

CRYSTAL CONTROLLED OSCILLATORS

3.3V / 5.0V HCMOS CLOCK WITH TRI-STATE OUTPUT



SKO45R

DESCRIPTION

The Connor-Winfield SKO45R is a 3.3V / 5.0V HCMOS, Plastic, Fixed Frequency Crystal Oscillator (XO).

FEATURES

3.3V OR 5.0V OPERATION

OVERALL FREQUENCY TOLERANCE OF ± 100 ppm @ 3.3V OVER 10 YEARS.

OVERALL FREQUENCY TOLERANCE OF ± 100 ppm @ 5.0V OVER 10 YEARS.

PLASTIC SURFACE MOUNT PACKAGE

TAPE AND REEL PACKAGING

ORDERING INFORMATION

SKO45R - 16.00 MHz

CLOCK SERIES

CENTER FREQUENCY

ABSOLUTE MAXIMUM RATINGS

TABLE 1.0

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Storage Temperature		-50	-	125	°C	
Supply Voltage	(Vcc)	-0.5	-	7	Vdc	

OPERATING SPECIFICATIONS

TABLE 2.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Frequency Range	(Fo)	-	16.000 20.000	-	MHz	
Frequency Tolerance (3.3V)		-100	-	100	ppm	1
Supply Voltage (3.3V)	(Vcc)	3.0	3.3	3.6	Vdc	1
Supply Current (3.3V)	(Icc)	-	-	10	mA	
Frequency Tolerance (5.0V)		-50	-	50	ppm	
Supply Voltage (5.0V)	(Vcc)	4.5	5.0	5.5	Vdc	
Supply Current (5.0V)	(Icc)	-	-	25	mA	
Operating Temperature Range		-10	-	70	°C	

INPUT CHARACTERISTICS

TABLE 3.0

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Enable Voltage	(Vih)	2.2	-	-	Vdc	
Disable Voltage	(Vil)	-	-	0.8	Vdc	
Enable / Disable Time		-	-	100	nS	

HCMOS OUTPUT CHARACTERISTICS

TABLE 4.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
LOAD (3.3V)		-	-	15	pF	
Voltage (3.3V) (High)	(Voh)	2.97	-	-	Vdc	
(3.3V) (Low)	(Vol)	-	-	0.33	Vdc	
Current (3.3V) (High)	(Ioh)	-4	-	-	mA	
(3.3V) (Low)	(Iol)	-	-	4	mA	
LOAD (5.0V)		-	-	50	pF	
Voltage (5.0V) (High)	(Voh)	2.97	-	-	Vdc	
(5.0V) (Low)	(Vol)	-	-	0.33	Vdc	
Current (5.0V) (High)	(Ioh)	-16	-	-	mA	
(5.0V) (Low)	(Iol)	-	-	16	mA	
Duty Cycle at 50% of Vcc		40	50	60	%	
Rise / Fall Time 10% to 90%		-	-	5	nS	

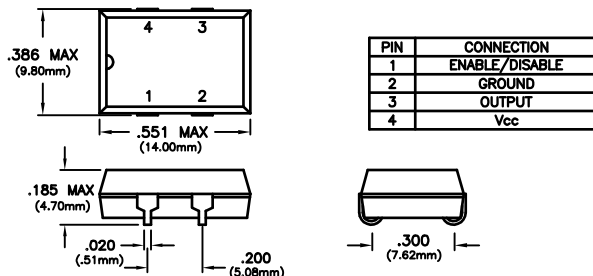
PACKAGE CHARACTERISTICS

TABLE 5.0

Package	Plastic Surface Mount Package
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Note:

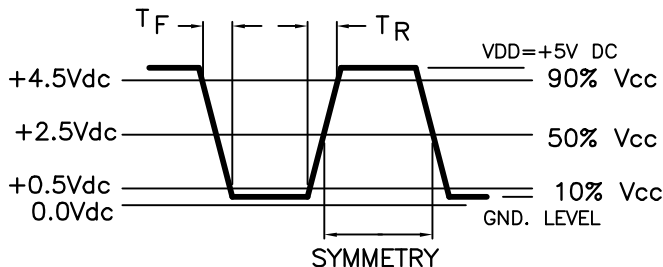
- Inclusive of calibration, frequency vs. temperature stability, supply voltage change, load change, shock and vibration, 10 years aging.



