

Engineering Development Model

Frequency Synthesizer

ZSN-EDR10978

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	1625		1625	MHz
Step size		15625		kHz
Settling Time Within ±1kHz		2.5		msec
Output Power	+7	+11	+15	dBm
Phase Noise				
at 100 Hz offset		-91		dBc/Hz
at 1 kHz offset		-99	-94	dBc/Hz
at 10 KHz offset		-106	-100	dBc/Hz
at 100 KHz offset		-116	-111	dBc/Hz
at 1000 kHz offset		-146	-141	dBc/Hz
Integrated SSB Phase Noise		-56		dBc
Reference Spurious Suppression		-94		dBc
Comparison Spurious Suppression		-36		dBc
Non-Harm. Spurious Suppression		-90		dBc
Harmonic Suppression		-72	-63	dBc
Supply voltage VCO & PLL		5		V
Supply current VCO & PLL		130	142	V
Reference In (External)	Frequency	156.25		MHz
	Amplitude	1		Vp-p
	Impedance	100		kΩ
	Ph. N @ 1kHz	-145		dBc/Hz
Digital Lock Locked	2.9		3.3	V
Detect 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)						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
1625	11.54	10.96	9.87	-85.71	-73.52	-66.16	-70.52	-76.62	-79.69	127.31	129.64	131.35

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	100kHz	1MHz
1625	-92.06	-98.74	-106.02	-115.96	-145.78	-91.03	-99.03	-105.52	-116.25	-146.14	-95.51	-100.30	-105.75	-116.32	-146.08

REFERENCE & COMPARISON SPURIOUS ORDER	REFERENCE SPURIOUS @Fcarrier 1625MHz± (n*Fcomparison) (dBc) NOTE 1			COMPARISON SPURIOUS @Fcarrier 1625 MHz± (n*Fcomparison) (dBc) NOTE 2		
	-40°C	+25°C	+70°C	-40°C	+25°C	+70°C
n						
-5	-96.58	-97.09	-105.84	-96.97	-97.54	-103.06
-4	-93.51	-90.69	-89.03	-110.43	-103.22	-101.21
-3	-98.60	-94.93	-92.5	-124.79	-108.79	-105.21
-2	-95.88	-93.98	-90.92	-102.14	-101.15	-111.24
-1	-89.68	-89.61	-86.5	-90.08	-89.73	-90.83
0 note 3	-	-	-	-	-	-
+1	-88.17	-89.61	-87.68	-90.45	-90.87	-90.33
+2	-93.50	-94.86	-93.38	-117.48	-112.77	-109.69
+3	-94.72	-95.26	-95.82	-108.77	-123.03	-108.82
+4	-92.01	-92.34	-93.93	-128.07	-123.65	-136.07
+5	-98.29	-96.84	-96.64	-132.24	-123.8	-127.37

Note 1: Reference frequency 156.25 MHz.

Note 2: Comparison frequency 15.625 MHz.

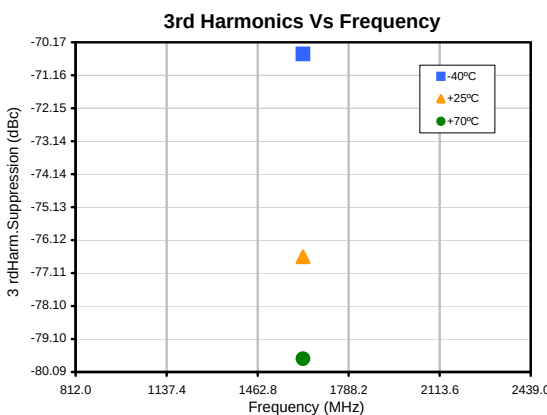
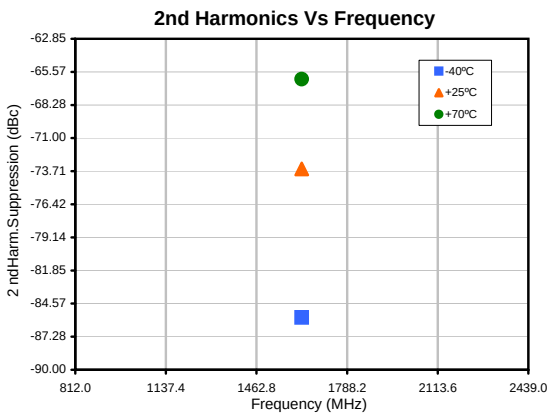
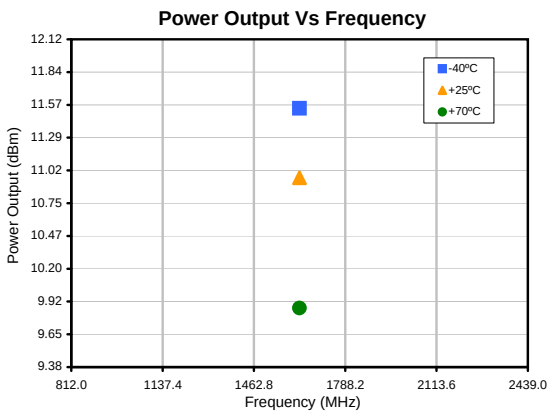
Note 3: All spurs are referenced to carrier signal (n=0).

