



# Power Amplifiers

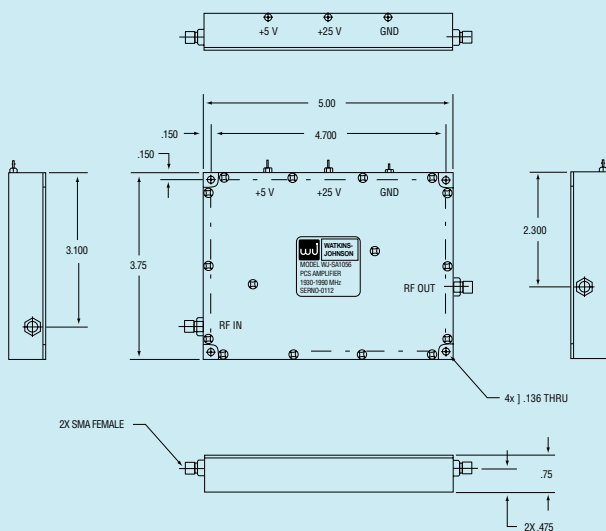


## SA1056 CDMA 1.5-Watt 1.93 GHz to 1.99 GHz Linear Power Amplifier Module

- 1.5 Watts CDMA IS-95
- +38 dBm P1dB
- 40 dB Gain
- -30°C to +85°C

Watkins-Johnson's SA1056 Power Amplifier provides exceptional linearity for CDMA digital modulation applications. Utilizing WJ's GaAs amplifiers driving bipolar transistors in the class A output stage, the SA1056 achieves a very high output third-order intercept point combined with superior efficiency.

OUTLINE DRAWING



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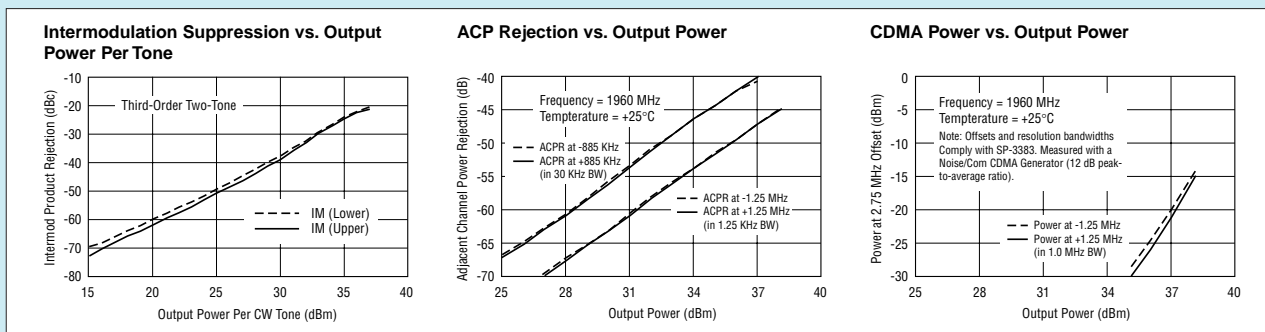


# Power Amplifiers

## SA1056

### CDMA 1.5-Watt 1.93 GHz to 1.99 GHz Linear Power Amplifier Module

Specifications		
Parameters	Typical Level	Specified Limits
Frequency		1.930 -1.990 GHz
P <sub>out</sub> at 1 dB Gain Compression (Min.)	+38 dBm	+37 dBm
Small Signal Gain at +25°C		40 ± 0.75 dB
Gain Variation over Temperature (-30 to +85°C)		±0.75 dB
CDMA Adjacent Channel Power Rejection (ACPR)		
Measured ±885 kHz away from the center frequency in a 30 kHz bandwidth	-48 dB	-45 dB
Measured ±1.25 MHz away from the center frequency in a 12.5 kHz bandwidth	-54 dB	-52 dB
Spurious power level at f <sub>0</sub> ± 2.75 MHz in a 1.0 MHz bandwidth, P <sub>out</sub> = +32 dBm (Max.)	-35 dBm	-30 dBm
3rd Order Two-Tone Output Intercept Point, Measured with +25 dBm per Tone (Min.)	+47 dBm	+45 dBm
Harmonic Output with +32 dBm CDMA Output at the Fundamental (Min.)		
2nd harmonic	-45 dBm	Not Guaranteed
3rd harmonic	-35 dBm	Not Guaranteed
Noise Figure (Max.)	5.0 dB	6.0 dB
Input and Output Impedance		50 Ohm
Return Loss, 1.930 to 1.990 GHz		
Input and Output	-20 dB	-15 dB
Load Mismatch Sustainable without Damage (Pin ≤ -5 dBm V <sub>supply</sub> ≤ +25.0 Vdc)		3.0:1
Stability, no spurious output above -50 dBm		Unconditionally stable for all loads
Supply Voltages		+5 and +25 Vdc
Maximum Supply without Damage		
+25 Volt Supply		+26.5 Vdc
+5 Volt Supply		+6 Vdc
Maximum DC Current		
+25 Vdc Supply	1850 mA	2000 mA
+5 Vdc Supply	505 mA	560 mA
DC Power Dissipation (Max.)		
+25 Vdc Supply		50 watts
+5 Vdc Supply		2.8 watts
Baseplate Temperature Range <sup>2</sup>		-30 to +85°C
Size (Refer to interface control drawing WJ-299010SK)	0.75" (H), 3.75" (W), 5.00" (L)	
RF Connectors	SMA Female	
Weight	13.8 oz.	14 oz.



Note: 1. CDMA adjacent power and spurious measurements are made using a Rohde & Schwarz SMIQ03 source in an IS-95 forward link mode.  
 2. This unit is to be mounted on a ground plane and thermal heat sink, with a maximum heat sink temperature of +85°C.

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