

Engineering Development Model

Frequency Synthesizer

ZSN-EDR10835

Important Note

This model has been designed, built and tested in our engineering department. Performance data represents model capability. At present it is a non-catalog model. On request, we can supply a final specification sheet, part number and price/delivery information.



CASE STYLE : KG1714

Please click "Back", and then click "Contact Us" for Applications support.

ELECTRICAL SPECIFICATIONS 50Ω, over -10°C to +70°C				
Parameter	Min.	Typ.	Max.	Units
Frequency	890		890	MHz
Step size		10000		kHz
Settling Time Within ±1kHz		1.5		msec
Output Power	+6	+10	+13	dBm
Phase Noise				
at 100 Hz offset		-99		dBc/Hz
at 1 kHz offset		-107	-101	dBc/Hz
at 10 KHz offset		-105	-99	dBc/Hz
at 100 KHz offset		-126	-120	dBc/Hz
at 1000 kHz offset		-155	-149	dBc/Hz
Integrated SSB Phase Noise		-59		dBc
Ref & Comp Spurious Suppression		-90		dBc
Non-Harm. Spurious Suppression		-90		dBc
Harmonic Suppression		-59		dBc
Supply voltage VCO & PLL		12		V
Supply current VCO & PLL		153	162	V
Reference In (External)				
Frequency		10		MHz
Amplitude		1		Vp-p
Impedance		100		kΩ
Ph. N @ 1kHz		-145		dBc/Hz
Digital Lock Detect	Locked	2.9	3.3	V
	Unlocked		0.4	
Frequency Synthesizer PLL	Self-programmed (internal microcontroller)			

ABSOLUTE MAXIMUM RATINGS	
Operating Temperature	-45°C to 85°C
Storage Temperature	-55°C to 100°C
Supply Voltage	13V
Reference Frequency voltage	3.6Vp-p

CONNECTIONS	
RF OUT	SMA (Female)
REF IN	SMA (Female)
VCC	Turret Terminal
LOCK DETECT	Turret Terminal

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-Circuits' 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/MCStore/terms.jsp



Frequency Synthesizer

ZSN-EDR10835

Typical Performance Data

FREQ. (MHz)	POWER OUTPUT (dBm)			HARMONICS (dBc)						VCO CURRENT (mA)			PLL CURRENT (mA)		
				F2			F3								
	-10°C	+25°C	+70°C	-10°C	+25°C	+70°C	-10°C	+25°C	+70°C	-10°C	+25°C	+70°C	-10°C	+25°C	+70°C
890	9.83	9.88	9.85	-58.22	-59.03	-57.51	-57.77	-54.68	-57.64	23.45	0.00	25.21	151.52	153.64	156.06

FREQ. (MHz)	PHASE NOISE (dBc/Hz)														
	@ OFFSETS														
	-10°C					+25°C					+70°C				
	100Hz	1kHz	10kHz	100kHz	1MHz	100Hz	1kHz	10kHz	100kHz	1MHz	100Hz	1kHz	10kHz	100kHz	1MHz
890	-99.29	-107.19	-104.97	-125.36	-154.68	-99.35	-108.14	-104.67	-126.04	-155.11	-97.98	-108.37	-104.12	-125.69	-154.04

REFERENCE & COMPARISON SPURIOUS ORDER	REFERENCE & COMPARISON SPURIOUS @Fcarrier 890MHz± (n*Fcomparison) (dBc) NOTE 1		
	-10°C	+25°C	+70°C
n			
-5	-95.80	-89.36	-82.51
-4	-98.42	-96.49	-83.99
-3	-95.72	-101.77	-84.35
-2	-87.64	-100.73	-85.09
-1	-81.28	-89.7	-82.8
0 ^{note 2}	-	-	-
+1	-79.69	-81.02	-82.79
+2	-82.06	-83.5	-87.37
+3	-82.29	-83.38	-91.12
+4	-81.59	-81.79	-89.04
+5	-82.17	-80.72	-85.7

Note 1: Comparison frequency & Reference frequency 10 MHz

Note 2: All spurs are referenced to carrier signal (n=0).

