

HPA Series

130 - 180MHz 20W RF Power Amplifier

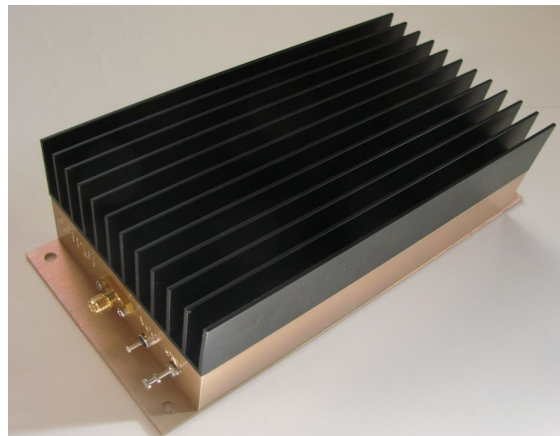
Features

- Frequency Range: 130-180MHz
- Gain: 33dB (typ.)
- P_{3dB} : +43.0dBm
- P_{sat} : +44.5dBm
- IP3: +47.0dBm
- Reverse Voltage Protection
- DC Power: +12V
- RF Connector: SMA-Female

Description

HPA-155 is a 20 Watt (+43dBm) output RF Power Amplifier operating from single +12V DC power supply with frequency range in 130MHz to 180MHz.

