

# Ultra Low Noise Amplifier

## ZX60-1215LN+ ZX60-1215LN

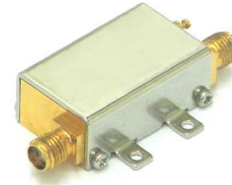
50Ω, 800 MHz to 1400 MHz

### Features

- Ultra low noise figure 0.4 typ.
- 11V-13V operation
- Good IP3, 27 dBm typ.
- Reverse voltage connection protected
- Small size
- Low cost
- Protected by US Patent 6,790,049

### Applications

- Low noise amplifier RF front end
- Low noise pre-amp
- Buffer amplifier
- LNA for GPS application
- General purpose small signal
- Lab
- Instrumentation
- Test Equipment



CASE STYLE: GA955

Connectors	Model	Price	Qty.
SMA	ZX60-1215LN-S+	\$149.95 ea.	(1-9)
SMA	ZX60-1215LN-S	\$149.95 ea.	(1-9)

**+ RoHS compliant in accordance with EU Directive (2002/95/EC)**

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

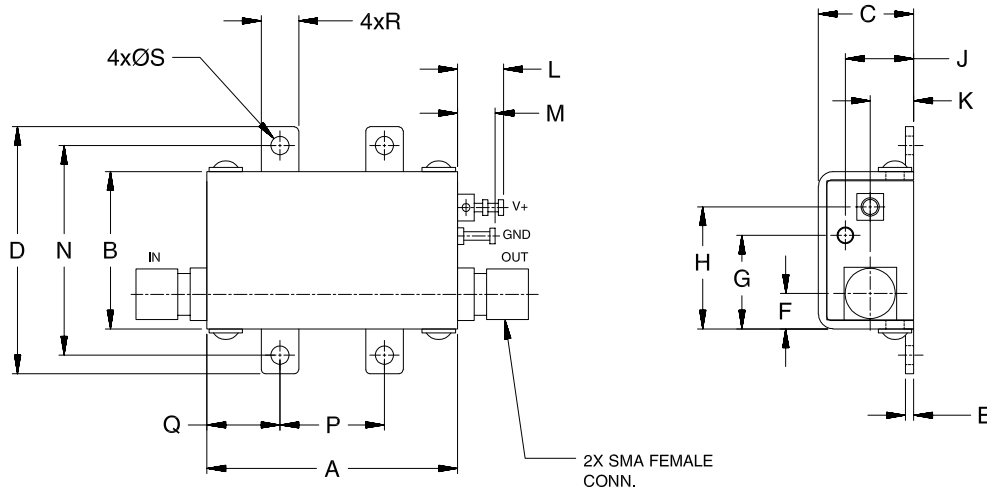
### Electrical Specifications at $T_{AMB} = 25^{\circ}\text{C}$

MODEL NO.	FREQ. (MHz) $f_L - f_U$	GAIN (dB)				MAXIMUM POWER (dBm)  Output (1 dB Comp.)	DYNAMIC RANGE			VSWR (:1) Typ.		ACTIVE DIRECTIVITY (dB) Isolation-Gain	DC VOLTAGE @ Pin V+ (V)	DC OPERATING CURRENT @ Pin V+ (mA)		
		Typ.	Min.	Flatness			Typ.	NF (dB)	IP3 (dBm)	In	Out			Typ.	Typ.	Max.
				Typ.	Max.											
ZX60-1215LN (+)	800-1000	16.5	14.0	$\pm 0.7$	$\pm 1.3$	12.5	0.4	0.7	26.0	1.65	1.40	13	12	42	50	
	1000-1400	14.5	11.0	$\pm 1.2$	$\pm 2.5$	12.5	0.4	0.7	27.5	1.70	1.40	13	12	42	50	

### Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
DC Voltage	15V
Input Power(no Damage)	13dBm

### Outline Drawing



### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	wt.
1.20	.75	.46	1.18	.04	.17	.45	.59	.33	.21	.22	.18	1.00	.50	.35	.18	.09	grams
30.5	19.1	11.6	30.0	1.0	4.3	11.4	14.9	8.3	5.3	5.6	4.6	25.4	12.7	8.9	4.6	2.3	35.0



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Mini-Circuits ISO 9001 & ISO 14001 Certified

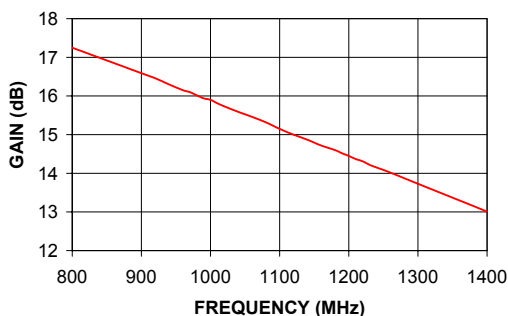
REV. A  
M98898  
EDB040405  
ZX60-1215LN  
BLUEC  
061121  
page 1 of 2

