

Coaxial

Low Noise Amplifier

ZQLSC-2400

50Ω

1400 to 2400 MHz

Features

- High reliability balanced design
- Noise Figure, 0.9 dB typ.
- Built-in alarm monitoring
- TTL alarm output, green/red alarm status LED
- Voltage regulated/protected DC input

Applications

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



Case Style: GZ1067

Connectors	Model
SMA	ZQLSC-2400

Electrical Specifications at 25°C

Parameter	Condition (MHz)	Min.	Typ.	Max.	Units
Frequency Range		1400		2400	MHz
Noise Figure	1400 - 1850	—	0.8	1.15	dB
	1850 - 2000	—	0.9	1.25	
	2000 - 2400	—	1.1	1.65	
Gain	1400 - 1850	13.5	17	—	dB
	1850 - 2000	12.5	15.6	—	
	2000 - 2400	10.5	13.2	—	
Gain Flatness	1400 - 1850	—	±1.0	±2.5	dB
	1850 - 2000	—	±0.5	±1.0	
	2000 - 2400	—	±1.5	±2.0	
Output Power at 1dB compression	1400 - 1850	17	19	—	dBm
	1850 - 2000	17	20.5	—	
	2000 - 2400	17	20	—	
Output third order intercept point	1400 - 1850	—	37	—	dBm
	1850 - 2000	—	35	—	
	2000 - 2400	—	34	—	
Input VSWR	1400 - 1850	—	1.7	—	:1
	1850 - 2000	—	1.5	—	
	2000 - 2400	—	1.6	—	
Output VSWR	1400 - 1850	—	1.6	—	:1
	1850 - 2000	—	1.6	—	
	2000 - 2400	—	1.9	—	
DC Supply Voltage ¹	1400 - 2400	—	24	—	V
Supply Current	1400 - 2400	—	—	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.
 C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