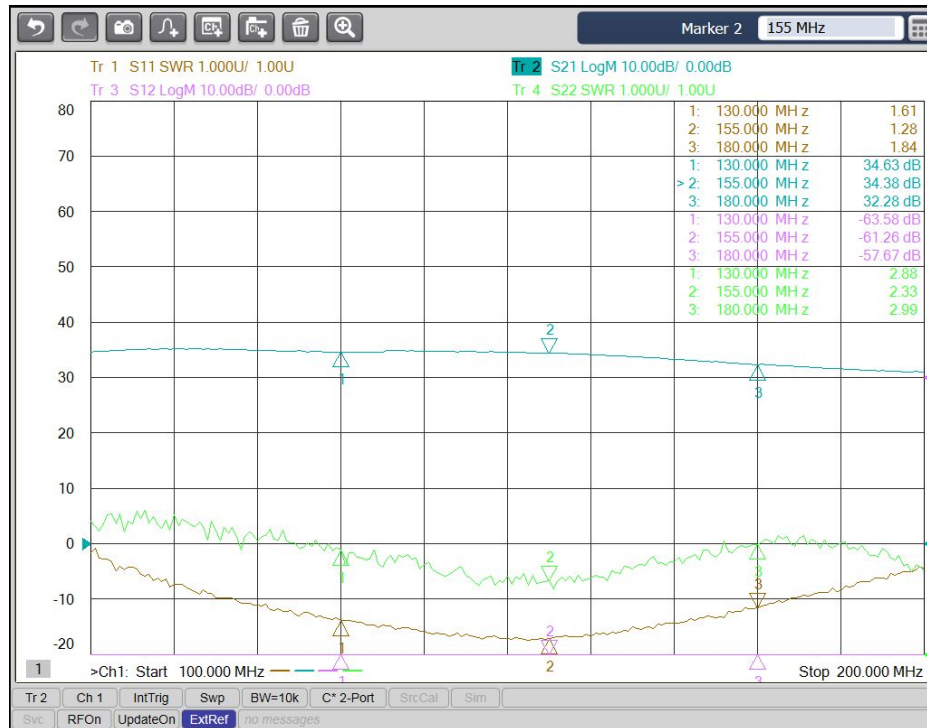
Photo



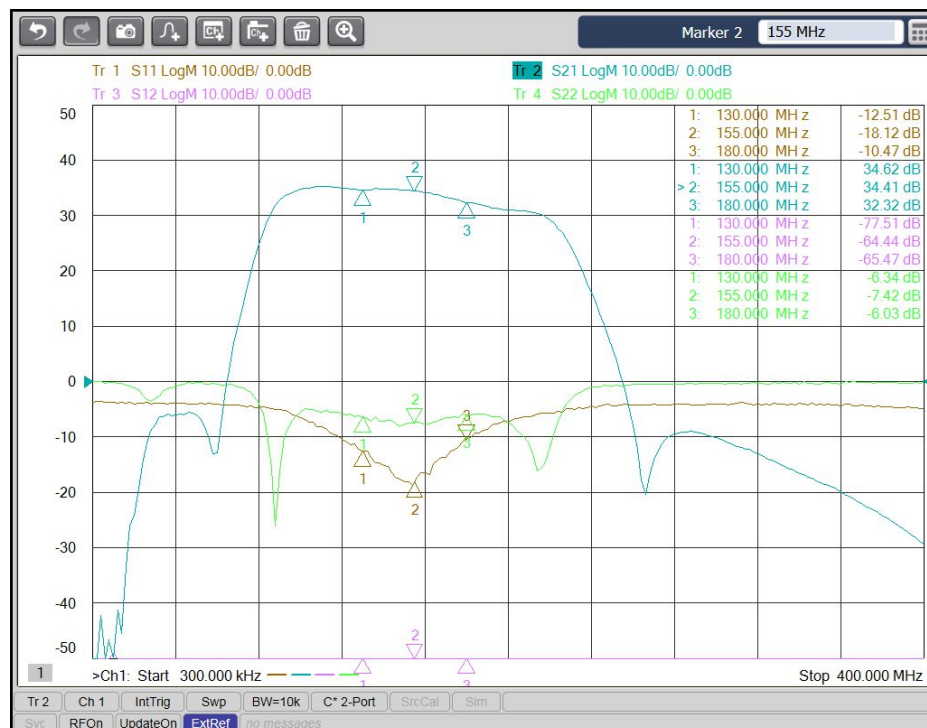
Electrical Specifications @ +25 °C, $Z_{in} = Z_{out} = 50 \Omega$, DC Supply = +12V

Parameter	Unit	Minimum	Typical	Maximum
Frequency Range	MHz	130		180
Small Signal Gain (S_{21}) $f = 155\text{MHz}$	dB	33.0	34.0	
Gain Flatness			± 1.5	± 2.0
Output Power P_{3dB} $f = 155\text{MHz}$	dBm	+42.0	+43.0	
Output Power P_{sat} $f = 155\text{MHz}$	dBm	+44.0	+44.5	
Output IP3 $f = 155\text{MHz}$	dBm	+46.0	+47.0	
Reverse Isolation (S_{12}) $f = 155\text{MHz}$	dB	-50	-60	
Noise Figure $f = 155\text{MHz}$	dB		5.5	7.0
VSWR - Input (S_{11}) $f = 155\text{MHz}$			1.3:1	1.8:1
VSWR - Output (S_{22}) $f = 155\text{MHz}$			2.5:1	3.0:1
VSWR - Load Tolerance (non-destructive)				18:1
Efficiency $f = 155\text{MHz}$ & $P_{out} = +43\text{dBm}$	%	38	42	
DC Power Supply - Voltage	V		12	15
DC Power Supply - Current: (no RF)	A		2.0	2.4
@ $P_{out} = +43\text{dBm}$	A		4.0	5.0
Size	Inch	7.00 (L) x 3.25 (W) x 2.00 (H)		
Weight	Oz	24		

