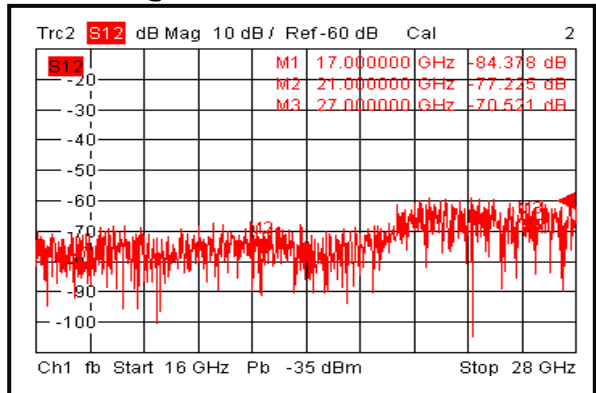
Isolation @+25°C



Input VSWR @-45°C



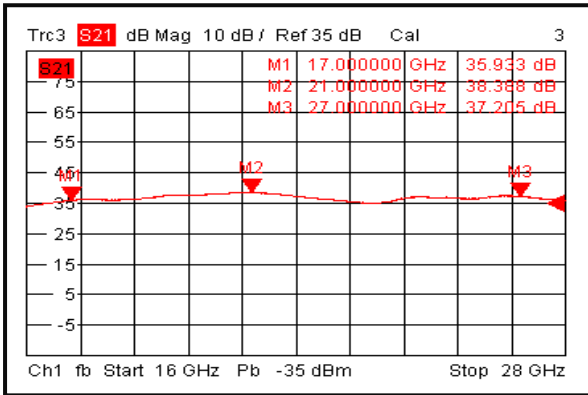
Isolation @-45°C



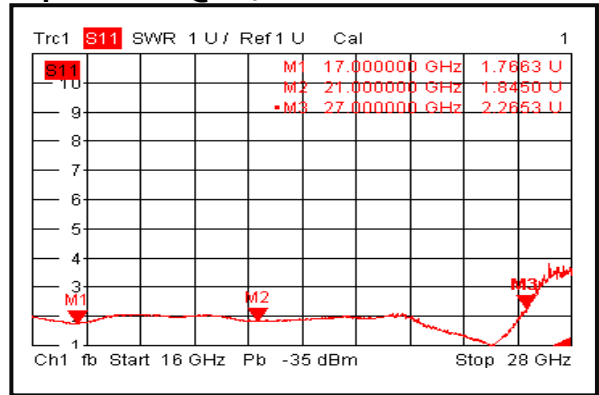
Wide Band Variable Gain Low Noise Amplifier 17GHz~27GHz



