

Engineering Development Model

Frequency Synthesizer

ZSN-EDR10932/1

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 -40°C to +70°C				
Parameter	Min.	Typ.	Max.	Units
Frequency	1312.5		1312.5	MHz
Step size		31250		kHz
Settling Time Within ±1kHz		2		msec
Output Power	+7	+11	+14	dBm
Phase Noise				
at 100 Hz offset		-95		dBc/Hz
at 1 kHz offset		-102	-96	dBc/Hz
at 10 KHz offset		-110	-104	dBc/Hz
at 100 KHz offset		-120	-114	dBc/Hz
at 1000 kHz offset		-148	-142	dBc/Hz
Integrated SSB Phase Noise		-58		dBc
Comparison Spurious Suppression		-31		dBc
Non-Harm. Spurious Suppression		-90		dBc
Harmonic Suppression		-72	-65	dBc
Supply voltage VCO & PLL		5		V
Supply current VCO & PLL		143	152	V
Reference In (External)				
Frequency		156.25		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	6V
Reference Frequency voltage	3.6Vp-p

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

Notes

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Typical Performance Data

FREQ. (MHz)	POWER OUTPUT (dBm)			HARMONICS (dBc)						VCO CURRENT (mA)			PLL CURRENT (mA)		
				F2			F3								
	-40°C	+25°C	+70°C	-40°C	+25°C	+70°C	-40°C	+25°C	+70°C	-40°C	+25°C	+70°C	-40°C	+25°C	+70°C
1312.5	10.47	10.63	10.40	-66.08	-70.99	-75.73	-95.05	-96.54	-95.43	138.56	143.30	145.73	138.56	143.30	145.73

FREQ. (MHz)	PHASE NOISE (dBc/Hz)													
	@ OFFSETS													
	-40°C					+25°C					+70°C			
	100Hz	1kHz	10kHz	100kHz	1MHz	100Hz	1kHz	10kHz	100kHz	1MHz	100Hz	1kHz	10kHz	1MHz
1312.5	-95.35	-104.58	-109.43	-119.58	-146.40	-95.07	-103.01	-109.49	-119.80	-147.38	-95.22	-103.34	-108.84	-119.95

REFERENCE & COMPARISON SPURIOUS ORDER	REFERENCE SPURIOUS @Fcarrier 1312.5MHz± (n*Fcomparison) (dBc) NOTE 1			COMPARISON SPURIOUS @Fcarrier 1312.5 MHz± (n*Fcomparison) (dBc) NOTE 2		
	-40°C	+25°C	+70°C	-40°C	+25°C	+70°C
n						
-5	-102.63	-107.05	-108.59	-69.73	-67.56	-67.11
-4	-101.74	-95.3	-95.99	-78.54	-82.6	-84.68
-3	-91.55	-89.88	-87.11	-80.96	-81.36	-87.68
-2	-79.60	-74.96	-75.19	-83.58	-86.52	-85.6
-1	-69.81	-67.52	-67.14	-92.72	-92.3	-92.75
0 note 3	-	-	-	-	-	-
+1	-75.58	-79.25	-79.36	-84.87	-89.28	-85.95
+2	-82.68	-80.85	-80.79	-74.22	-76.36	-79.71
+3	-103.85	-111.78	-95.92	-76.26	-75.13	-77.39
+4	-107.46	-108.07	-102.59	-91.46	-85.57	-88.25
+5	-115.35	-116.29	-115.05	-75.65	-79.21	-79.42

Note 1: Reference frequency 156.25 MHz.

Note 2: Comparison frequency 31.25 MHz.

