

Engineering Development Model

Voltage Controlled Oscillator

UOS-EDR5218

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 : CZ682

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

ELECTRICAL SPECIFICATIONS 50Ω				
Parameter	Min.	Typ.	Max.	Units
Frequency	290		321	MHz
Tuning Voltage	0.5		3	V
Power Output		-1		dBm
Phase Noise	at 1 kHz offset	-86		dBc/Hz
	at 10 KHz offset	-107		dBc/Hz
	at 100 KHz offset	-128		dBc/Hz
	at 1000 kHz offset	-147		dBc/Hz
Pulling at 12 dBr PK-PK all phases		0.6		MHz
Pushing at Vcc=5V±0.25V		0.6		MHz/V
Tuning Sensitivity		16 - 32		MHz/V
Harmonic Suppression		-11.5	-7	dBc
3 dB Modulation Bandwidth		8700		kHz
Supply Voltage		3		V
Supply Current			15	mA

MAXIMUM RATINGS	
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Supply Voltage (Vcc)	+5V
Absolute Tuning Voltage (Vtune)	+5V

PIN CONNECTIONS	
RF OUT	10
VCC	14
V-TUNE	1
GROUND	2,4,6,7,8

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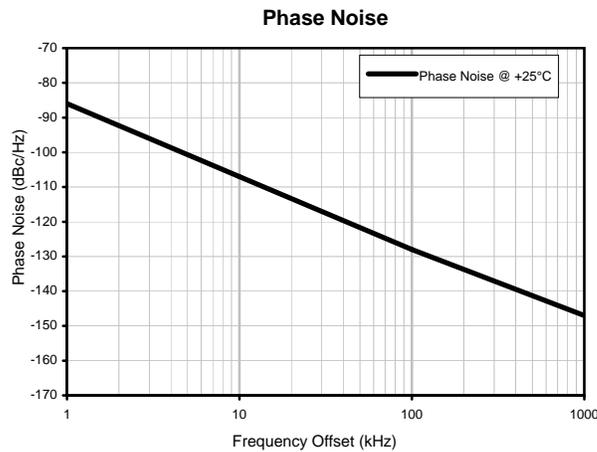
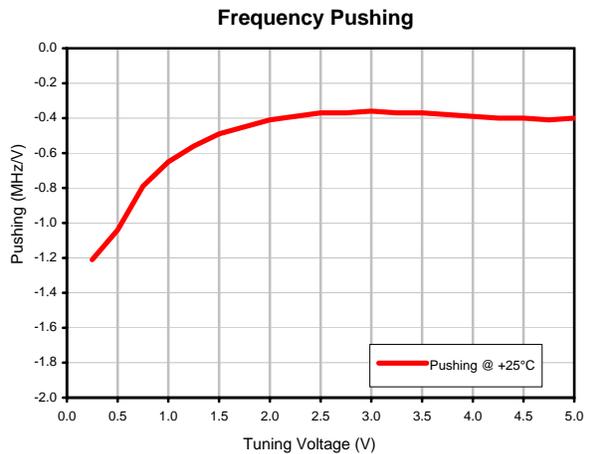
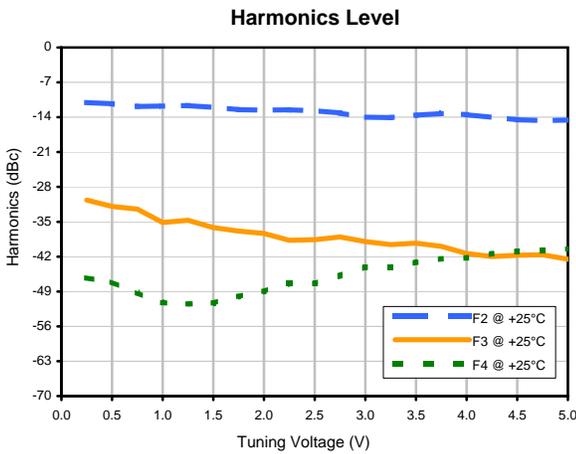
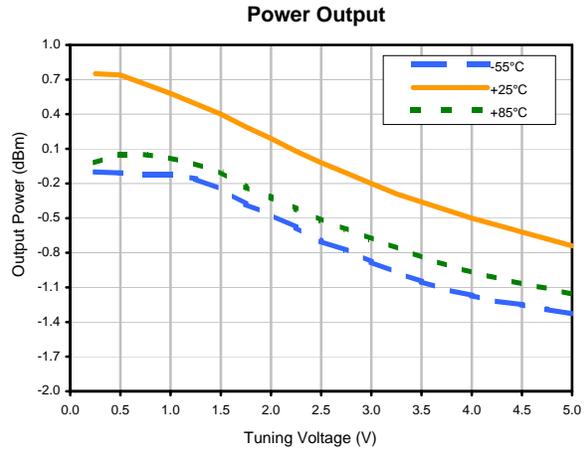
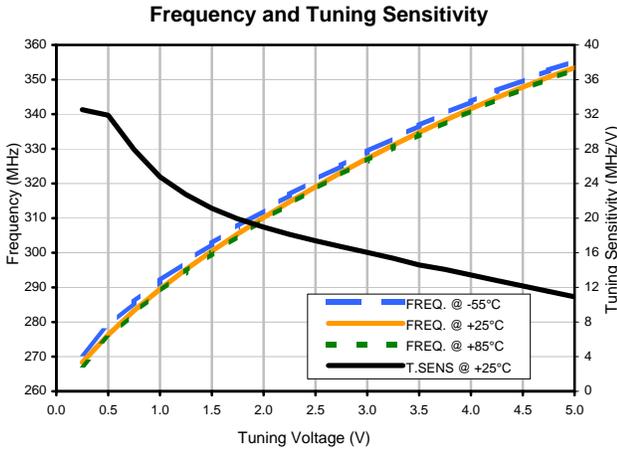
Typical Performance Data

