

Coaxial

Low Noise Amplifier

ZQLSC-1100

50Ω

600 to 1100 MHz

Features

- High reliability balanced design
- Noise Figure, 0.6 dB typ.
- Built-in alarm monitoring
- TTL alarm output, green/red alarm status LED
- Voltage regulated/protected DC input



Case Style: GZ1067

Applications

- Low noise receiver
- Digital cellular base stations
- TDMA, CDMA, GSM

Connectors	Model
SMA	ZQLSC-1100

Electrical Specifications at 25°C

Parameter	Condition (MHz)	Min.	Typ.	Max.	Units
Frequency Range		600		1100	MHz
Noise Figure	600 - 824	—	0.6	1.1	dB
	824 - 849	—	0.55	0.9	
	880 - 915	—	0.55	0.9	
	915 - 1100	—	0.6	1.0	
Gain	600 - 824	17.5	20	—	dB
	824 - 849	17.5	19	—	
	880 - 915	17	18.5	—	
	915 - 1100	15	17.5	—	
Gain Flatness	600 - 824	—	±.75	±1.0	dB
	824 - 849	—	±.15	±0.3	
	880 - 915	—	±0.2	±0.4	
	915 - 1100	—	±0.9	±1.2	
Output Power at 1dB compression	600 - 824	16	18.5	—	dBm
	824 - 849	16	19	—	
	880 - 915	16	19	—	
	915 - 1000	16	19	—	
Output third order intercept point	600 - 824	—	32.5	—	dBm
	824 - 849	—	34	—	
	880 - 915	—	35	—	
	915 - 1000	—	35.5	—	
Input VSWR	600 - 824	—	2.0	—	:1
	824 - 849	—	1.7	—	
	880 - 915	—	1.8	—	
	915 - 1000	—	1.8	—	
Output VSWR	600 - 824	—	2.0	—	:1
	824 - 849	—	1.7	—	
	880 - 915	—	1.8	—	
	915 - 1000	—	1.8	—	
DC Supply Voltage ¹	600 - 1100	—	24	—	V
Supply Current	600 - 1100	—	—	185	mA

1. Other voltages available in the 6.5 to 60V range. please contact factory.

Notes

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
 B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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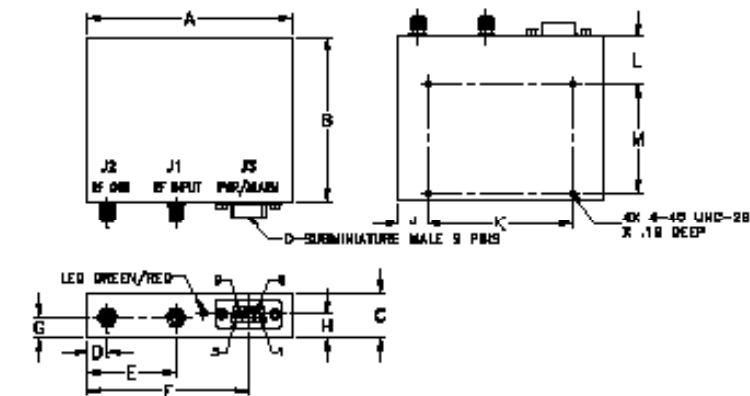
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Maximum Ratings

Parameter	Ratings
Operating Temperature	-40°C to 70°C case -40° to 60°C ambient
Storage Temperature	-55°C to 100°C
DC Voltage	+18V min, +36V max
Input RF Power (no damage)	+10 dBm

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

Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J	K	L	M	wt
3.75	3.00	.80	.37	1.62	2.95	.36	.42	.55	2.650	.86	2.000	grams
95.25	76.20	20.32	9.40	41.15	74.93	9.14	10.67	13.97	67.31	21.84	50.80	280.0

Pin Connections

RF input	J1
RF output	J2
DC power input	5
TTL alarm output	1
Ground to test alarm, normally open	7*,9*
No connection	3,6,8
Ground	2,4
Case ground	2,4

*Grounding Pin 7 will sink 75mA of current through Pin 7 creating a high-current alarm condition inside the amplifiers. A red LED and TTL high output will occur. Pin 7 floats at +4.3V typ. when open.

*Grounding Pin 9 will sink 2mA of current through pin 9 and creating a low-current alarm condition inside the amplifier. A red LED and TTL high output will occur. Pin 9 floats at about +0.6V typ. when open.

