

Engineering Development Model

Frequency Synthesizer

ZSN-EDR10802/1

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 -15°C to +75°C				
Parameter	Min.	Typ.	Max.	Units
Frequency	850		850	MHz
Step size		10000		kHz
Settling Time Within ±1kHz		205		μsec
Output Power	+13	+17	+20	dBm
Phase Noise	at 100 Hz offset	-99		dBc/Hz
	at 1 kHz offset	-108	-102	dBc/Hz
	at 10 KHz offset	-106	-100	dBc/Hz
	at 100 KHz offset	-126	-121	dBc/Hz
	at 1000 kHz offset	-155	-150	dBc/Hz
Integrated SSB Phase Noise		-60		dBc
Ref & Comp Spurious Suppression		-94		dBc
Non-Harm. Spurious Suppression		-90		dBc
Harmonic Suppression		-61	-55	dBc
Supply voltage	VCO & PLL	12		V
Supply current	VCO & PLL	9	17	V
Reference In (External)	Frequency	10		MHz
	Amplitude	1		Vp-p
	Impedance	100		kΩ
	Ph. N @ 1kHz	-145		dBc/Hz
Digital Lock Detect	Locked	11.6	12	V
	Unlocked		0.4	
Frequency Synthesizer PLL		Self-programmed (internal microcontroller)		

ABSOLUTE MAXIMUM RATINGS	
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
VCO 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



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Typical Performance Data

FREQ. (MHz)	POWER OUTPUT (dBm)			HARMONICS (dBc)						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
850	16.59	16.68	16.68	-61.25	-61.62	-62.69	-67.30	-66.72	-66.67	236.98	239.46	241.45

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	1MHz
850	-100.37	-108.74	-107.98	-124.66	-155.43	-99.79	-106.54	-105.38	-126.54	-155.56	-96.56	-106.56	-104.48	-126.39

REFERENCE & COMPARISON SPURIOUS ORDER	REFERENCE & COMPARISON SPURIOUS @Fcarrier 850MHz± (n*Fcomparison) (dBc) NOTE 1		
	-10°C	+25°C	+70°C
n			
-5	-94.49	-88.35	-86.17
-4	-92.88	-87.92	-87.24
-3	-93.50	-87.83	-88.48
-2	-90.35	-87.78	-89.73
-1	-89.14	-89.94	-95.16
0 note 2	-	-	-
+1	-84.44	-83.54	-85.9
+2	-83.89	-82.55	-85.64
+3	-85.36	-82.52	-85.34
+4	-83.27	-81.03	-84.01
+5	-84.73	-81.5	-84.46

Note 1: Comparison frequency & Reference frequency 10 MHz

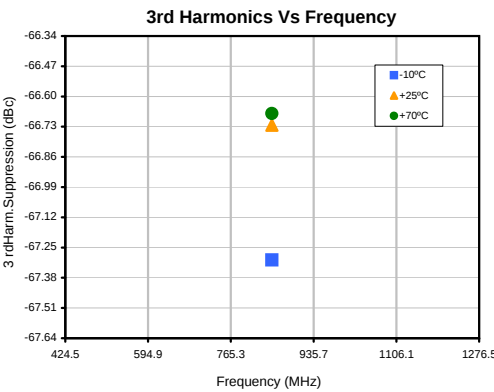
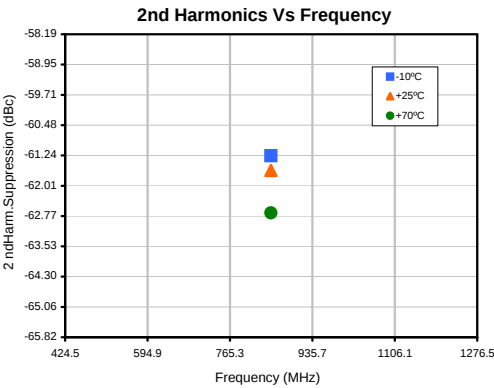
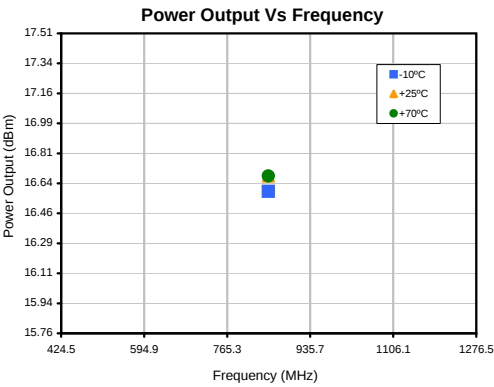
Note 2: All spurs are referenced to carrier signal (n=0).