V TUNE	TUNE SENS (MHz/V)	FREQUENCY (MHz)			POWER OUTPUT (dBm)			HARMONICS (dBc)			FREQ. PUSH (MHz/V)	FREQ OFFSET (KHz)	PHASE NOISE (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C	F2	F3	F4			
0.3	32.53	270.9	268.3	267.6	-0.10	0.75	-0.02	-11.1	-30.7	-46.3	-1.21	1 10 100 1000	-86 -107 -128 -147
0.5	31.87	278.8	276.3	275.5	-0.11	0.74	0.05	-11.3	-31.9	-47.1	-1.04		
0.8	27.93	285.7	283.3	282.6	-0.12	0.66	0.05	-11.9	-32.5	-49.2	-0.79		
1.0	24.76	291.8	289.5	288.8	-0.12	0.58	0.02	-11.8	-35.1	-51.2	-0.65		
1.3	22.73	297.4	295.2	294.5	-0.16	0.49	-0.03	-11.7	-34.7	-51.5	-0.56		
1.5	21.13	302.6	300.5	299.8	-0.25	0.40	-0.10	-12.0	-36.2	-51.3	-0.49		
1.8	19.92	307.5	305.4	304.8	-0.38	0.29	-0.23	-12.5	-36.9	-50.0	-0.45		
2.0	18.96	312.2	310.2	309.6	-0.47	0.19	-0.32	-12.6	-37.3	-49.0	-0.41		
2.3	18.12	316.7	314.7	314.1	-0.58	0.08	-0.42	-12.5	-38.7	-47.4	-0.39		
2.5	17.38	321.0	319.0	318.4	-0.70	-0.02	-0.52	-12.7	-38.6	-47.4	-0.37		
2.8	16.70	325.2	323.2	322.6	-0.78	-0.11	-0.60	-13.2	-38.1	-45.8	-0.37		
3.0	16.04	329.2	327.2	326.6	-0.88	-0.20	-0.68	-14.0	-39.0	-44.1	-0.36		
3.3	15.36	333.0	331.1	330.4	-0.97	-0.29	-0.76	-14.1	-39.6	-44.1	-0.37		
3.5	14.58	336.7	334.7	334.1	-1.05	-0.36	-0.84	-13.6	-39.3	-43.1	-0.37		
3.8	14.07	340.2	338.2	337.6	-1.12	-0.43	-0.91	-13.3	-39.9	-42.4	-0.38		
4.0	13.43	343.6	341.6	341.0	-1.17	-0.50	-0.97	-13.5	-41.4	-42.3	-0.39		
4.3	12.78	346.8	344.8	344.2	-1.22	-0.56	-1.02	-14.1	-42.0	-41.4	-0.40		
4.5	12.16	349.8	347.8	347.2	-1.25	-0.62	-1.07	-14.5	-41.7	-40.9	-0.40		
4.8	11.53	352.6	350.7	350.1	-1.29	-0.68	-1.11	-14.7	-41.6	-40.8	-0.41		
5.0	10.92	355.4	353.4	352.9	-1.33	-0.74	-1.16	-14.6	-42.5	-40.4	-0.40		