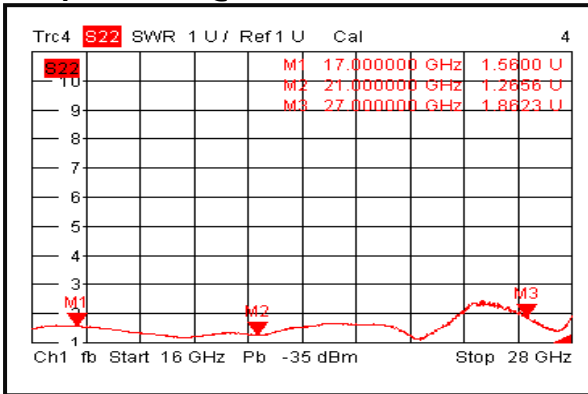
Gain @+85°C



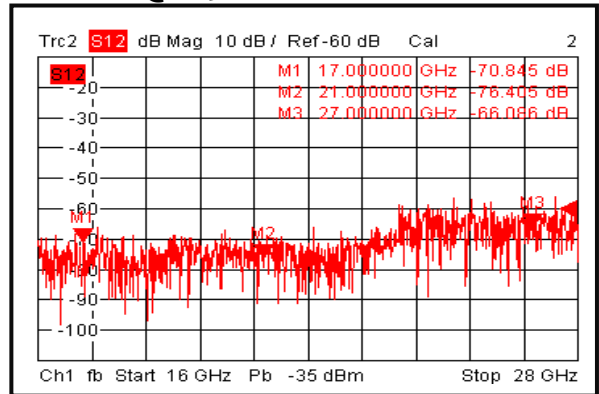
Input VSWR @+85°C



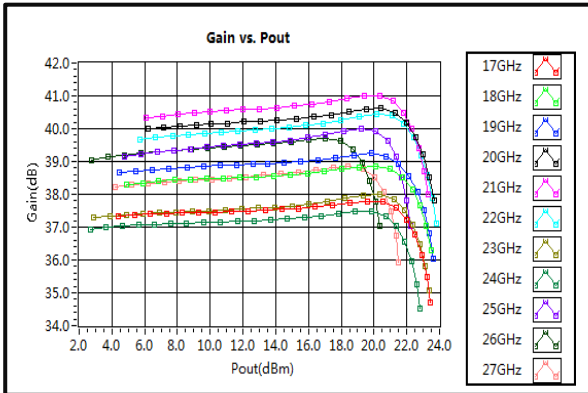
Output VSWR @+85°C



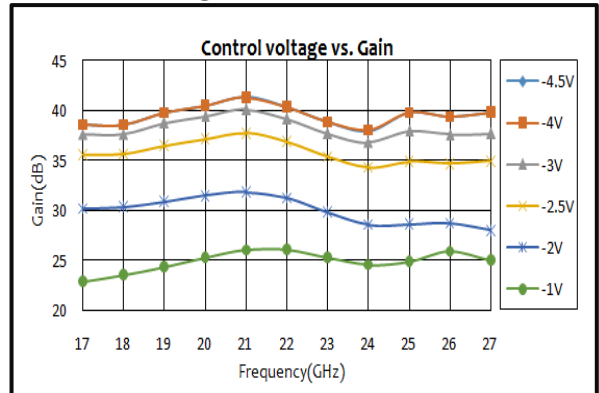
Isolation @+85°C



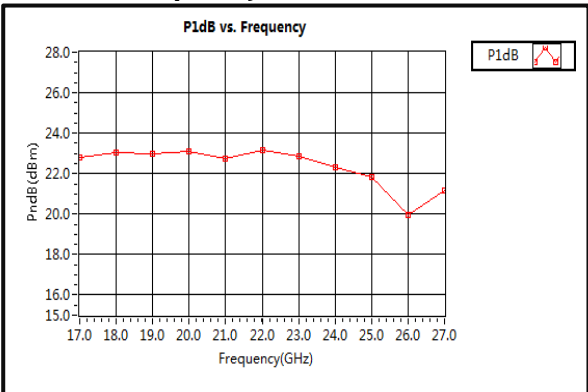
Gain vs. Output Power



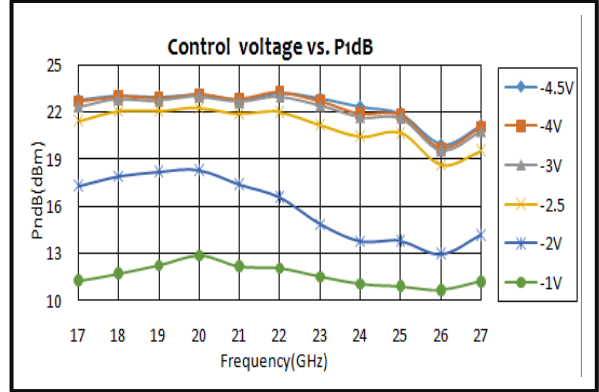
