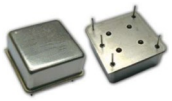
CARDINAL COMPONENTS

COSP5 Series
20 x 20mm HCMOS OCXO



COSP5 Series
20.6 x 20.6 x 11.0 mm
5 Pin Metal Package

Features

- Ovenized Quartz Crystal High Precision Oscillator
- 5.0V nominal Supply Voltage
- 5.0MHz - 40MHz Frequency Range
- Voltage control option available
- SC cut crystal

Applications

SONET / SDH / DWDM
Test & Measurement
Telecom Transmission & Switching Equipment
Base Stations / Picocell
Wireless Communication Equipment

Electrical Characteristics

Parameter	Min	Typ	Max	Unit	Condition
Frequency Range	5	-	40	MHz	Standard frequencies: 10, 12.8, 13, 15.36, 16.384, 19.2, 20, 25MHz
Frequency Stability vs Temperature	±10	-	±20	ppb	±5 ppb available over temp range 0 to 70°C
Frequency Stability vs Supply	-	-	±0.5	ppb	±5% voltage change
Warm-up	-	-	±50	ppb	In 3 minutes @ +25°C, referenced to 1 hour
Aging	-	-	±0.5	ppb	per day at time of shipment
	-	-	±50	ppb	per year
	-	-	±0.3	ppm	10 years
Operating Temperature Range	-40	-	+85	°C	
Supply Voltage [1] V_{CC}	4.75	5.0	5.25	V	3.3V input voltage available
Current	-	-	500	mA	@turn on
Steady State	-	-	1.0	W	@ 25°C
Spurious	-	-	-60	dBc	
Phase Noise 10 Hz 100 Hz 1 kHz 10 kHz	-	-115 -135 -145 -150	-	dBc/Hz	
Vcontrol Range * (Vc)	0	2	4	V	
Pullability *	±0.5	-	-	ppm	Slope positive
Vc Input Impedance *	100	-	-	kΩ	
Reference Voltage *	3.8	4.0	4.2	V	
Reference Voltage Load *	9	-	-	kΩ	
Storage Temperature Range	-55	-	+125	°C	

* Parameters apply only when options are selected.

Output Characteristics

Parameter	Min	Typ	Max	Unit	Condition
Output	HCMOS				
“1” Level	3.5	-	-	V	
“0” Level	-	-	0.5	V	
Load	-	15	-	pF	
Duty Cycle	45	50	55	%	@+2.0V

Note: [1] Place a 10nF power supply bypass capacitor next to device for correct operation

Product information is current as of publication date. The product conforms to specifications per the terms of the Cardinal standard warranty. Production processing does not necessarily include testing of all parameters.

Copyright © 2026, Cardinal Components Inc. • 19013 36th Ave. W, Lynnwood, WA 98036 USA • www.cardinalxtal.com • 973-785-1333

Device Marking

COSP5*xxx*
*xx.x*M
YMDz
S/N: *xxx*

COSP5*xxx* = Model number/Part number*
*xx.x*M = Frequency (M = MHz)
YMD = Date code (Year-Month-Day: See Table below)
z = Internal Factory Code
S/N: *xxx* = Serial number

* A unique number is assigned for your exact specifications.
Specifications such as part number, frequency stability, supply voltage and operating temperature range, etc. are not identified from marking.
External packaging labels and packing list will correctly identify the ordered Cardinal part number.

Codes for Date Code YMD (Year Month Day)

Code	6	7	8	9	0	Code	A	B	C	D	E	F	G	H	J	K	L	M
Year	2026	2027	2027	2029	2030	Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

Code	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T	U	V	W	X	Y	Z
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

Environmental / ESD Ratings

Reliability: Environmental

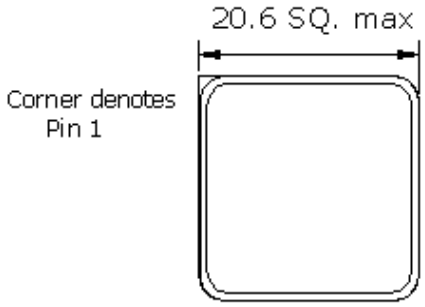
Parameter	Ref Standard	Condition
Solderability	MIL-STD-202, Method 208	
Mechanical Shock	MIL-STD-202, Method 213 Test Cond J	30g, 11ms, half-sine
Vibration	MIL-STD-202, Method 201	0.06” Total p-p, 10 to 55 Hz
Thermal Shock	MIL-STD-202, Method 107 Test Cond B	5 cycles -65 to +125 Deg C