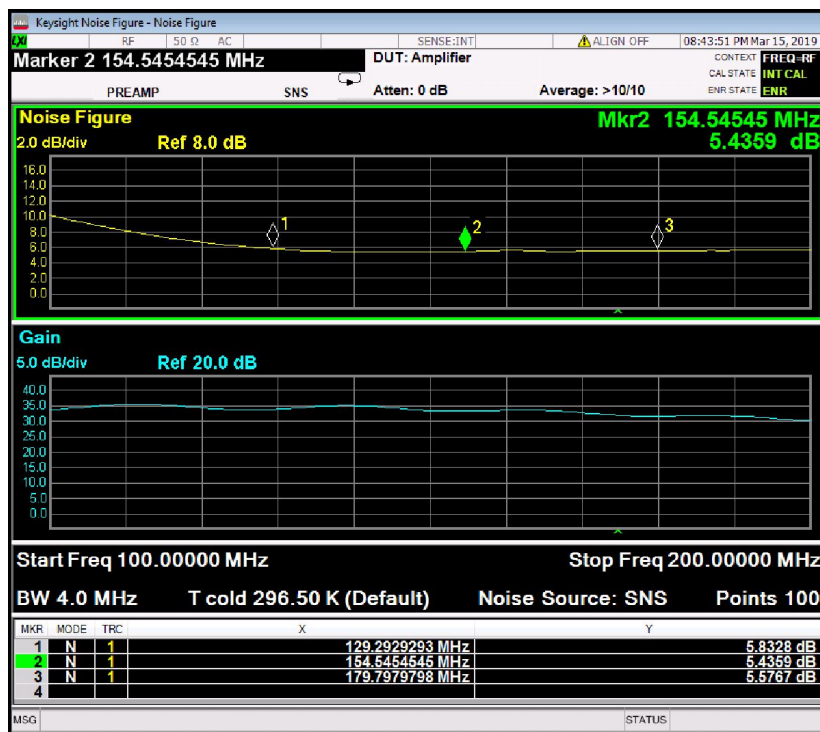
Gain S21, Isolation S12, Return Loss S11, S22 vs Frequency



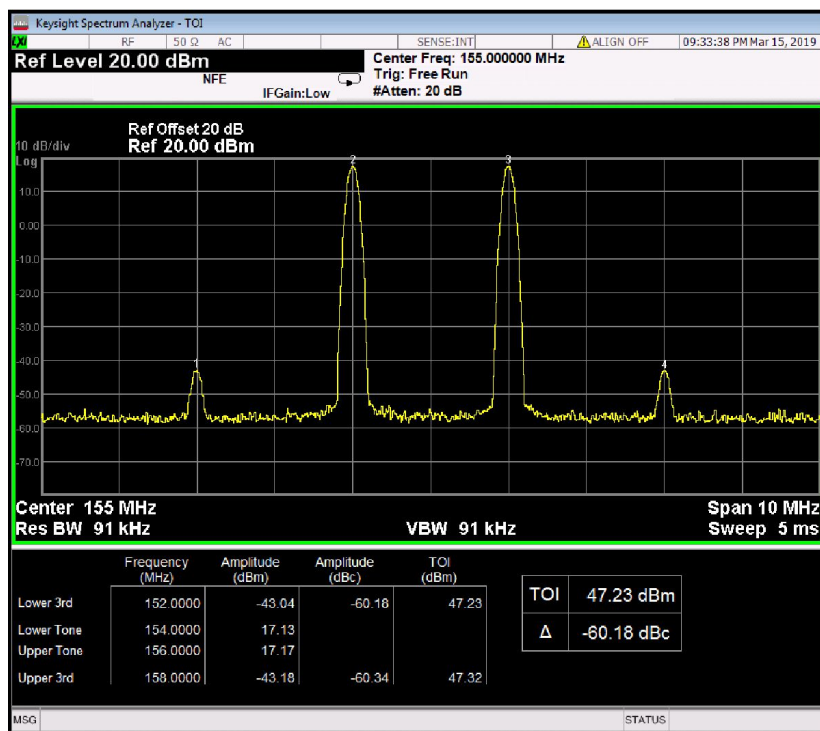
Wide Band Frequency Responses S-Parameter