Control Voltage vs. Gain



P1dB vs. Frequency



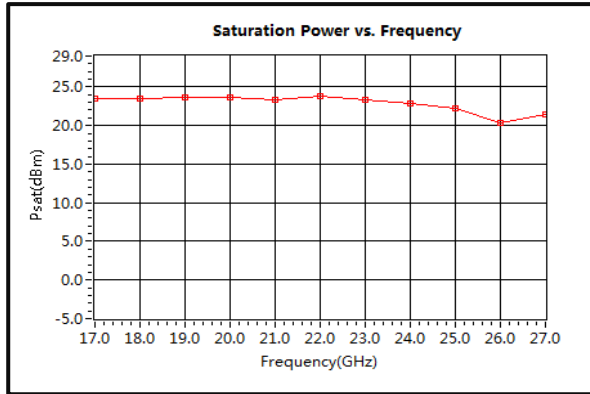
Control Voltage vs. P1dB



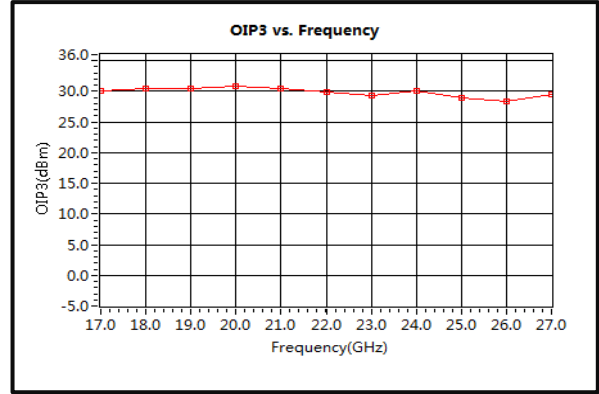
Wide Band Variable Gain Low Noise Amplifier 17GHz~27GHz



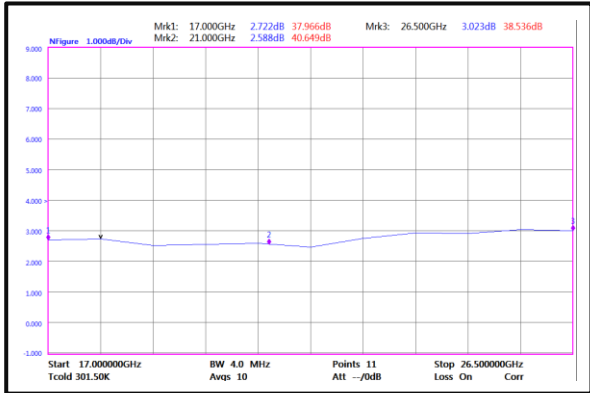
Saturation Power vs. Frequency



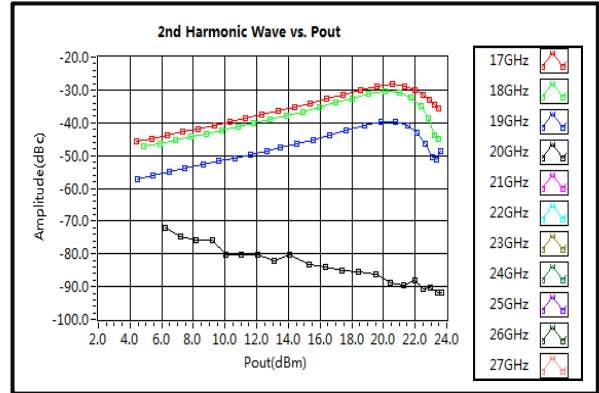
Output Third Order Intercept (OIP3)