Alarm Functions

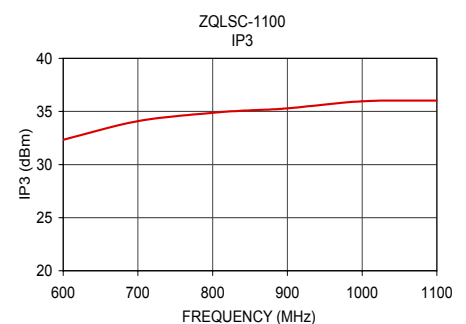
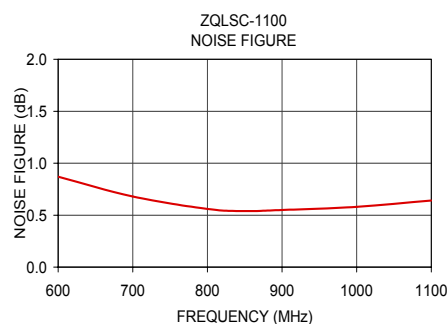
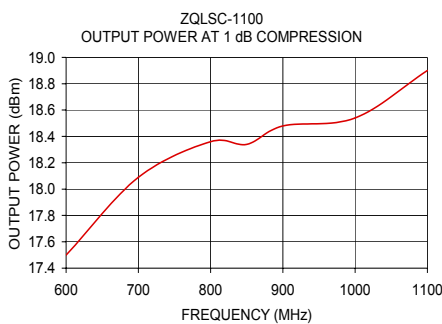
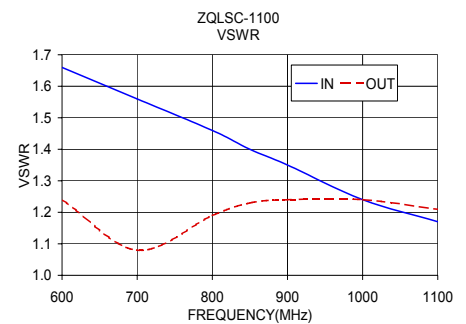
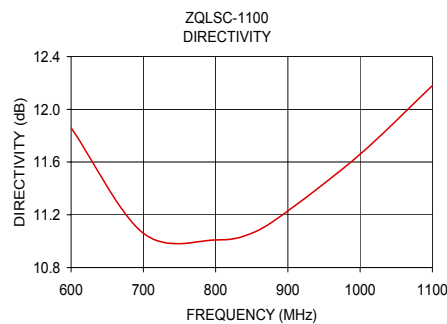
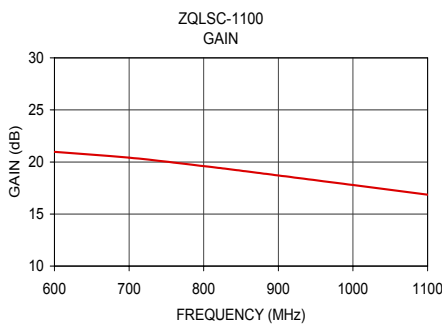
Normal:	TTL low output (0 to 0.8V), green LED
Alarm:	TTL high output (4 to 5V), red LED
DC & alarm connector:	9-pin male D-sub

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FREQUENCY (MHz)	GAIN (dB)	DIRECTIVITY (dB)	VSWR (:1) 24V		POUT at 1 dB COMPR. (dBm)	IP3 (dBm)	NOISE FIGURE (dB)
	24V	24V	IN	OUT	24V	24V	24V
600.00	20.97	11.86	1.66	1.24	17.50	32.33	0.87
700.00	20.42	11.06	1.56	1.08	18.09	34.09	0.68
800.00	19.60	11.01	1.46	1.19	18.36	34.87	0.56
850.00	19.17	11.06	1.40	1.23	18.34	35.10	0.54
900.00	18.71	11.23	1.35	1.24	18.48	35.29	0.55
1000.00	17.79	11.66	1.24	1.24	18.54	35.95	0.58
1100.00	16.86	12.18	1.17	1.21	18.90	36.02	0.64



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ZQLSC-1100

Typical Performance Data

FREQUENCY (MHz)	GAIN (dB) 24V	DIRECTIVITY (dB) 24V	VSWR IN (:1) 24V	VSWR OUT (:1) 24V	NOISE FIGURE (dB) 24V	Pout at 1dB Comp. (dBm) 24V	FREQUENCY (MHz)	Output IP3 (dBm) 24V
600.0	20.97	11.90	1.66	1.24	0.87	17.50	600.0	32.33
650.0	20.75	11.30	1.61	1.10	0.76	17.85	700.0	34.09
700.0	20.42	11.10	1.56	1.08	0.68	18.09	800.0	34.87
750.0	20.03	10.90	1.51	1.14	0.60	18.35	850.0	35.10
800.0	19.60	11.00	1.46	1.19	0.56	18.36	900.0	35.29
850.0	19.17	11.10	1.40	1.23	0.54	18.34	1000.0	35.95
900.0	18.71	11.20	1.35	1.24	0.55	18.48	1100.0	36.02
950.0	18.25	11.40	1.29	1.25	0.55	18.56		
1000.0	17.79	11.70	1.24	1.24	0.58	18.54		
1050.0	17.33	11.90	1.20	1.23	0.61	18.66		
1100.0	16.86	12.20	1.17	1.21	0.64	18.90		