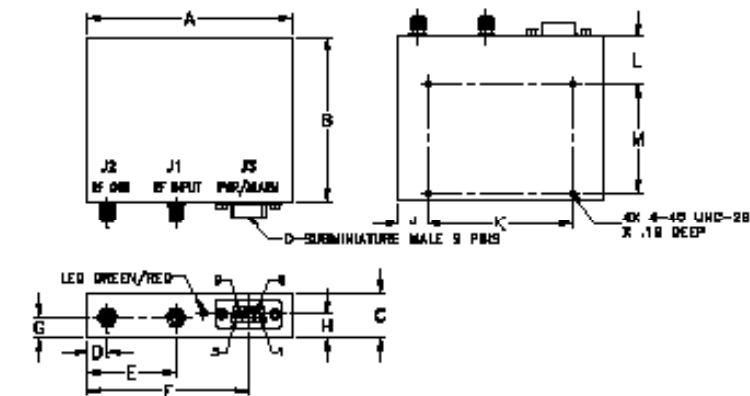


Maximum Ratings

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

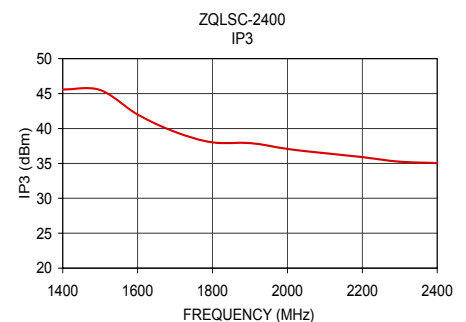
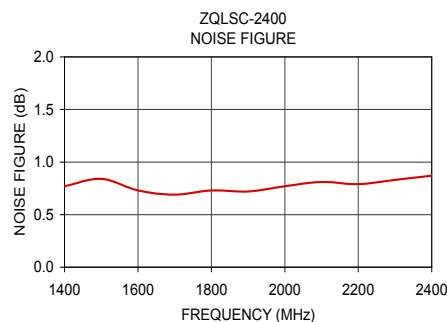
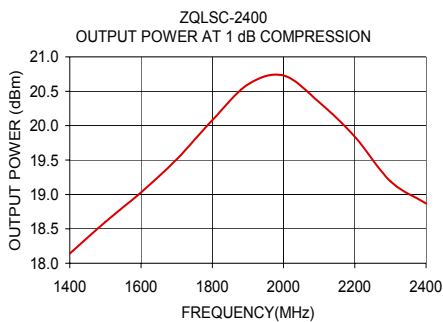
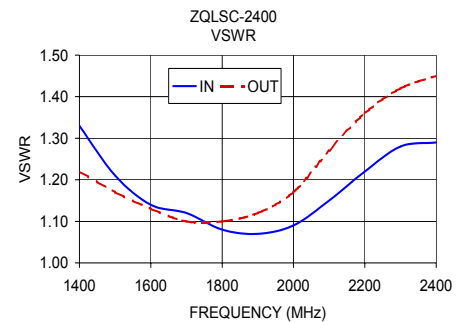
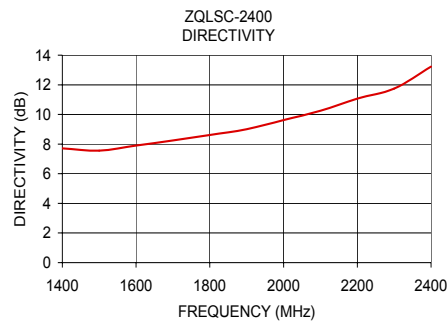
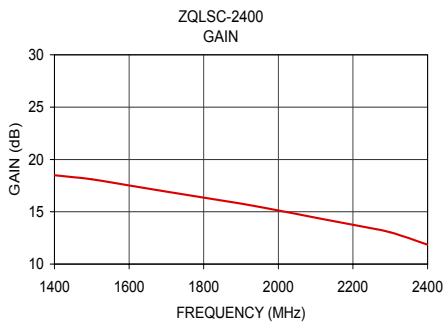
Normal:	TTL low output (0 to 0.8V), green LED
Alarm:	TTL high output (4 to 5V), red LED
DC & alarm connector:	9-pin male D-sub

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.
 C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp



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
1400.00	18.49	7.71	1.33	1.22	18.14	45.58	0.77
1500.00	18.10	7.56	1.21	1.17	18.60	45.50	0.84
1600.00	17.52	7.90	1.14	1.13	19.03	42.00	0.73
1700.00	16.92	8.25	1.12	1.10	19.51	39.51	0.69
1800.00	16.35	8.61	1.08	1.10	20.08	38.02	0.73
1900.00	15.78	9.00	1.07	1.12	20.60	37.91	0.72
2000.00	15.12	9.62	1.09	1.17	20.73	37.08	0.77
2100.00	14.43	10.25	1.15	1.27	20.34	36.47	0.81
2200.00	13.75	11.07	1.22	1.36	19.84	35.91	0.79
2300.00	13.03	11.75	1.28	1.42	19.19	35.23	0.83
2400.00	11.86	13.23	1.29	1.45	18.87	35.05	0.87



Notes

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp



Low Noise Amplifier

ZQLSC-2400

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	Output IP3 (dBm) 24V
1400.0	18.49	7.70	1.33	1.22	0.77	18.14	45.58
1500.0	18.10	7.60	1.21	1.17	0.84	18.60	45.50
1600.0	17.52	7.90	1.14	1.13	0.73	19.03	42.00
1700.0	16.92	8.30	1.12	1.10	0.69	19.51	39.51
1800.0	16.35	8.60	1.08	1.10	0.73	20.08	38.02
1900.0	15.78	9.00	1.07	1.12	0.72	20.60	37.91
2000.0	15.12	9.60	1.09	1.17	0.77	20.73	37.08
2100.0	14.43	10.30	1.15	1.27	0.81	20.34	36.47
2200.0	13.75	11.10	1.22	1.36	0.79	19.84	35.91
2300.0	13.03	11.80	1.28	1.42	0.83	19.19	35.23
2400.0	11.86	13.20	1.29	1.45	0.87	18.87	35.05

