



KXO-CS/KHO-CS Series Crystal Clock Oscillator

CMOS Drive - HCMOS Compatible - f_o : 500 KHz to 32 MHz

FEATURES

- 1) Wide frequency range (500 kHz to 32 MHz). 45 to 55% Duty Cycle is available (500 kHz to 16 MHz)
- 2) Stand-by function (low current consumption 0.1 mA typical on Standby function logic low).
- 3) At 16.0 MHz current consumption 3 mA (typical) is realized by using the newest HCMOS IC.
- 4) KHO-CS Series packaged in half-inch size 8 pin DIP

HOW TO ORDER

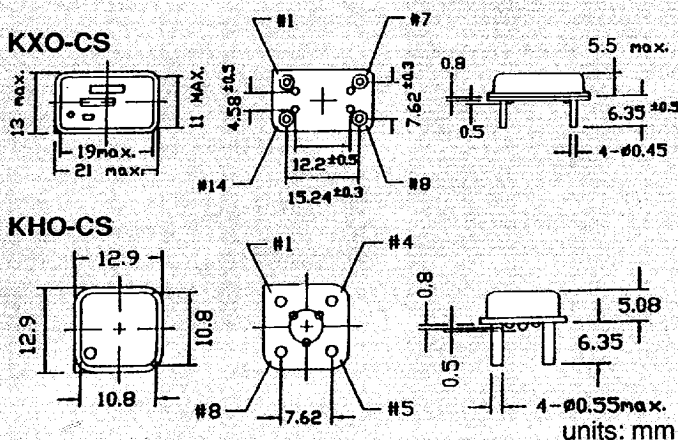
KXO-CS 1-S E-24.000M

- ① Type: KXO=14 Pin DIP; KHO=8 Pin DIP
 ② Frequency precision: 0 = ± 50 ppm
 1 = ± 100 ppm
 ③ Duty Cycle:
 Nil = 40 to 60% (1/2 V_{cc} level)
 S = 45 to 55% (1/2 V_{cc} level)
 ④ Stand-by Function (fixed): E = with function
 ⑤ Frequency

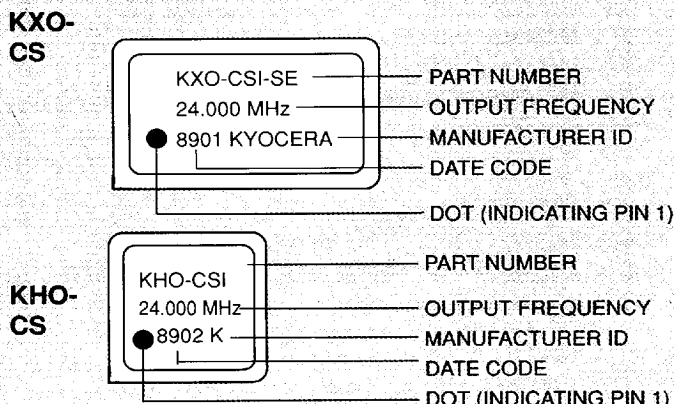
SPECIFICATIONS: (KXO-CS, KHO-CS)

Classification		Code	Rating	Unit	Remarks
Output Frequency		f_{out}	0.5M to 32M	Hz	
Frequency Precision		$\Delta f/f$	0 ± 50 1 ± 100	ppm ppm	0 to +70 4.5V to 5.5V
Operating Temperature Range		T_{opr}	0 to 70°C	°C	
Voltage		V_{cc}	5 \pm 0.5		
Output	Duty Cycle	S_y	40 to 60	%	1/2 V_{cc}
	"0" Level	V_{OL}	10% V_{cc} Max	V	At $I_{OL}=1.6mA$
	"1" Level	V_{OH}	90% V_{cc} Min	V	At $I_{OH}=-0.1mA$
	Rise and Fall Time	T_R, T_F	20 Max	nsec	10% V_{cc} to 90% V_{cc}
Input (Stand-by pin)	"0" Level	V_{IL}	20% V_{cc} Max	V	
	"1" Level	V_{IH}	80% V_{cc} Min	V	
	"0" Level	I_{IL}	-250 Max	μV	
	"1" Level	I_{IH}	10 Max	μA	
Standby Current Consumption		I_{stby}	250 Max	μA	
Fan Out			TTL 1 gate		CMOS LEVEL OK
Electrical Current Consumption		I_{cc}	18 Max 3 Max	mA μA	@ 32 MHz $C_L=15pF$ Output Disabled

DIMENSIONS:



MARKINGS:





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TEST CIRCUIT (KXO-CS)	SHAPE OF OUTPUT WAVE	PIN CONNECTION															
<p>CL=15pF max. (Inclusive of test jig and probe capacitance)</p>	<p>Duty Cycle = $\frac{A}{A+B}$</p>	<table border="1"> <thead> <tr> <th>KXO-CS</th> <th>KHO-CS</th> <th></th> </tr> </thead> <tbody> <tr> <td>1</td> <td>1</td> <td>N.C.</td> </tr> <tr> <td>7</td> <td>4</td> <td>CASE GND</td> </tr> <tr> <td>8</td> <td>5</td> <td>OUT PUT</td> </tr> <tr> <td>14</td> <td>8</td> <td>+5.0V D.C.</td> </tr> </tbody> </table>	KXO-CS	KHO-CS		1	1	N.C.	7	4	CASE GND	8	5	OUT PUT	14	8	+5.0V D.C.
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14	8	+5.0V D.C.															

STAND-BY FUNCTION CHART

#1 Pin	KXO: #8 Pin, KHO: #5 Pin
H or Open	Oscillation
L*	No oscillation

*Output logic low when inhibited