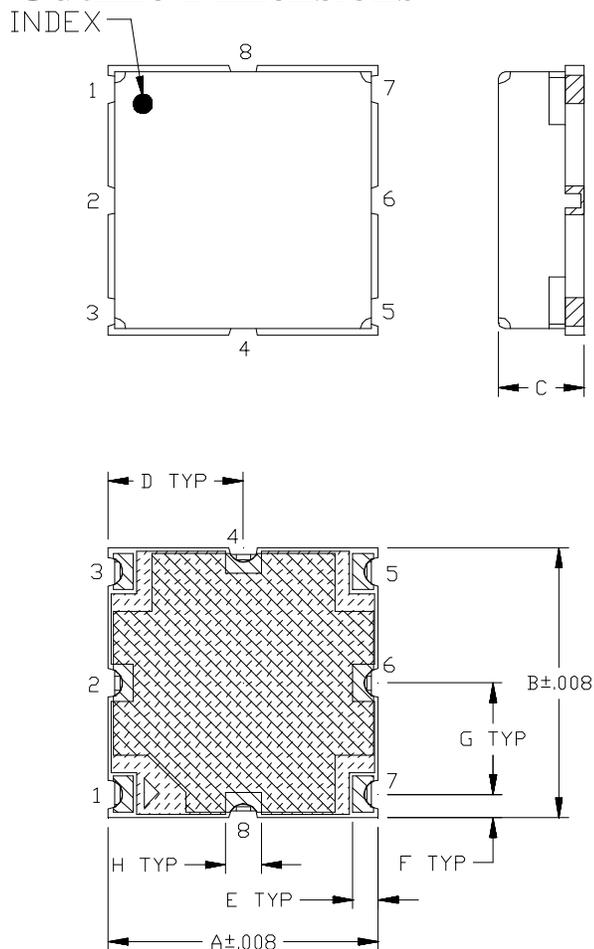
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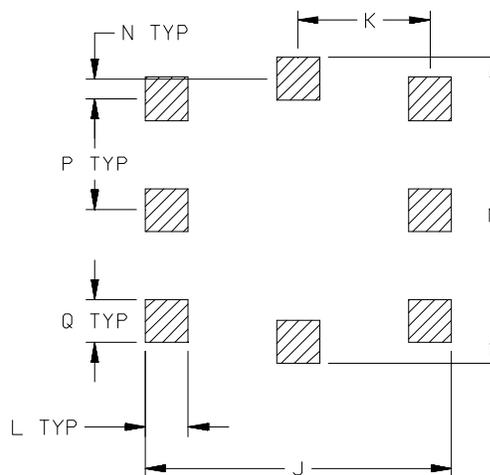
Typical Performance Data