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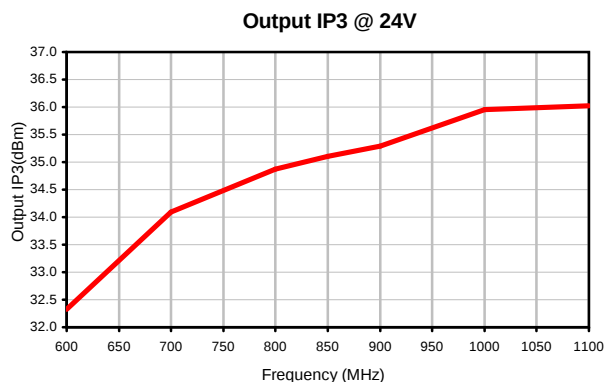
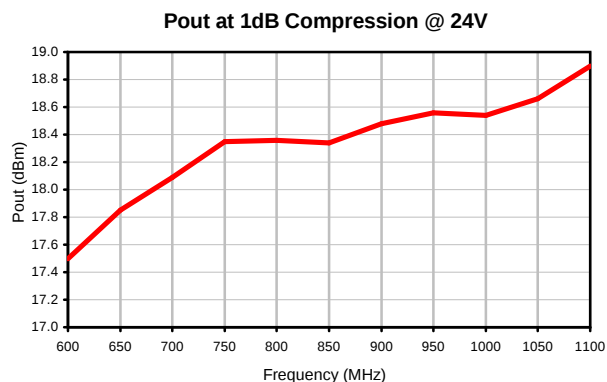
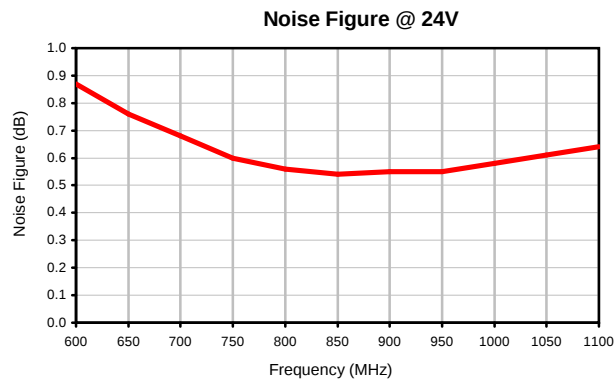
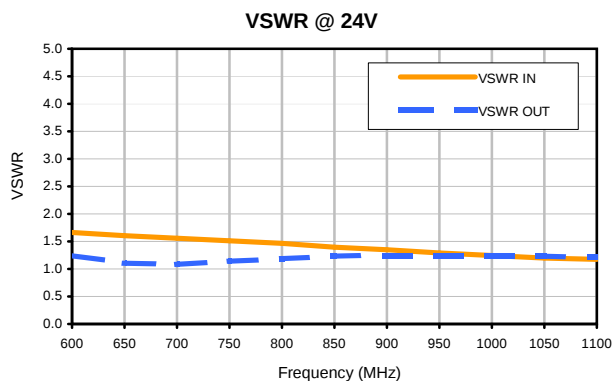
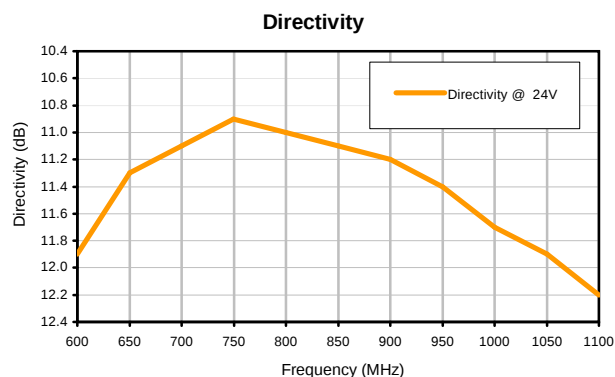
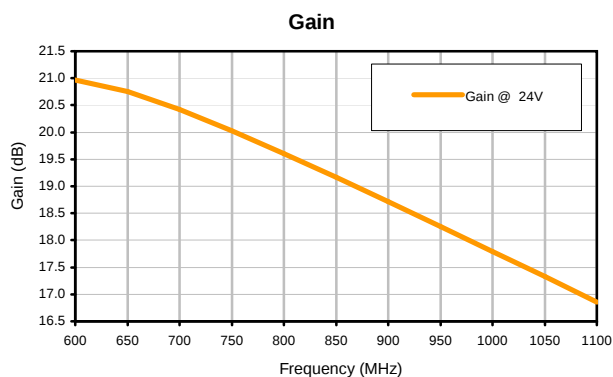
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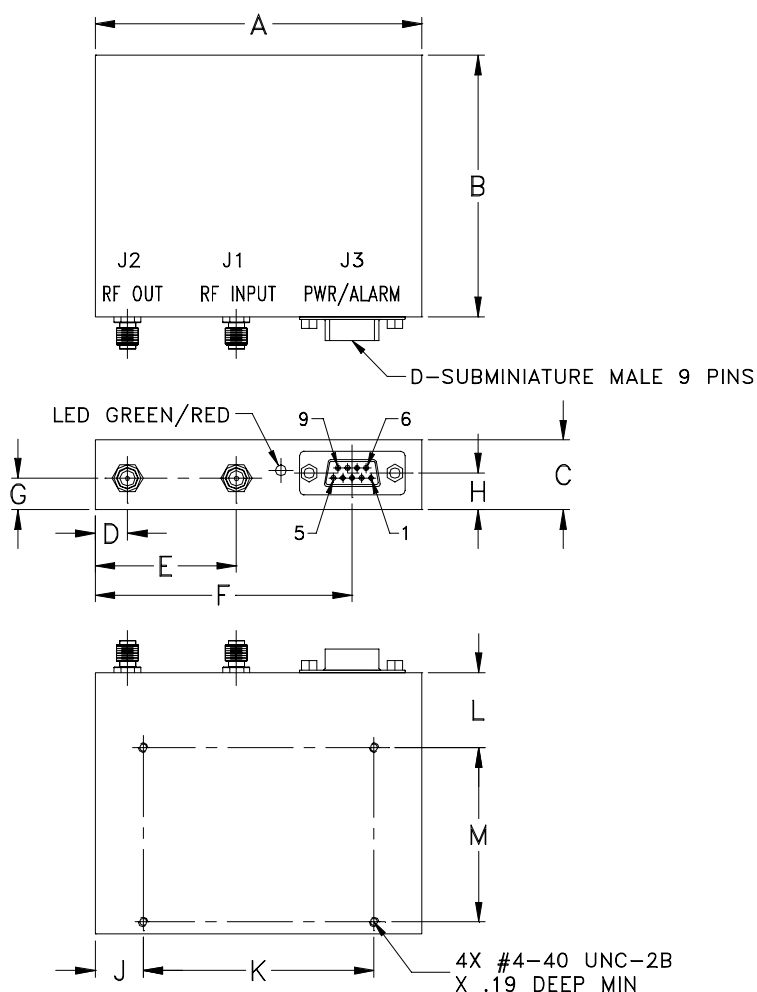
Low Noise Amplifier