REV. X1
ZQLSC-2400
070709
Page 1 of 1



IF/RF MICROWAVE COMPONENTS • ISO 9001 ISO 14001 AS9100 CERTIFIED RoHS compliant

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661



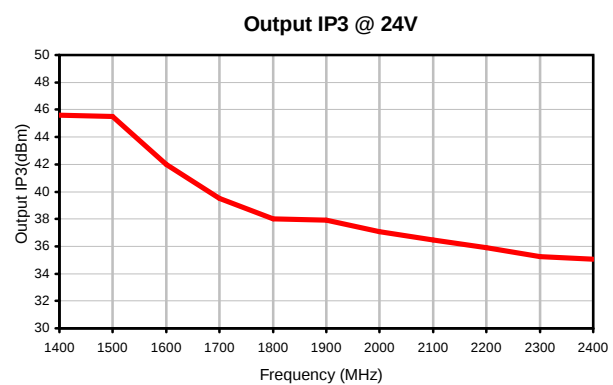
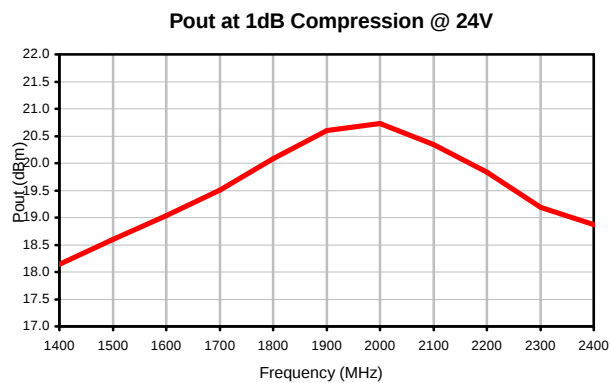
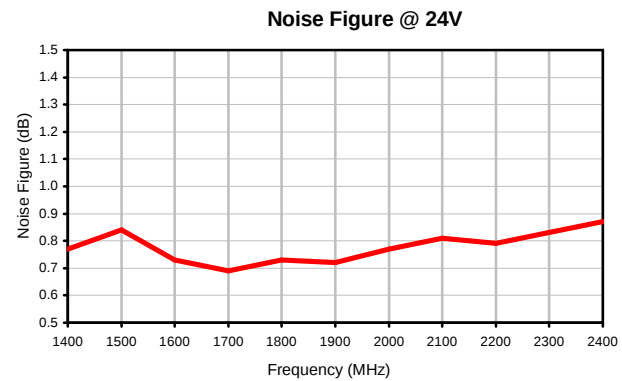
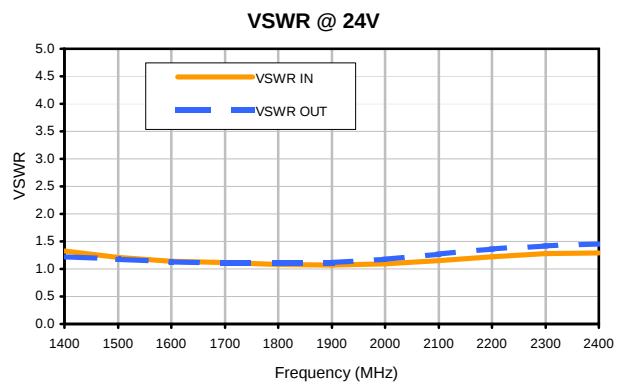
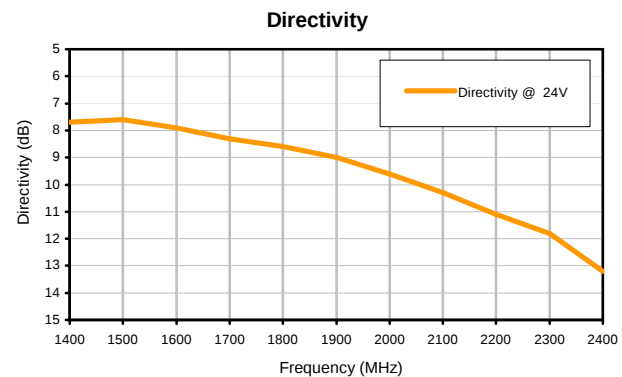
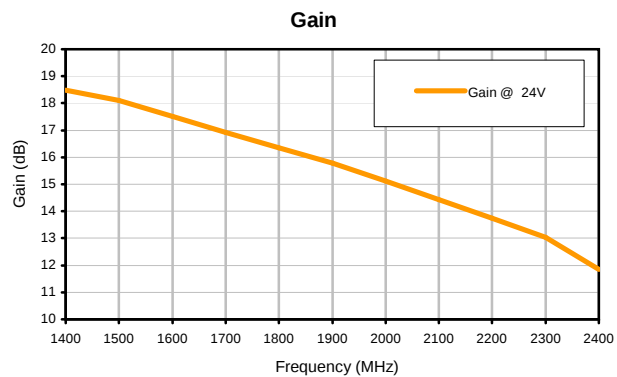
The Design Engineers Search Engine finds the model you need, Instantly • For detailed performance specs & shopping online see