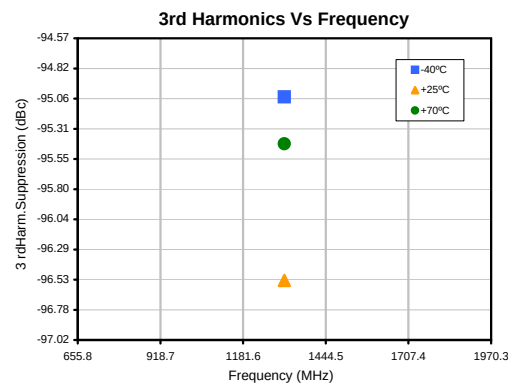
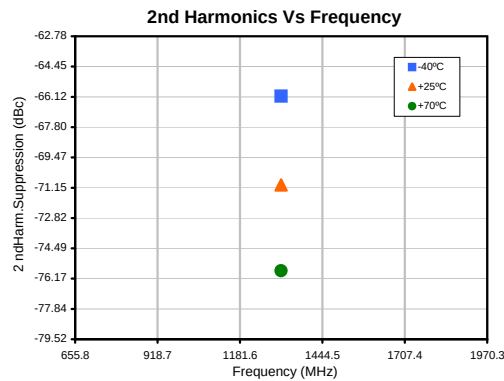
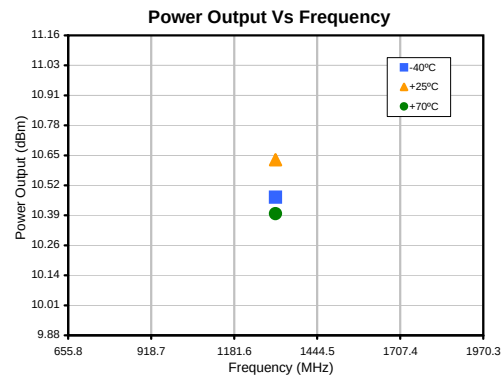
Note 3: All spurs are referenced to carrier signal (n=0).

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Typical Performance Data



Notes

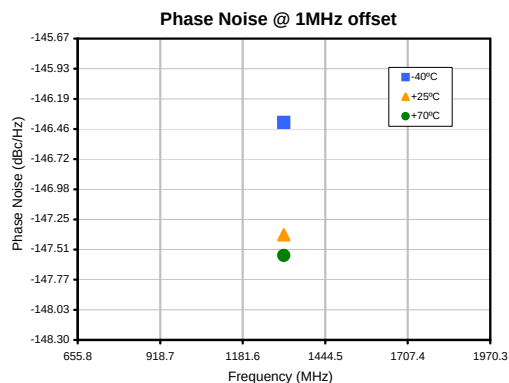
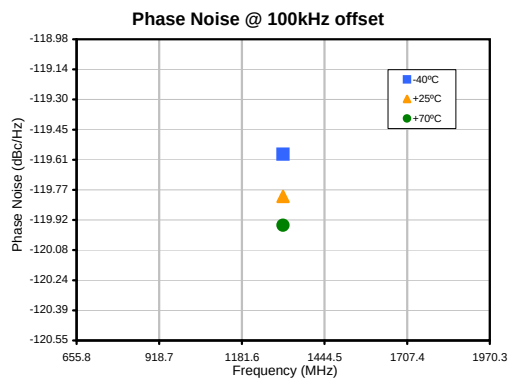
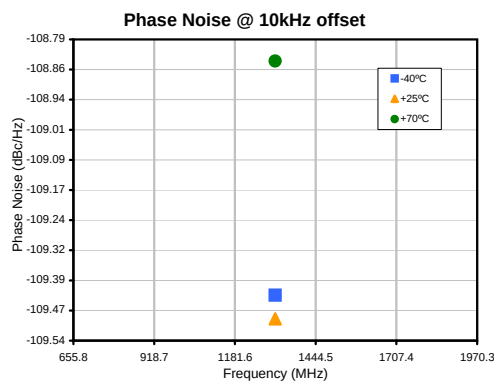
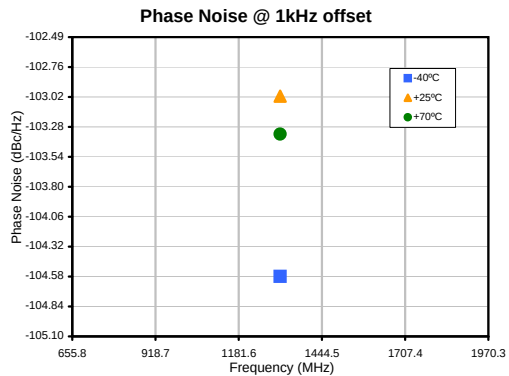
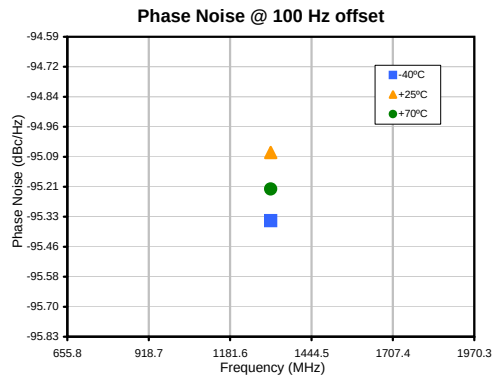
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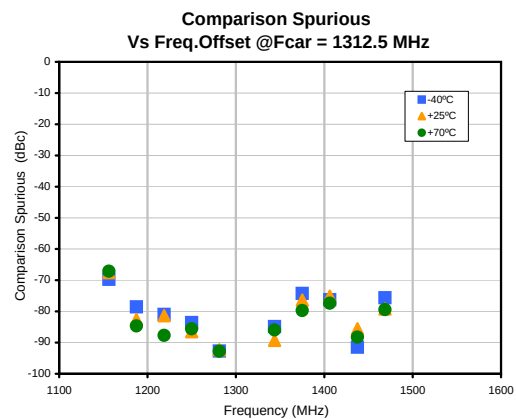
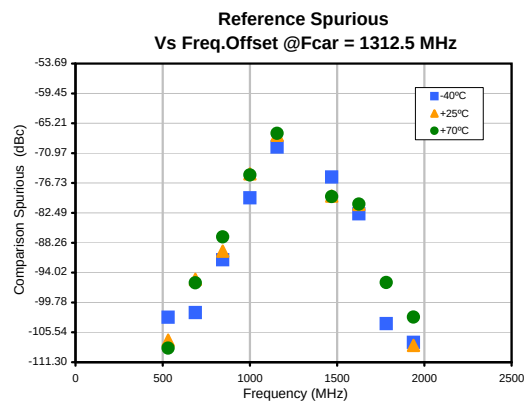