Noise Figure



2nd Harmonic Wave Output Power

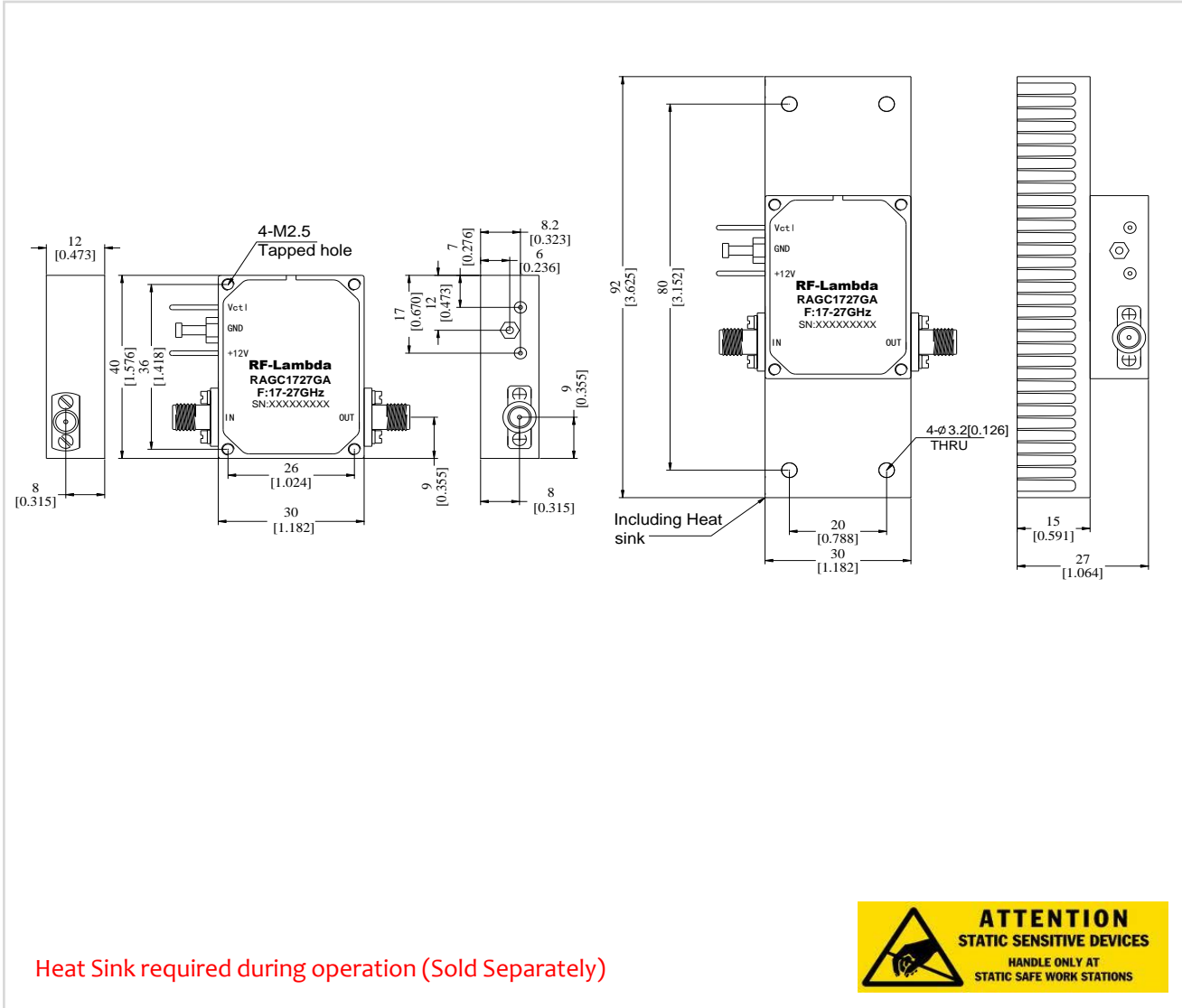


Wide Band Variable Gain Low Noise Amplifier 17GHz~27GHz



Outline Drawing:

All Dimensions in mm [inches]



Wide Band Variable Gain Low Noise Amplifier 17GHz~27GHz

Ordering Information

Part No.	Description
RAGC1727GA	17-27GHz Wide Band Variable Gain Low Noise Amplifier

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