Notes

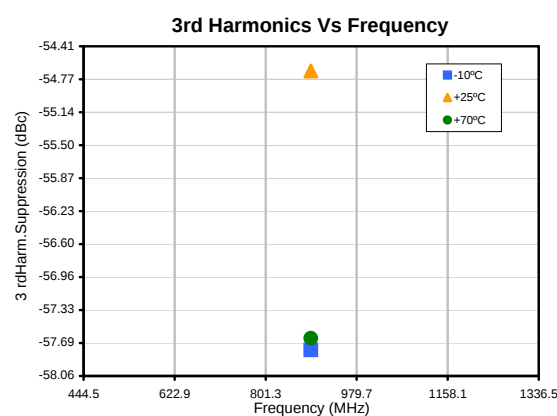
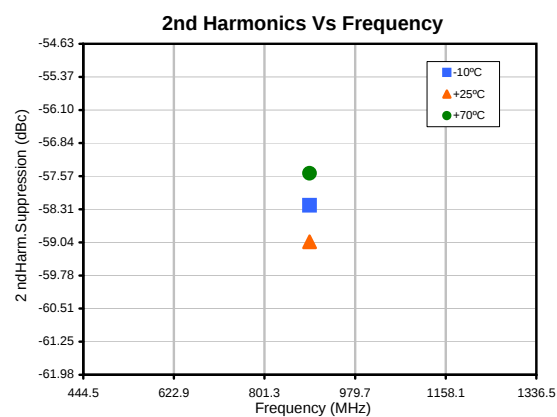
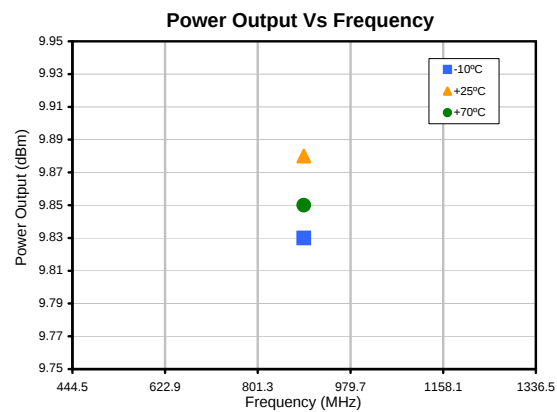
- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
 B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' 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 Synthesizer