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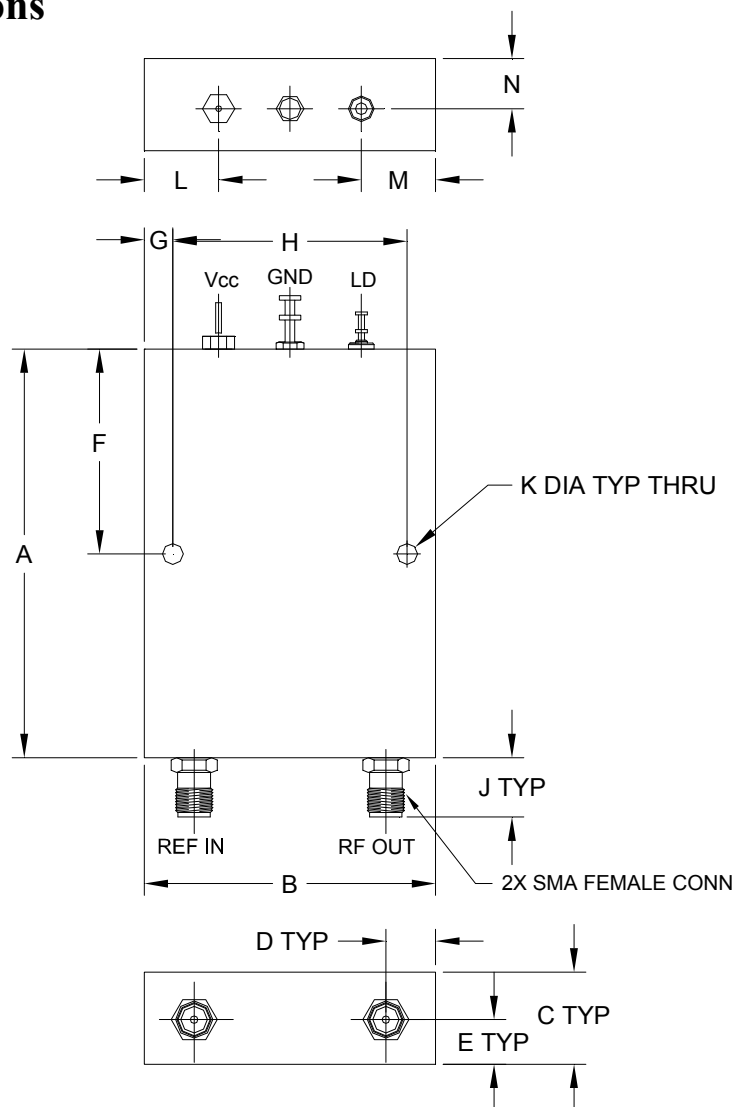
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CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N	WT, GRAM
KG1714	2.75 (69.85)	1.96 (49.78)	.62 (15.75)	.34 (8.64)	.30 (7.62)	1.38 (35.05)	.19 (4.83)	1.575 (40.00)	.40 (10.16)	.14 (3.56)	.50 (12.70)	.50 (12.70)	.34 (8.64)	135

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