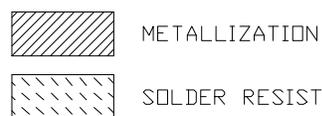
Outline Dimensions



PCB Land Pattern



Suggested Layout,
Tolerance to be within $\pm .002$



CASE #	A	B	C	D	E	F	G	H	J	K
CZ682	.375 (9.52)	.375 (9.52)	.131 (3.33)	.188 (4.77)	.035 (0.89)	.033 (0.84)	.154 (3.91)	.050 (1.27)	.425 (10.80)	.183 (4.65)

CASE #	L	M	N	P	Q	WT. GRAM
CZ682	.060 (1.52)	.425 (10.80)	.028 (0.71)	.154 (3.91)	.060 (1.52)	.60

Dimensions are in inches (mm). Tolerances: 2Pl. $\pm .03$; 3Pl. $\pm .010$

Notes:

1. Case material: Nickel-Silver alloy.
2. Base: Printed wiring laminate.
3. Termination finish:

For RoHS Case Styles: 3-5 μ inch (.08-.13 microns) Gold over 120-240 μ inch (3.05-6.10 microns) Nickel plate
For RoHS-5 Case Styles: Tin-Lead plate.



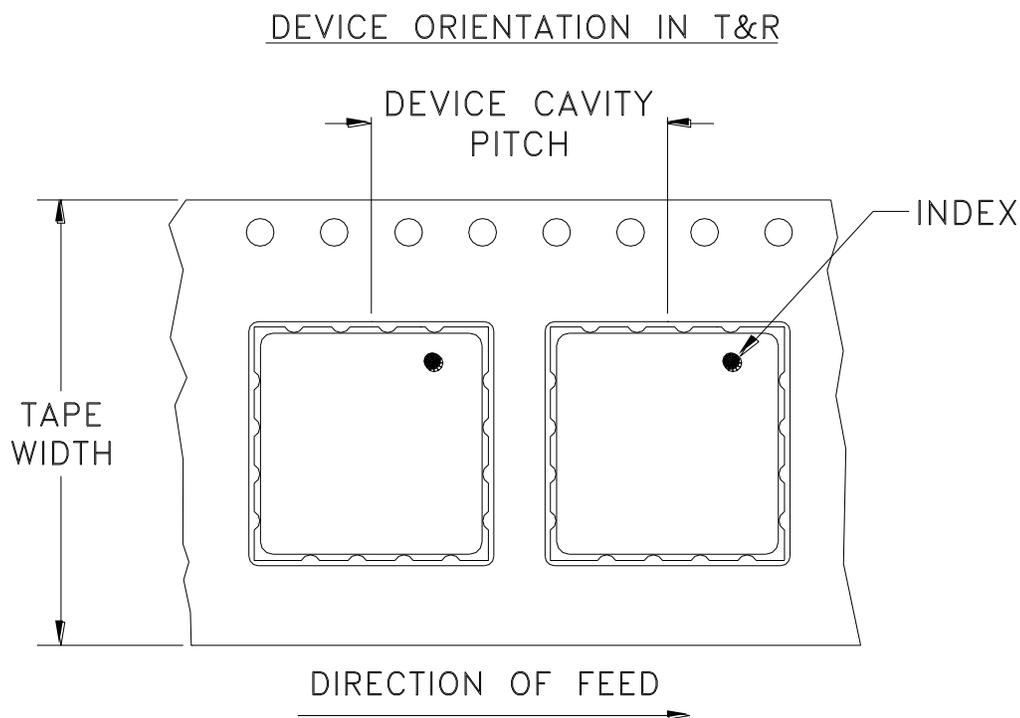
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Tape & Reel Packaging TR-F60



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel	
24	16	7	Small quantity standards (see note)	10
				20
				50
				100
		13	Standard	200
				500
				1000

Note: Please consult individual model data sheet to determine device per reel availability.

Mini-Circuits carrier tape materials provide protection from ESD (Electro-Static Discharge) during handling and transportation. Tapes are static dissipative and comply with industry standards EIA-481/EIA-541.