Noise Figure vs Frequency



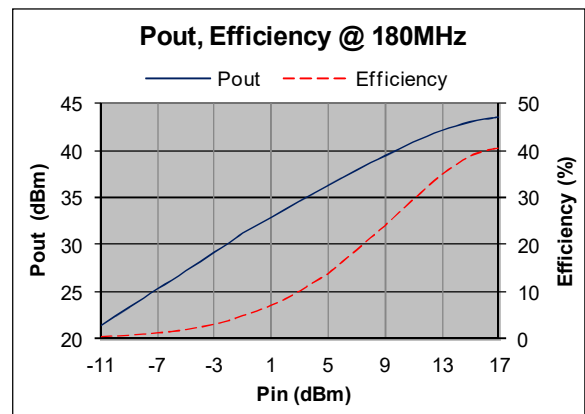
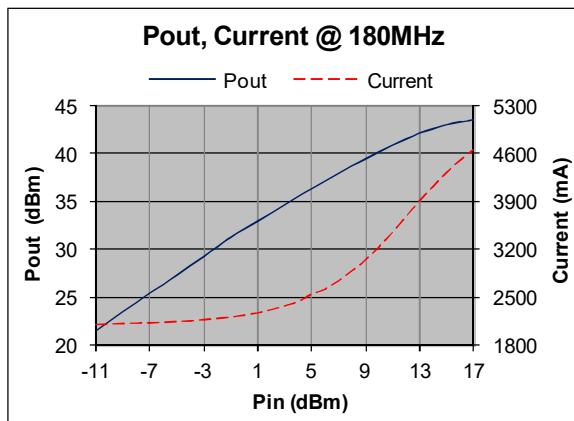
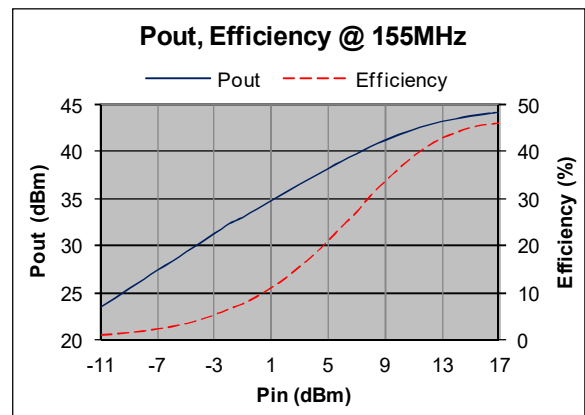
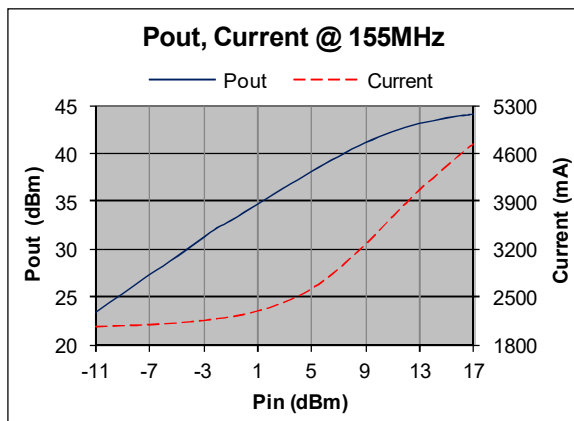
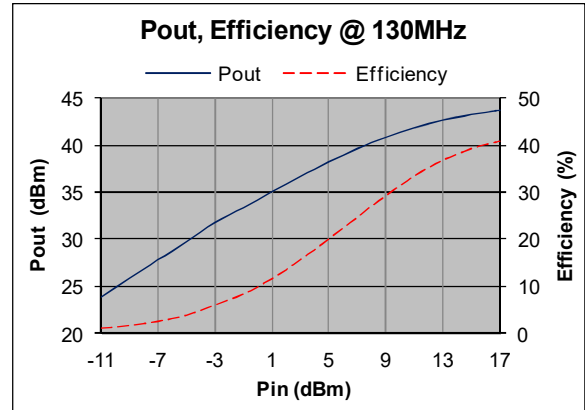
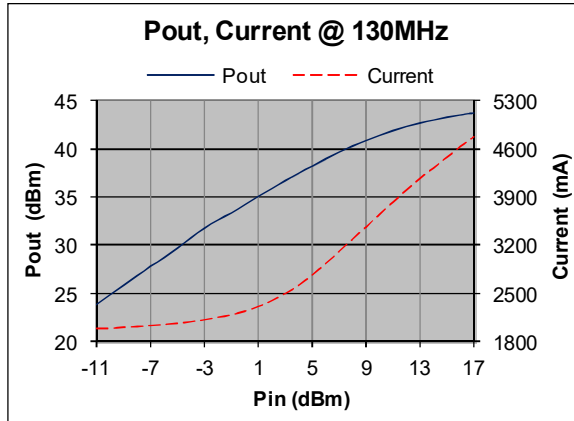
Output IP3