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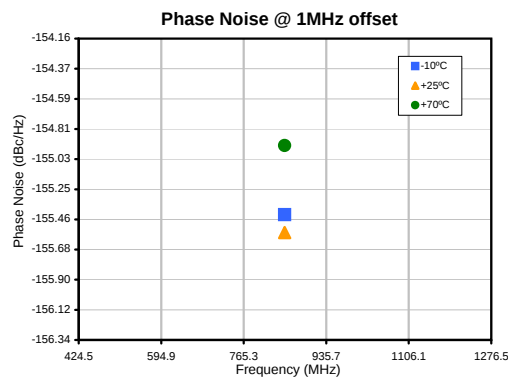
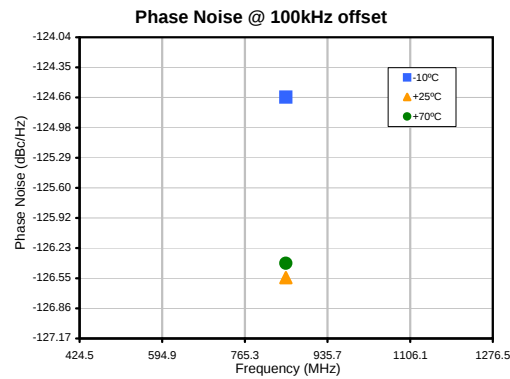
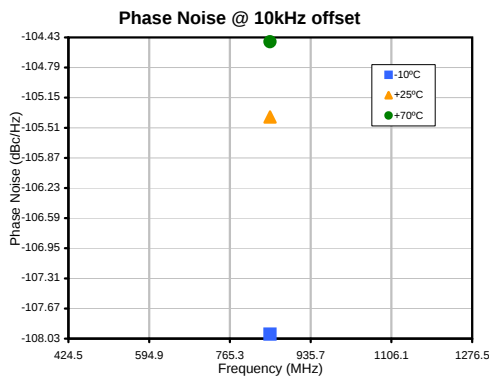
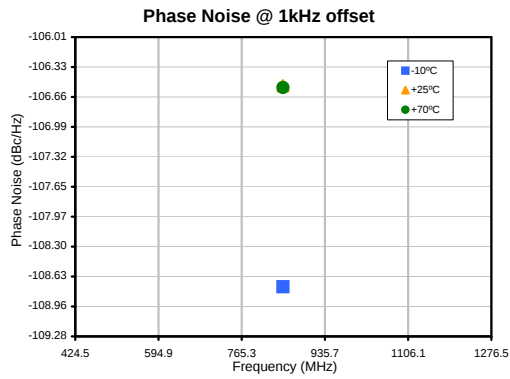
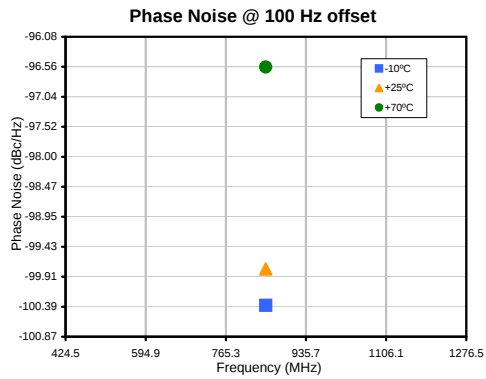
Typical Performance Data



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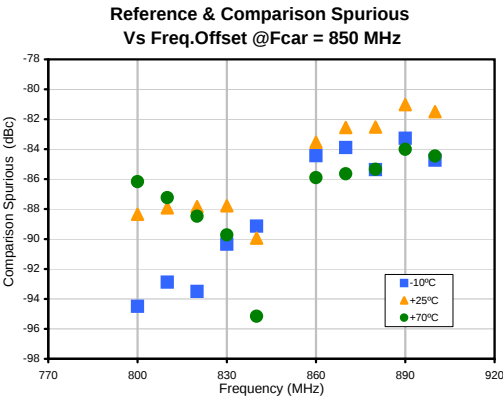


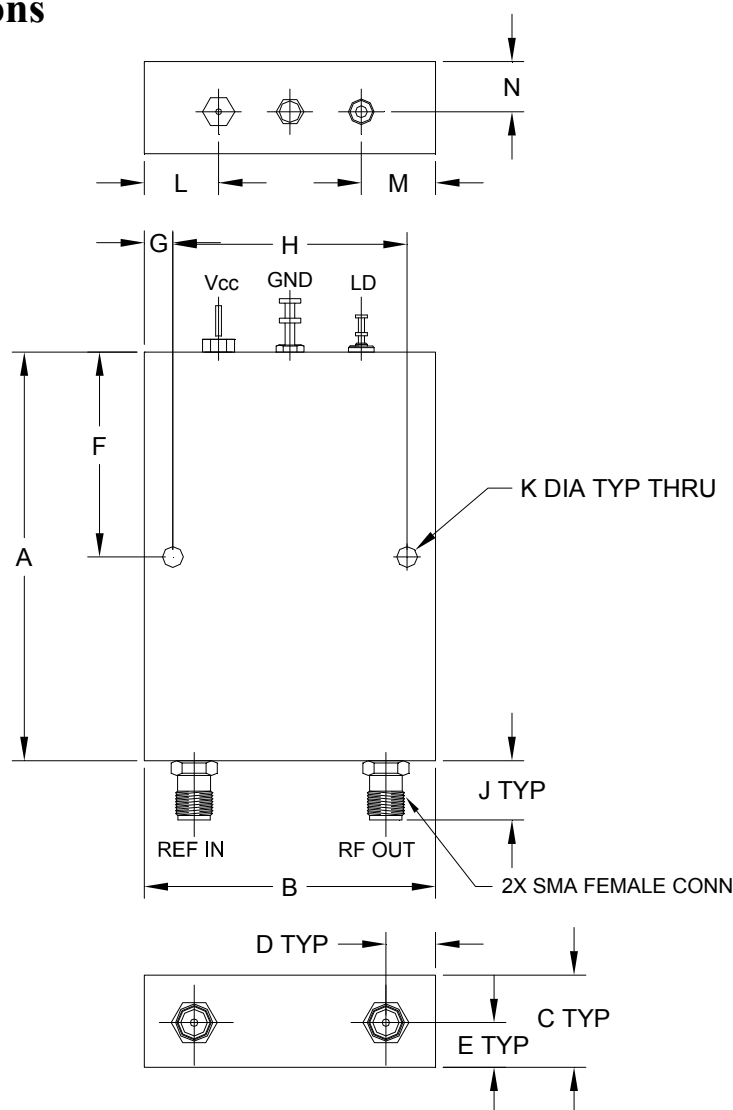
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Typical Performance Data





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.



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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 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