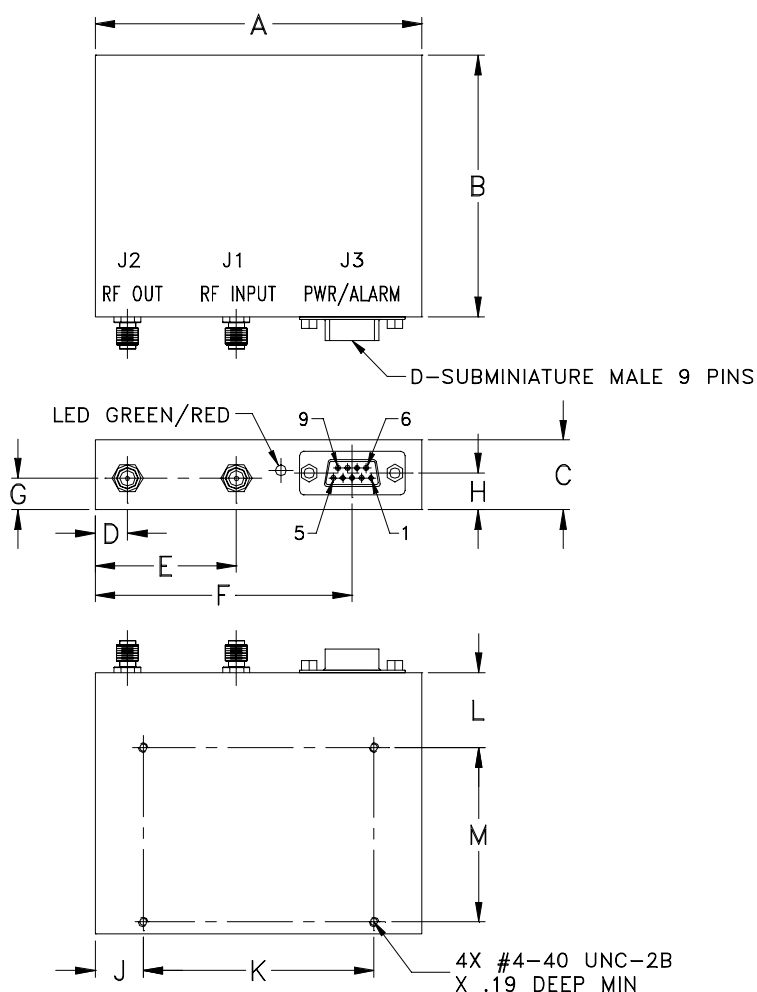
Low Noise Amplifier

ZQLSC-2400

Typical Performance Curves



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.



INTERNET <http://www.minicircuits.com>

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661

Distribution Centers NORTH AMERICA 800-654-7949 • 417-335-5935 • Fax 417-335-5945 • EUROPE 44-1252-832600 • Fax 44-1252-837010

Mini-Circuits ISO 9001 & ISO 14001 Certified



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