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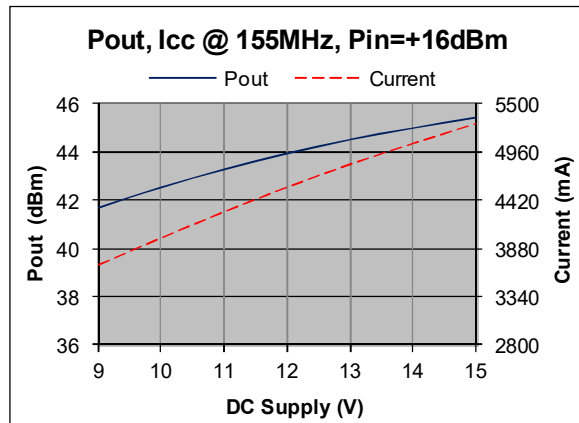
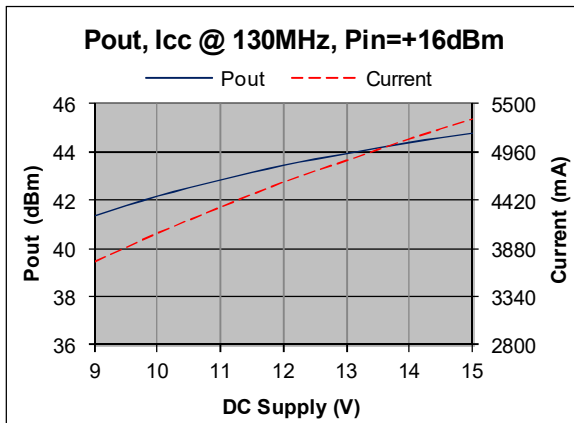
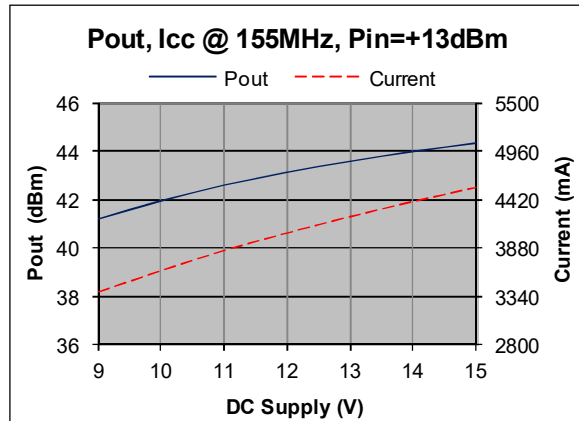
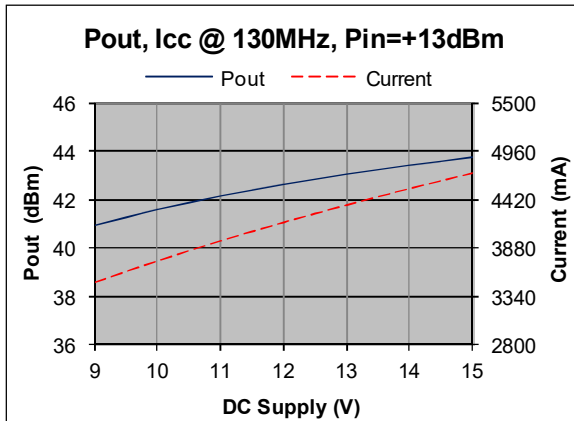
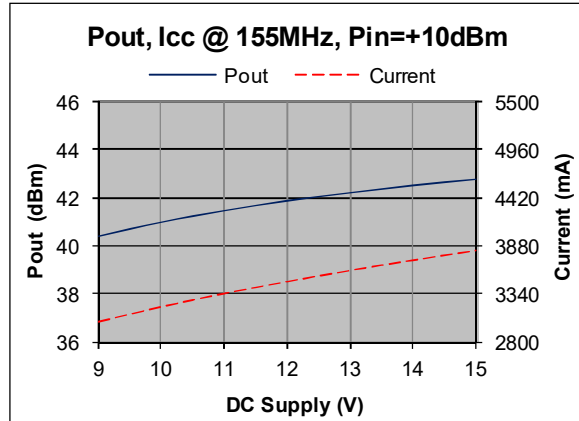
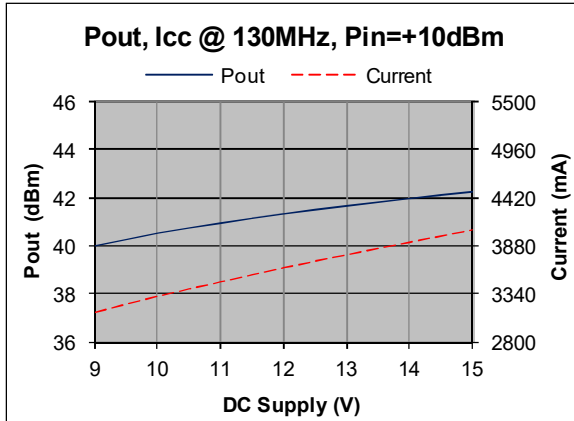
Typical Performance @ +25 °C