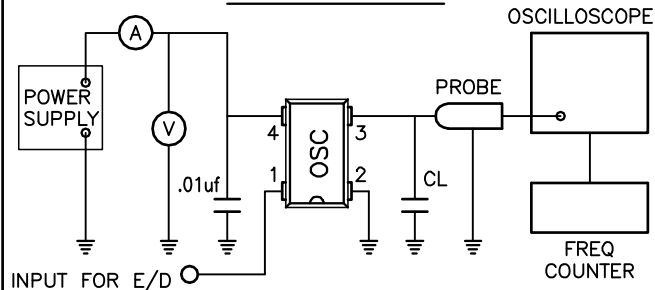
Specifications subject to change without notice.

CRYSTAL CONTROLLED OSCILLATORS

OUTPUT WAVEFORM



TEST CIRCUIT



MECHANICAL CHARACTERISTICS

FREE DROP:

The specimen shall meet electrical characteristics after tested 3 times Free Drop testing on the hard wooden board from a height of 75cm.

VIBRATION:

The specimen shall meet electrical characteristics after tested by the following conditions;
10-55Hz 1.5mm Amplitude, 55-2000Hz 20G's, 2 hours for each plane.

THERMAL SHOCK:

After applied Thermal Shock of 260 °C max x 10 sec max x 2 times, or 230 °C max x 180 sec max, the specimen shall meet electrical characteristics.

SOLDERABILITY: (EIAJ-RCX-0102/101 Condition 1a)

1. Flux: MIL-STD-14256 (WW Rosin=25%, Isopropyl alcohol=75%)
2. Solder: QQ-S-571 (Sn=63%, Pb=37%)
3. Solder bath temperature: 235 °C ±5 °C.
4. Depth of immersion: Up to electrical terminal.
5. Immersing time: Within 2 sec ±0.5 sec into solder bath.

After performing the above procedures, a newly soldered coverage shall be greater than 90%.

ENVIRONMENTAL CHARACTERISTICS

TEMPERATURE CYCLE:

The specimen shall meet electrical characteristics after tested 5 cycles of -55 °C/15 min & +125 °C/15 min.

HERMETICAL

No bubbles appear in Flourinert (FC-43) at 125 °C +/-5 °C, for 5 minutes.

SOLVENT RESISTANCE:

Marking will withstand immersion in Isopropyl Alcohol or Trichloroethylene.

SOLDERING

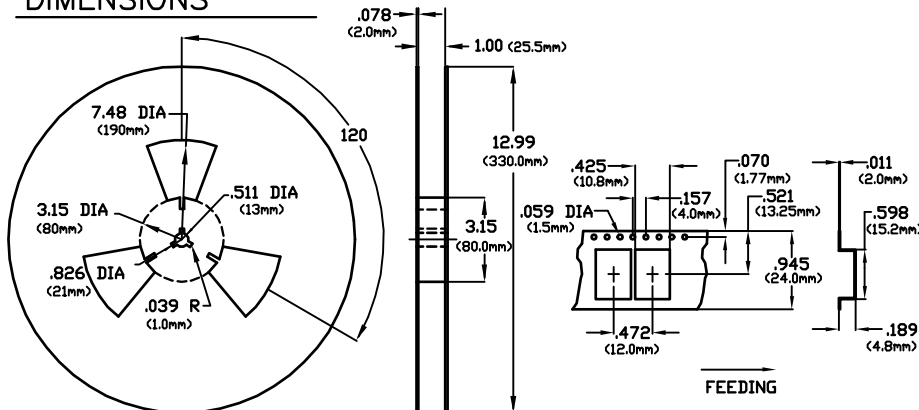
GENERAL CONDITIONS:

260 °C max x 10 sec max x 2 times max or
230 °C max x 180 sec max x 1 time.

TYPICAL OPERATION DATA (Vapor phase reflow)

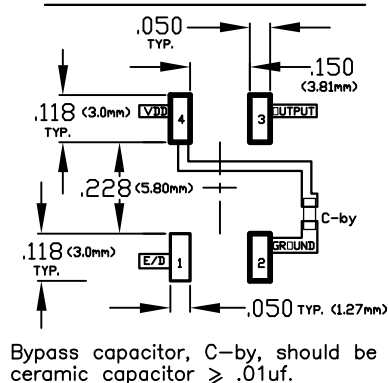
20 to 100 sec up to 215 °C, 50 sec at 215 °C then down to room temperature per 1 to 5 C/sec

TAPING AND REEL DIMENSIONS



MEETS EIA-481A AND EIAJ-1009B
1,000 PCS/REEL

SUGGESTED PAD LAYOUT



Bypass capacitor, C-by, should be ceramic capacitor ≥ .01uf.

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