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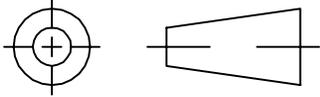
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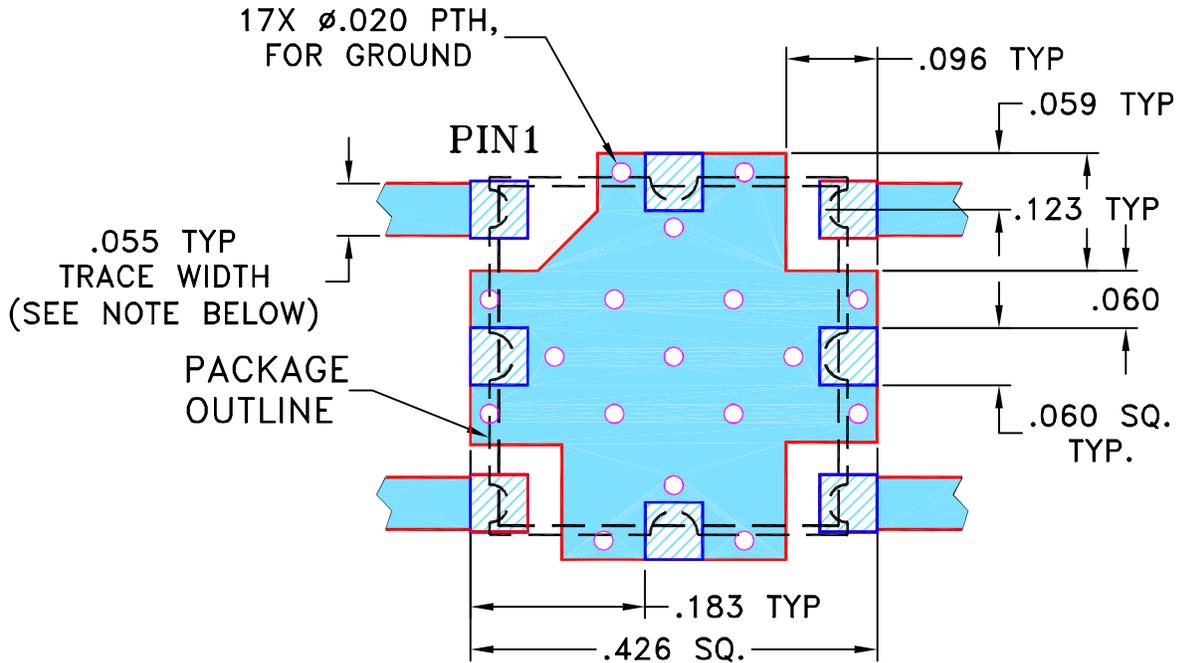
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M76040	NEW RELEASE (FROM RAVON)	03/01	DK	HH
A	M82575	UPDATED DRAWING	08/08/02	GF	MM
B	M101142	ADDED NOTE 2 & TB-128 TO DESCRIPTION	10/10/05	MMG	MM
C	M102713	ADDED "...WITH SMOBC"	01/12/06	GF	IL

SUGGESTED MOUNTING CONFIGURATION FOR CZ682 CASE STYLE, "my" PIN CONNECTION



- NOTE: 1. TRACE WIDTH IS SHOWN FOR FR4 WITH DIELECTRIC THICKNESS 0.030" ± 0.002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
 2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

UNLESS OTHERWISE SPECIFIED	INITIALS		DATE
DIMENSIONS ARE IN INCHES TOLERANCES ON: 2 PL DECIMALS ± 3 PL DECIMALS ± .005 ANGLES ± FRACTIONS ±	DRAWN	DK (RAV)	03/22/01
	CHECKED	DE (RAV)	03/27/01
	APPROVED	HH (RAV)	03/27/01