Model	Min Voltage
Human Body Model	2000V
Machine Model	200V

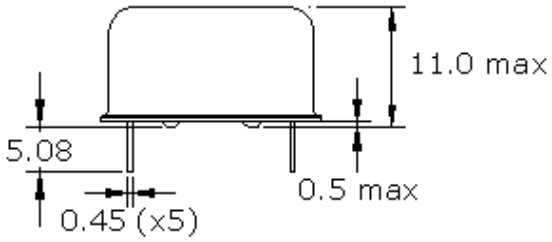
Cardinal Components Inc. certifies this device is in accordance with the RoHS (exemption 7c-i) and REACH directives.
Cardinal Components Inc. guarantees the device does not contain the following: Cadmium, Hexavalent Chromium, Mercury, PBB’s, PBDE’s, PFAS, PFOS
Moisture Sensitivity Level: 1 As defined in J-STD-020D
Second Level Interconnect code: e3

Copyright © 2026, Cardinal Components Inc. • 19013 36th Ave. W, Lynnwood, WA 98036 USA • www.cardinalxtal.com • 973-785-1333

Mechanical Dimensions

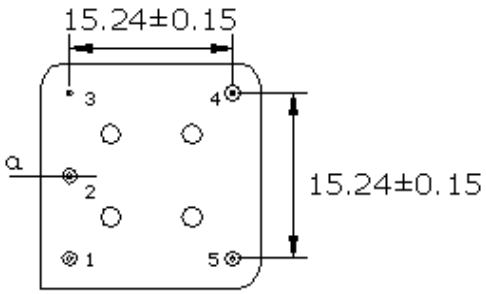


PIN CONNECTIONS (A)	
Pin	Function
1*	Vc input or N.C.
2*	Ref Voltage or N.C.
3	Ground/Case
4	Output
5	Vcc



PIN CONNECTIONS (B)	
Pin	Function
1	Vcc
2	Output
3	Ground/Case
4*	Vc Input or N.C.
5*	Ref Voltage or N.C.

* If not specified in parameters then not internally connected



Dimensions in mm

For Optimum Jitter Performance, Cardinal recommends:

- A ground plane under the device
- Do not route large transient signals (both current and voltage) under the device
- Do not place near a large magnetic field such as a high frequency switching power supply
- Do not place near piezoelectric buzzers or mechanical fans
- Minimize air flow across the device

Product information is current as of publication date. The product conforms to specifications per the terms of the Cardinal standard warranty. Aug 13, 2026 Rev. A
Production processing does not necessarily include testing of all parameters.
Copyright © 2026, Cardinal Components Inc. • 19013 36th Ave. W, Lynnwood, WA 98036 USA • www.cardinalxtal.com • 973-785-1333

Cardinal Components (CC) reserves the right to make corrections, improvements, modifications and other changes to its product at anytime. CC reserves the right to discontinue any product or service without notice. Customers are responsible for obtaining the latest relevant information before placing orders and should verify that such information is current and complete. All products are sold subject to CC's terms and conditions of sale supplied at the time of order acknowledgment.

Im-

CC warrants performance of this product to the specifications applicable at the time of sale in accordance with CC's limited warranty. Testing and other quality control techniques are used to the extent CC deems necessary to support this warranty. Except where mandated by specific contractual documents, testing of all parameters of each product is not necessarily performed.

CC assumes no liability for application assistance or customer product design. Customers are responsible for their products and applications using CC components. To minimize the risks associated with the customer products and applications, customers should provide adequate design and operating safeguards.

CC products are not designed, intended, authorized or warranted to be suitable for use in life support applications, weapons, weapon systems or space applications, devices or systems or other critical applications that may involve potential risks of death, personal injury or severe property or environmental damage. Inclusion of CC products in such applications is understood to be fully at the risk of the customer. Use of CC products in such applications requires the written approval of an appropriate CC officer. Questions concerning potential risk applications should be directed to CC.

CC does not warrant or represent that any license, either express or implied, is granted under any CC patent right, copyright, artwork or other intellectual property right relating to any combination, machine or process which CC product or services are used. Information published by CC regarding third-party products or services does not constitute a license from CC to use such products or services or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property of the third party, or a license from CC under the patents or other intellectual property of CC.

Reproduction of information in CC data sheets or web site is permissible only if the reproduction is without alteration and is accompanied by associated warranties, conditions, limitations and notices. Reproduction of this information with alteration is an unfair and deceptive business practice. CC is not responsible or liable for such altered documents.

Resale of CC products or services with statements different from or beyond the parameters stated by CC for that product or service voids all express and implied warranties for the associated CC product or service and is an unfair or deceptive business practice. CC is not responsible for any such statements.

Contacting Cardinal Components

Cardinal Components
19013 36th Ave. West
Lynnwood, WA 98036-5761
U.S.A.

Tel: 973-785-1333
Fax: 425-776-2760
email: sales@cardinalxtal.com
URL: www.cardinalxtal.com

Copyright © 2026, Cardinal Components Inc. • 19013 36th Ave. W, Lynnwood, WA 98036 USA • www.cardinalxtal.com • 973-785-1333