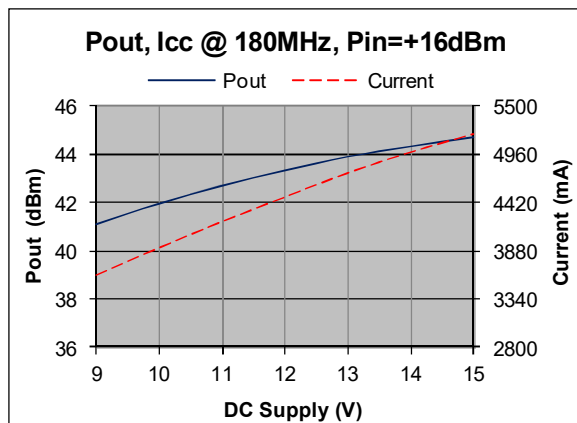
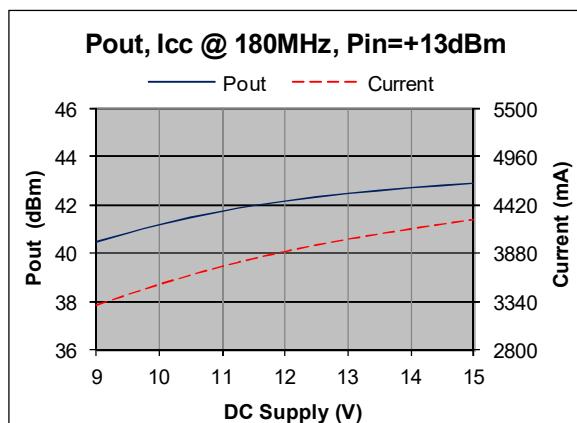
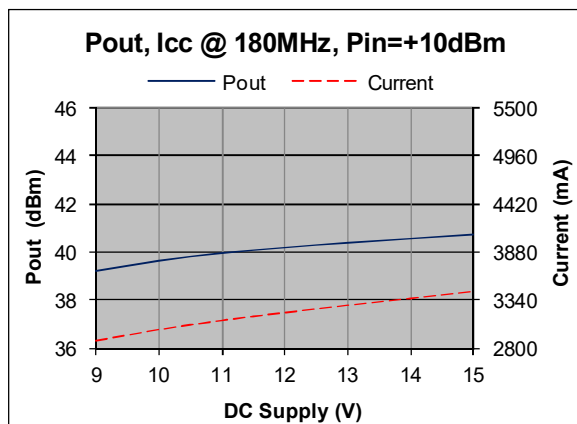
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Absolute Maximum Ratings

Parameter	Absolute Maximum
Supply Voltage	+17V
RF Input Power	+20dBm
Operating Temperature	-30 °C to +65 °C
Storage Temperature	-55 °C to +100 °C

ESD Sensitive Material



**WARNING: MUST KEEP CASE TEMPERATURE NOT EXCEED 65 °C
USING FAN TO COOL DOWN HEATSINK IS REQUIRED**

Outline

