MICRO CRYSTAL SWITZERLAND

OCXO

Oven Controlled Crystal Oscillator

HC-MOS Output
12 V Power Supply

up to 54 MHz

FREQUENCY STABILITY

OVER:	
OPERATING TEMP. RANGE :	***see note 1***
LONG TERM AGING 1ST YEAR:	*< ±0.7 ppm **
10 YEARS:	*< ±4.0 ppm **
SUPPLY VOLTAGE ± 0.5 V	*< ±0.1 ppm **
LOAD ±10%:	*< ±0.01 ppm*

POWER SUPPLY

SUPPLY INPUT:	*Vcc = 12 V ±0.5 V **
INPUT CURRENT :	*< 30 mA @ +30 °C **
INPUT CURRENT :	*< 45 mA @ -20 °C **

FREQUENCY CONTROL RANGE

CONTROL VOLTAGE:	***See note 2***
FREQUENCY DEVIATION:	*> ±4 ppm **
RESPONSE SLOPE:	*positive*

OUTPUT

OUTPUT SIGNAL:	*HC-MOS compatible*
SYMMETRY:	*40 (min.) /60 (max.) % @ Vcc / 2 **
RISE AND FALL TIME:	*tr < 7ns tf < 7 ns **
LEVEL „0“ AND „1“:	*< 0.4 V > 5 V –0.5 V*
FAN OUT (LOAD):	*10 LS*

ENVIRONMENT

OPERABLE TEMP. RANGE:	*-40 to +85 °C*
STORAGE TEMP. RANGE:	*-65 to +125 °C*
VIBRATION:	*10 to 2000 Hz / 10 g*
SHOCK:	*2000 g, 0.3 ms, ½ sine*
PACKAGE:	*DIL 14, 4 pins, GND to case*
PACKAGE HEIGHT:	*8 mm (see packaging info)*

WARM-UP

ΔF/F:	*within spec after 30s @ 0 °C **
CURRENT:	*< 250 mA during 10s*

MISCELLANEOUS

SHORT TERM STABILITY:	*< 5 E-10 0.1 s to 30 s* *Typical 5 E-11 @ 1 s*
PHASE NOISE (BW = 1Hz): *(typical, @ 10MHz in static conditions)*	*10 Hz: - 90 dBc / Hz* *100 Hz: -120 dBc / Hz* *1 KHz: -130 dBc / Hz* *10 KHz: -135 dBc / Hz*

* *Customer's specification on request*

NOTE 1

	OCXO-AR1, AV5
TEMP. RANGE *	*0 to +60 °C*
STABILITY *	*±0.2 ppm (0.4 ppm peak to peak)*
	OCXO-BR1, BV5
TEMP. RANGE *	*-20 to +70 °C*
STABILITY *	*±0.3 ppm (0.6 ppm peak to peak)*
	OCXO-CR1, CV5
TEMP. RANGE *	*-40 to +85 °C*
STABILITY *	*±0.5 ppm (1 ppm peak to peak)*

NOTE 2

	OCXO-AR1, BR1, CR1
ADJUSTMENT WITH RESISTOR *(connected to ground)*	*0 to 10 kΩ*
INPUT IMPEDANCE	*> 4.7 kΩ*
	OCXO-AV5, BV5, CV5
ADJUSTMENT WITH VOLTAGE	*0 to 5 V*
INPUT IMPEDANCE	*> 47 kΩ*

MARKING EXAMPLE

Micro Crystal		**Micro Crystal**	
OCXO-BV5		*Type*	*Spec No.*
20.000 MHz	09.25	*Frequency*	*Date Code*
○	12	○ *(PIN 1)*	*Piece No.*

ORDERING INFORMATION EXAMPLE

O C X O _____ - B V 5 20 MHz x x x

Oscillator Type
OCXO = oven controlled Crystal Oscillator

Oscillator Version

Temperature Range
A = 0 to +60°C; +/-0.2ppm
B = -20 to +70°C: +/-0.3ppm
C = -40 to +85°C; +/-0.5ppm
X = custom spec.