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Typical Performance Data



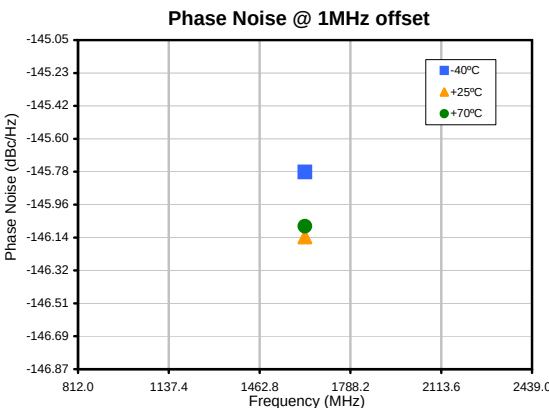
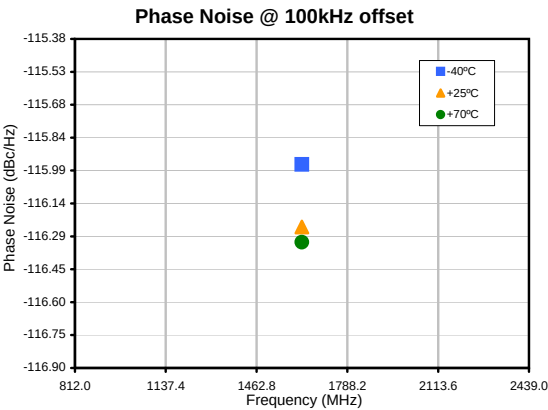
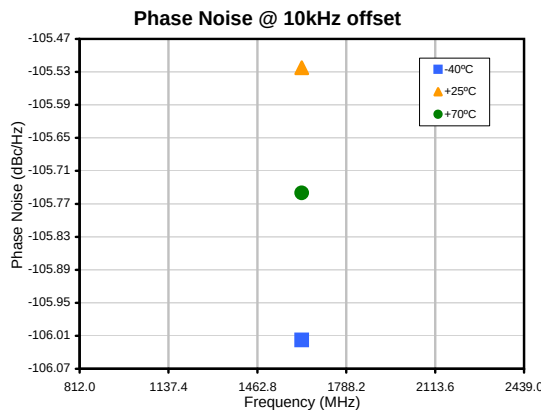
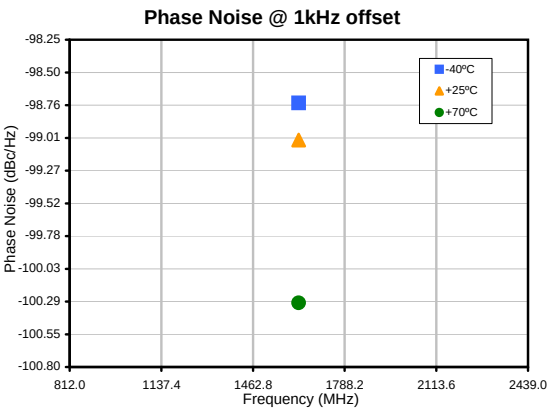
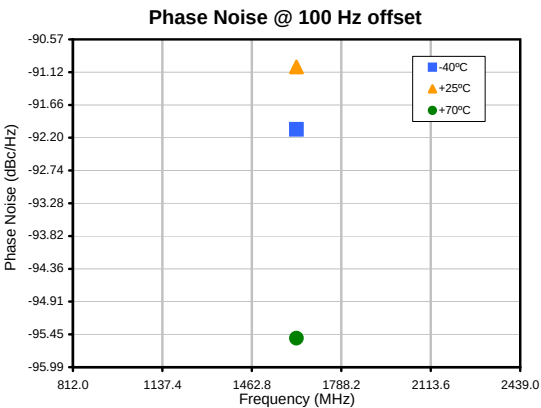
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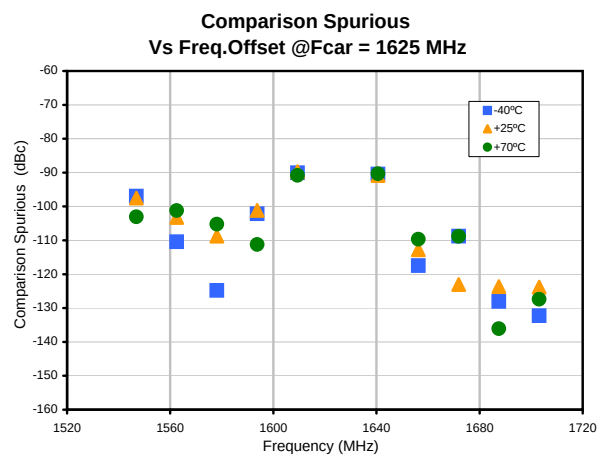
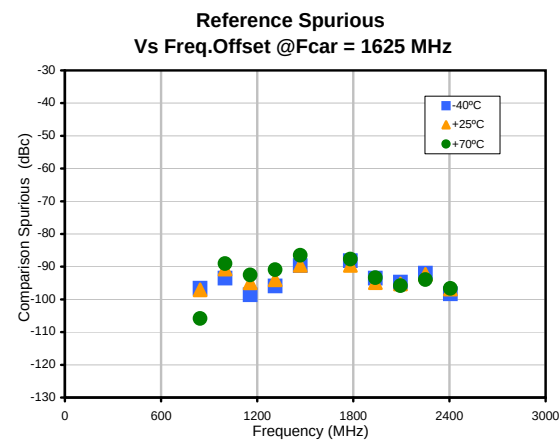
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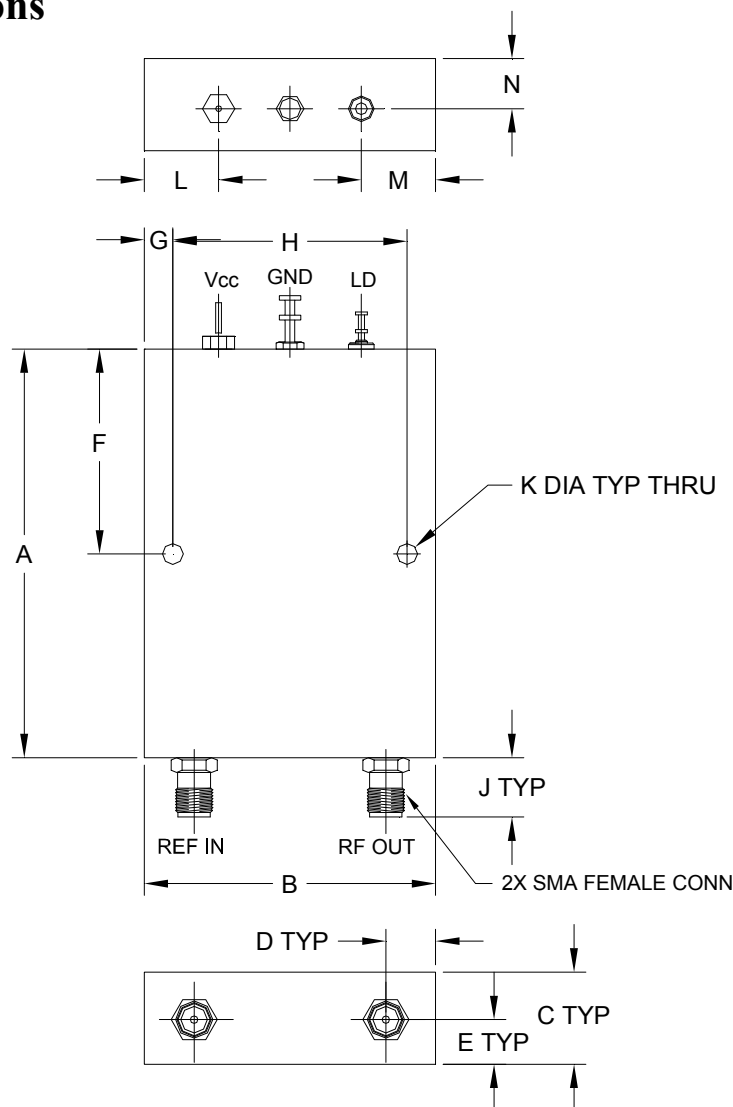
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CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N	WT, GRAM
KG1714	2.75 (69.85)	1.96 (49.78)	.62 (15.75)	.34 (8.64)	.30 (7.62)	1.38 (35.05)	.19 (4.83)	1.575 (40.00)	.40 (10.16)	.14 (3.56)	.50 (12.70)	.50 (12.70)	.34 (8.64)	135

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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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