# Typical Performance Data & Curves at 25°C

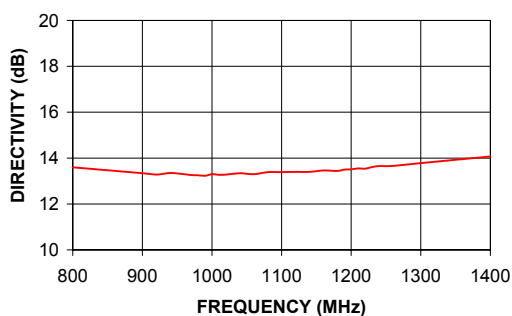
## ZX60-1215LN+ ZX60-1215LN

FREQUENCY (MHz)	GAIN (dB)	DIRECTIVITY (dB)	VSWR IN (:1)	VSWR OUT (:1)	POWER OUT @1dB COMPRESSION (dBm)	IP3 (dBm)	NF (dB)
800	17.25	13.60	1.63	1.76	12.00	24.51	0.42
850	16.90	13.47	1.61	1.62	12.16	25.00	0.41
900	16.59	13.34	1.59	1.49	12.33	25.49	0.41
920	16.46	13.28	1.59	1.44	12.40	25.68	0.41
940	16.30	13.35	1.59	1.40	12.46	25.86	0.41
960	16.15	13.30	1.60	1.36	12.53	26.05	0.40
980	16.02	13.25	1.60	1.32	12.59	26.23	0.40
990	15.94	13.23	1.61	1.30	12.62	26.32	0.40
1000	15.90	13.30	1.61	1.29	12.64	26.41	0.40
1020	15.73	13.28	1.62	1.26	12.70	26.59	0.40
1050	15.53	13.34	1.63	1.23	12.77	26.83	0.40
1080	15.32	13.39	1.65	1.21	12.85	27.13	0.40
1100	15.15	13.39	1.67	1.21	12.89	27.32	0.40
1120	15.00	13.40	1.68	1.22	12.93	27.50	0.40
1150	14.79	13.43	1.69	1.25	12.96	27.73	0.40
1180	14.60	13.44	1.72	1.29	13.01	28.05	0.41
1200	14.45	13.51	1.74	1.31	13.03	28.23	0.41
1250	14.15	13.65	1.77	1.40	13.06	28.65	0.42
1300	13.73	13.78	1.81	1.51	13.05	29.11	0.43
1400	13.01	14.07	1.87	1.74	12.93	29.91	0.45

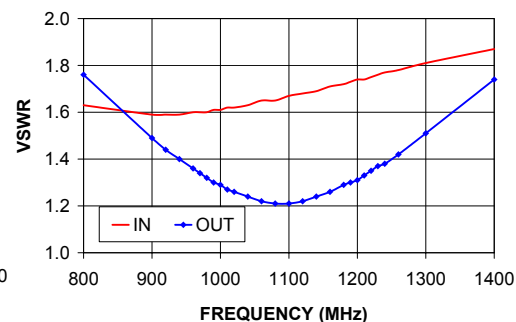
ZX60-1215LN  
GAIN



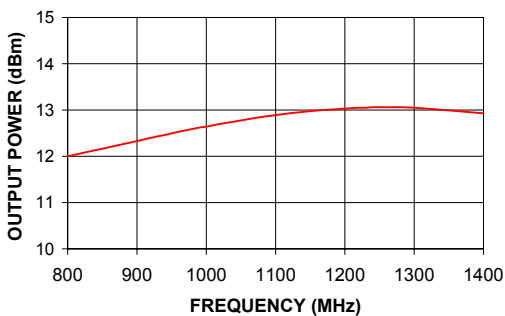
ZX60-1215LN  
DIRECTIVITY



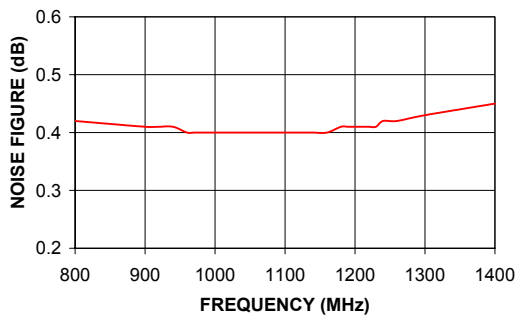
ZX60-1215LN  
VSWR



ZX60-1215LN  
OUTPUT POWER AT 1dB COMPRESSION



ZX60-1215LN  
NOISE FIGURE



ZX60-1215LN  
IP3