Oscillator output frequency

Frequency Adjustment
R1 = external resistor
V5 = voltage 5V
Y = custom spec.

N° of customer spec.

STANDARD FREQUENCIES (MHz)

10.0000	*12.8000*	*16.0000*	*16.3840*	*19.4400*	*20.0000*
26.0000	*40.0000*	*50.0000*	*52.0000*		

In accordance with our policy of continuous development and improvement, we reserve the right to modify the design or the specifications of our products without prior notice.

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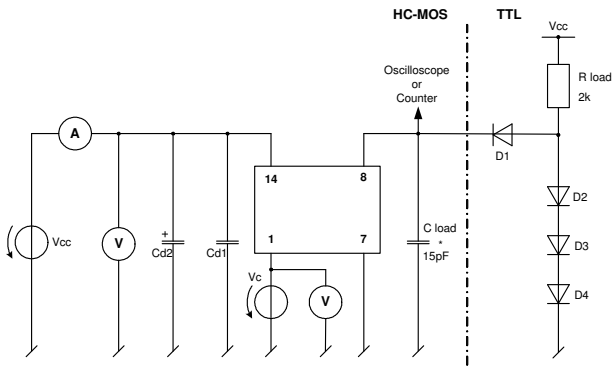
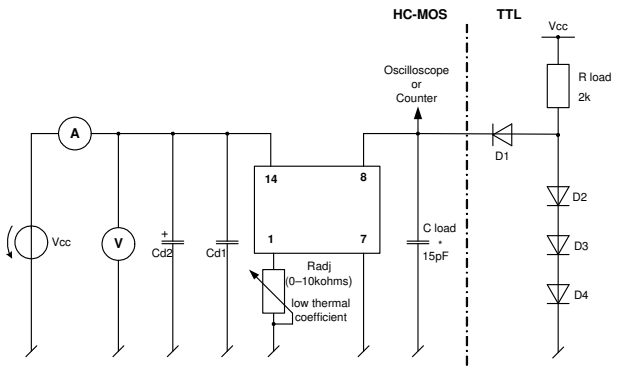
Application and Test Circuit:

Adjustment with voltage

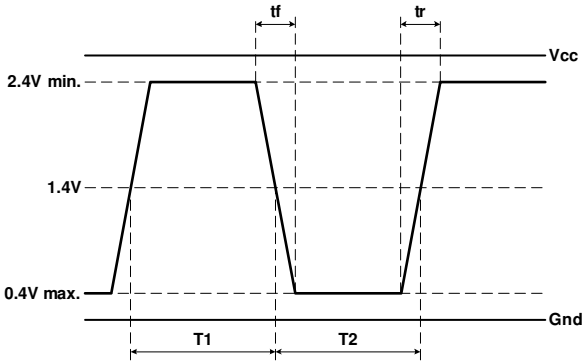


Adjustment with resistor

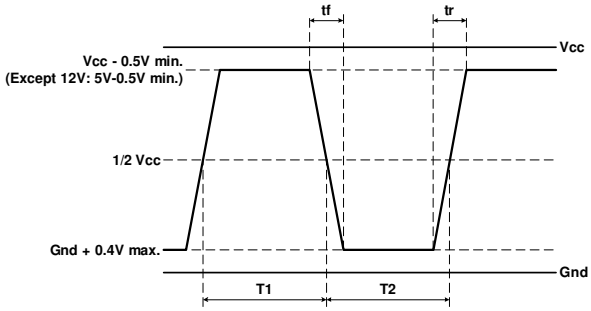


Waveform Output:

Waveshape TTL



Waveshape HC-MOS



$$Duty\ Cycle = 100 \times \frac{T1}{T1+T2}[\%]$$

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