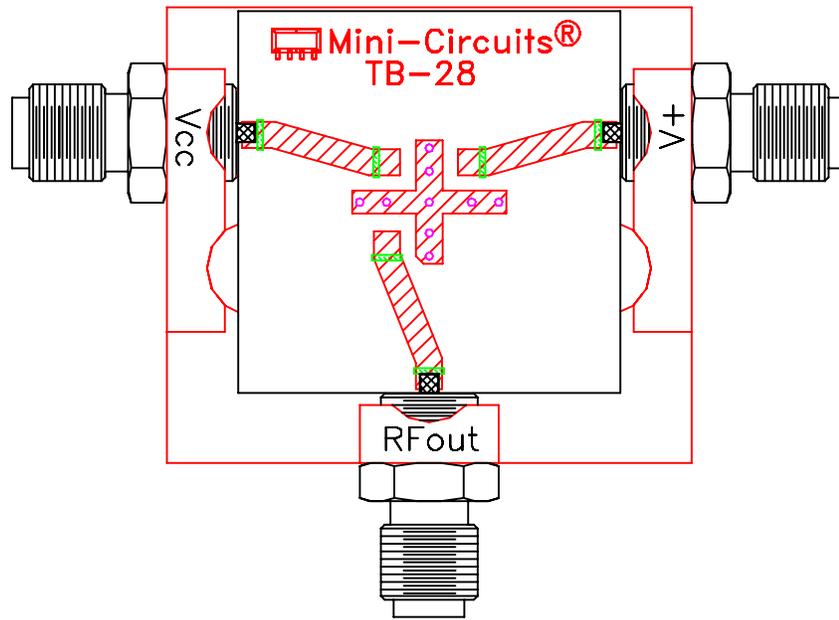
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PL, my, CZ682, MOS, TB-128

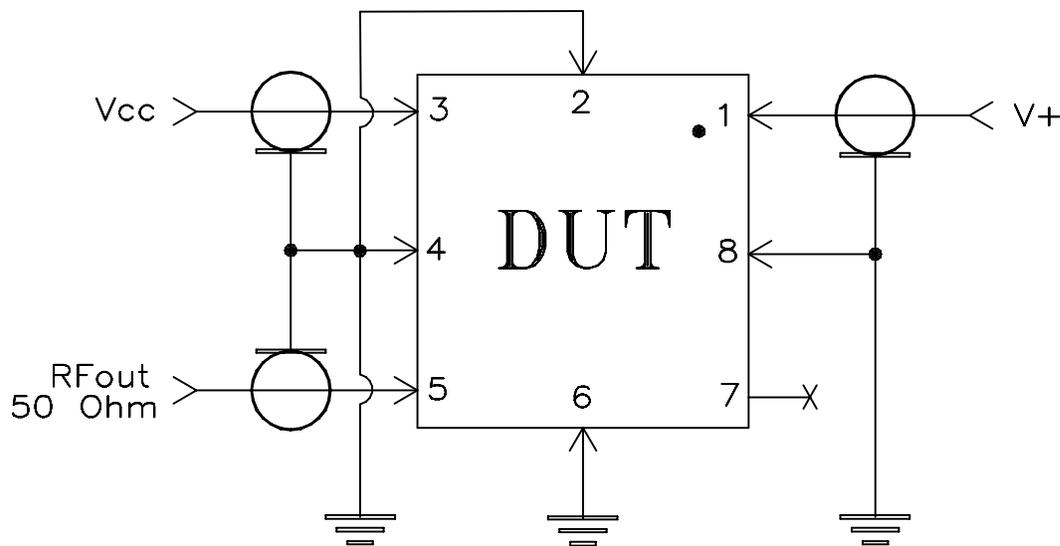
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SIZE A	CODE IDENT 15542	DRAWING NO: 98-PL-023	REV: C
FILE: 98PL023	SCALE: 5:1	SHEET: 1 OF 1	

Evaluation Board and Circuit



TB-28



Schematic Diagram

Notes:

1. SMA Female connectors.
2. PCB Material: Rogers R04350 or equivalent, Dielectric Constant=3.5, Thickness=.030 inch.

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