Typical Performance Curves

ZQLSC-1100



Outline Dimensions



CASE#	A	B	C	D	E	F	G	H	J	K	L	M	WT. GRAM
GZ1067	3.75 (95.25)	3.00 (76.20)	.80 (20.32)	.37 (9.40)	1.62 (41.15)	2.95 (74.93)	.36 (9.14)	.42 (10.67)	.55 (13.97)	2.650 (67.31)	.86 (21.84)	2.000 (50.80)	280.0

Dimensions are in inches (mm). Tolerances: 2Pl. $\pm .03$; 3Pl. $\pm .015$

Notes:

- Case material: Aluminum alloy.
- Case finish:

For RoHS Case Styles: Clear chemical conversion coating, non-chrome or trivalent chrome based.



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All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-40° to 60° C Ambient Environment	Individual Model Data Sheet
Operating Temperature	-40° to 80° C Case Temperature	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Stabilization Bake	(non-operating) 125°C, 24 hours	- - -
Burn-in at Elevated Temp.	(DC on) 160 hours at 85° C Case	MIL-STD-202, Method 108
Thermal Shock	-55° to 100°C, 5 cycles	MIL-STD-202, Method 107, Condition A, except 100°C
Vibration	Random, general use, 20-2000 Hz, 1 hour per axis	MIL-STD-810, Method 514.5, Category 24, Exposure Level per Fig. 514C-17
Mechanical Shock	Terminal-peak sawtooth, 40 G's, 11 ms; 3 shocks +/-, each axis, 18 total	MIL-STD-810, Method 516.5-II