## Coaxial Wideband Microwave Amplifier ZX60-183-S+

50Ω 6 to 18 GHz

## **The Big Deal**

- Wideband, 6-18 GHz
- High Gain, Very Flat Response, 24 dB ±1.0 dB typ.
- Excellent Isolation, 62 dB typ.
- Unconditionally Stable performance



CASE STYLE: GC957

### **Product Overview**

The ZX60-183-S+ two-stage amplifier provides high gain in a very small package, only 0.75" x 0.74" x 0.46" high. Internal compensating circuitry provides a consistent, very flat response over the full bandwidth. Designed for  $50 \Omega$  SMA coax systems, the gold-plated package uses convenient 5V DC power, and has a nickel-plated brass cover and unibody construction for rugged use.

### **Key Features**

Feature	Advantages				
Wideband, 6-18 GHz	Wide frequency range supports a wide array of applications, from microwave radio and radar to military communications, satellite communications, and countermeasures				
Excellent Gain Flatness	$\pm$ 1.0 dB gain flatness across entire bandwidth minimizes the need for external equalizer networks, making it a great fit for instrumentation, test lab, EW, or any other amplitude-sensitive system				
High Gain and Excellent Isolation	24 dB gain with reverse isolation of 62 dB (38 dB directivity) prevents leakage, making the ZX60-183-S+ an excellent choice for minimizing interactions between different microwave components. It is an ideal LO driver amplifier and provides designers system flexibility and robustness when integrating cascaded RF components				
Unconditionally Stable	No risk of damage to other components from impedance mismatch or internal oscillation				

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# Coaxial Wideband Microwave Amplifier

#### 6 to 18 GHz 50Ω

#### Features

- wideband, 6 to 18 GHz • gain, 24 dB typ and flatness, ±1.0 dB typ.
- output power at 1 dB compression, 18.0 dBm typ.
- excellent isolation, 62 dB typ.
- unconditionally stable
- protected by US patent 6,790,049

#### Applications

- military and radar
- DBS
- wideband isolation amplifier
- microwave point to point radio
- · satellite systems

#### Electrical Specifications at 25°C



ZX60-183-S+

CASE STYLE: GC957

Model Connectors SMA ZX60-183-S+

+RoHS Compliant The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Parameter	Condition (GHz)	Min.	Тур.	Max.	Units
Frequency Range		6.0		18.0	GHz
	6.0		24.2		
	8.0	18.5	24.3	_	
	10.0	18.5	23.5	_	
Gain	12.0		23.5		dB
	14.0		23.4		
	16.0		22.7		
	18.0	18.5	24.0	_	
Gain Flatness	6.0-18.0		±1.0		dB
	6.0		16.3		
	8.0	10.0	16.5	_	
	10.0		12.2		
	12.0	10.0	15.7	_	
nput Return Loss	14.0	10.0	11.0		dB
	16.0		11.8		
	18.0		11.0		
	10.0		15.6		
	6.0		22.2		
	8.0	10.0	17.2	_	
	10.0		13.8		
Dutput Return Loss	12.0	10.0	15.9	_	dB
	14.0	10.0	22.8	-	
	16.0		15.0		
	18.0	10.0	26.6		
	6.0		27.4		
	8.0		27.7		
	10.0		27.9		alDura
Dutput IP3	12.0 14.0		27.2 26.9		dBm
	14.0		20.9		
	18.0		26.4		
	6.0		18.0		
	8.0		18.3		
	10.0	16.0	18.5	_	
Dutput Power @ 1 dB compression	12.0		18.1		dBm
	14.0		17.6		
	16.0		18.0		
	18.0		18.0		
	6.0		8.2		
	8.0 10.0		6.9		
Voise Figure	10.0		6.3 6.9		dB
NOISE I IGUIE	12.0		6.8		ub
	14.0		6.8		
	18.0		6.5		
Directivity (Isolation-Gain)			38		dB
DC Voltage			5.0		V
DC Current			260	290	mA

Notes

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# ZX60-183-S+

#### **Maximum Ratings**

Parameter	Ratings				
Operating Temperature	-40°C to 85°C Base Plate Temp.				
Storage Temperature	-55°C to 100°C				
DC Voltage	5.5V				
Input RF Power (no damage)	+20 dBm				
Power Dissipation	1.6 W				
	e				

Permanent damage may occur if any of these limits are exceeded.

#### **Outline Drawing**





NOTE: When soldering the DC connections, caution must be used to avoid overheating the DC terminal. See Application Note. <u>AN-40-010.</u>

#### Outline Dimensions (inch )

А	в	С	D	Е	F	G	н	J	к	L	М	N	Р	Q	R	wt
.74	.75	.46	1.18	.04	.17	.45	.59	.33	.21	.22	.18	1.00	.37	.18	.106	grams
18.80	19.05	11.68	29.97	1.02	4.32	11.43	14.99	8.38	5.33	5.59	4.57	25.40	9.40	4.57	2.69	23.0

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# Typical Performance Data/Curves

ZX	60-1	83-5	5+

FREQUENCY (MHz)	GAIN (dB)	DIRECTIVITY	VSWR IN (:1)	VSWR OUT (:1)	POWER OUT @1 dB COMPR. (dBm)	IP3 (dBm)	NF (dB)
6000.00	24.24	43.74	1.13	1.23	17.80	27.78	7.40
7000.00	24.13	41.84	1.06	1.31	18.44	27.98	7.03
8000.00	24.19	38.28	1.26	1.47	18.49	27.72	6.90
9000.00	23.91	36.50	1.57	1.62	18.73	27.47	7.08
10000.00	23.19	39.89	1.67	1.64	18.63	27.76	6.37
11000.00	23.09	45.13	1.64	1.56	18.43	27.26	7.21
12000.00	23.23	40.13	1.41	1.36	18.13	27.49	7.01
13000.00	23.36	40.96	1.21	1.15	17.90	27.48	6.89
14000.00	23.22	38.51	1.32	1.20	17.34	27.34	6.82
15000.00	22.74	38.10	1.57	1.48	17.28	27.40	6.90
16000.00	22.47	39.63	1.59	1.63	17.84	27.64	6.77
17000.00	23.02	44.13	1.39	1.51	17.47	27.12	7.56
18000.00	23.73	39.26	1.43	1.20	18.24	26.71	6.59



17 6000 8000 10000 12000 14000 16000 18000 FREQUENCY (MHz)





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