ZSN-EDR10835

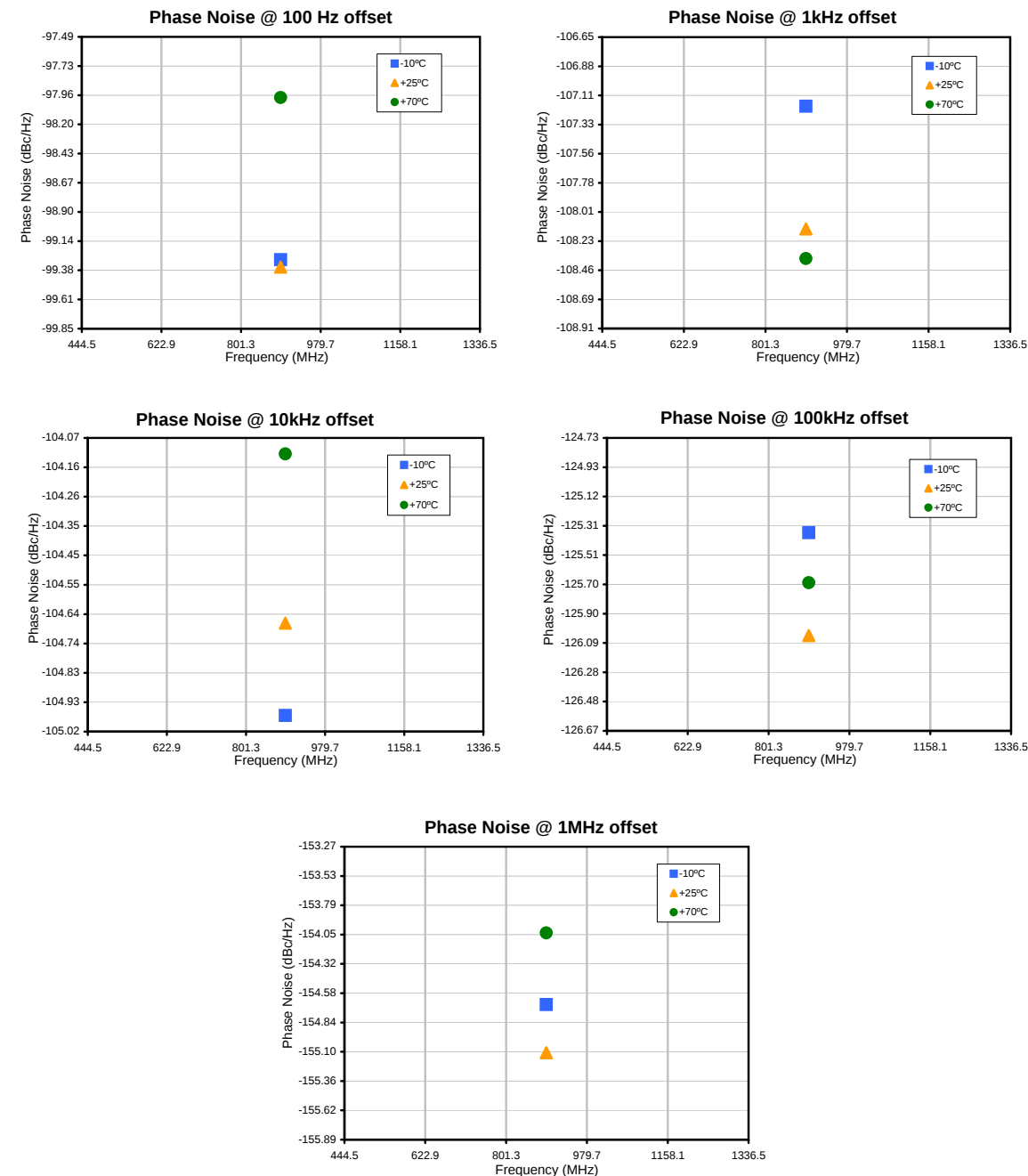
Typical Performance Data



Frequency Synthesizer

ZSN-EDR10835

Typical Performance Data



Notes

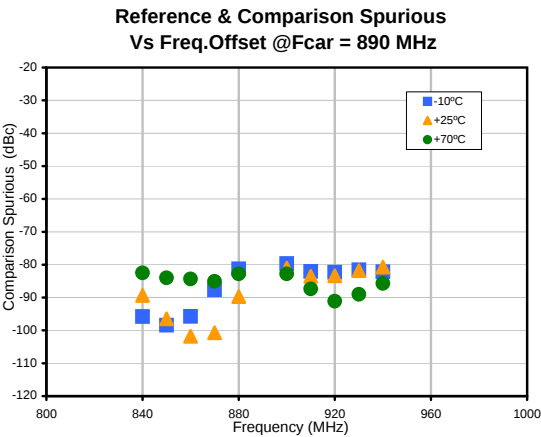
A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.

B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' 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/MCStore/terms.jsp



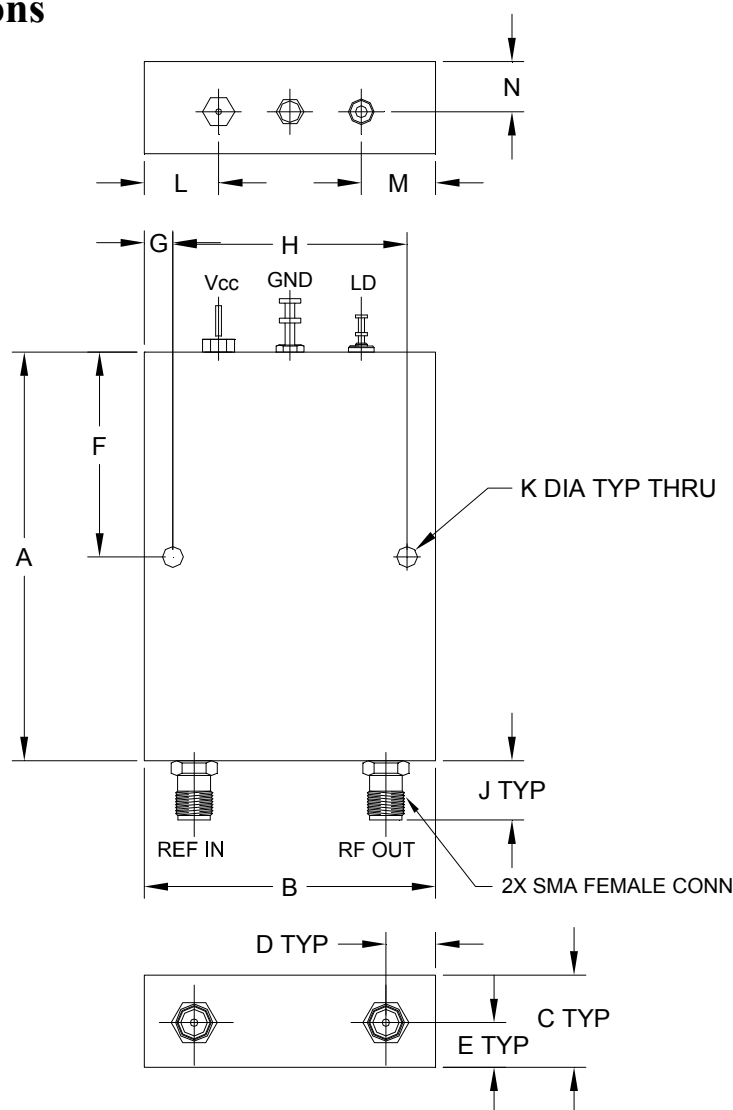
Typical Performance Data



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-Circuits' 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/MCStore/terms.jsp





CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N	WT, GRAM
KG1714	2.75 (69.85)	1.96 (49.78)	.62 (15.75)	.34 (8.64)	.30 (7.62)	1.38 (35.05)	.19 (4.83)	1.575 (40.00)	.40 (10.16)	.14 (3.56)	.50 (12.70)	.50 (12.70)	.34 (8.64)	135

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

Notes:

1. Case material: Aluminum alloy.
2. 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 85° C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Humidity	90 to 95% RH, 240 hours, 50°C	MIL-STD-202, Method 103, Condition A, Except 50°C and end-point electrical test done within 12 hours
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
Vibration (High Frequency)	20g peak, 20-2000 Hz, 4 times in each of three axes (total 12)	MIL-STD-883, Method 2007.3, Condition A
Mechanical Shock	50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes	MIL-STD-202, Method 213, Condition A