

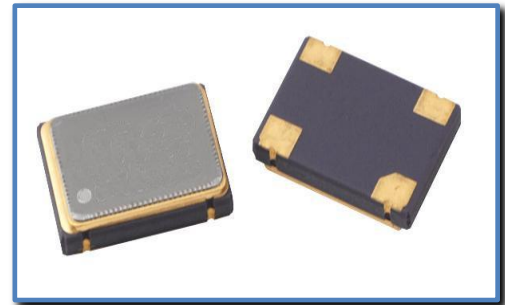


# CB PRODUCT FAMILY

## Surface Mount Clock Oscillator 2.5 x 2.0

### Features

- Ultra Small Package
- RoHS Compliant
- Low Supply Voltage to 1.8 VDC



### ❖ Specifications

Parameter		1.8 VDC	2.5 VDC	3.0 VDC	3.3 VDC
Frequency Range (MHz)		0.750 to 75.000			
Frequency Stability <sub>1</sub> over Temp Range		±25 ppm ±30 ppm		±50 ppm ±100 ppm	
Temperature Range	Operating	-20 °C to +70 °C			
	Extended	-40 °C to +85 °C			
	Storage	-40 °C to +85 °C			
Input	Voltage	+1.8 VDC	2.5 VDC	3.0 VDC	3.3 VDC
	Current	0.750 to 29.99 MHz: 2.5 mA max 30.00 to 39.99 MHz: 3.0 mA max 40.00 to 50.99 MHz: 3.5 mA max 51.00 to 75.00 MHz: 4.0 mA max	0.750 to 29.99 MHz: 4.5 mA max 30.00 to 39.99 MHz: 5.5 mA max 40.00 to 50.99 MHz: 6.5 mA max 51.00 to 75.00 MHz: 7.5 mA max	0.750 to 29.99 MHz: 5.5 mA max 30.00 to 39.99 MHz: 6.5 mA max 40.00 to 50.99 MHz: 7.5 mA max 51.00 to 75.00 MHz: 8.5 mA max	0.750 to 29.99 MHz: 2.5 mA max 30.00 to 39.99 MHz: 3.5 mA max 40.00 to 50.99 MHz: 4.5 mA max 51.00 to 75.00 MHz: 5.5 mA max
Output	Load	CMOS 15 pF			
	Symmetry	Tight: 45% to 55%			
	Logic "0" Level	10% Vdd max			
	Logic "1" Level	90% Vdd min			
	Rise/Fall Time (20% to 80%)	10 nsec max			
Enable/Disable Function		Pin 1: High or Open – Pin 3 Enabled Pin 1: Low – Pin 3 Disabled (High impedance)			
Start-up Time		10 msec max			
Shock		10 g, 0.35 msec, ½ sinewave with 3 shocks in 3 axis			

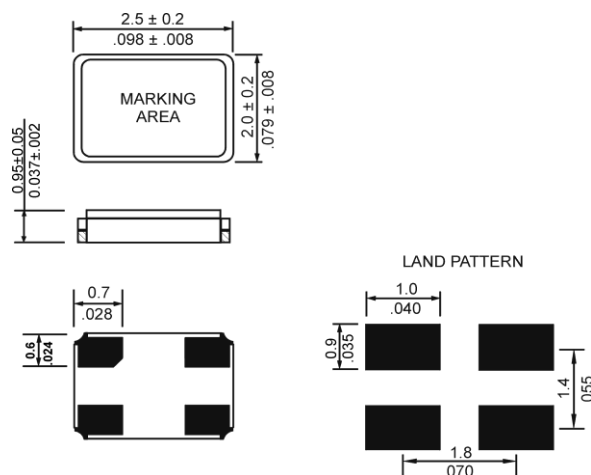
#### NOTES

<sup>1</sup>Not available at all frequencies. Contact factory.

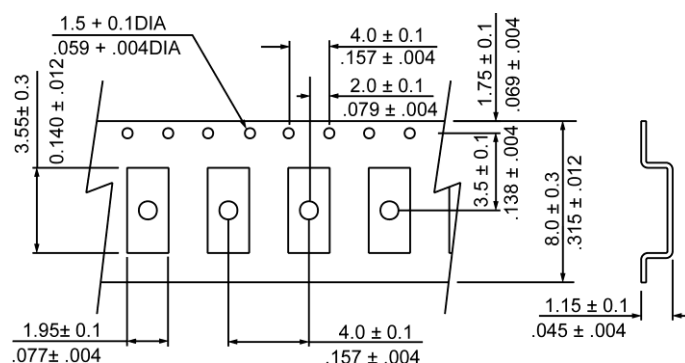


# CB PRODUCT FAMILY

## ❖ Mechanical Specification



## ❖ Carrier Tape Dimension



NOTE: REFER TO EIA-481 FOR DIMENSIONS

## ❖ Packaging

178 mm Reel Diameter  
8 mm Tape Width, 4 mm Pitch  
Quantity: 3000 pcs per Reel

## ❖ Part Numbering

CB	-	24.000	-	3.3	-	XXX
Product Family		Frequency (MHz)		Voltage (V)		1) Stability, 2) symmetry, 3) Temperature Range Stability: A= $\pm 25$ ppm, F= $\pm 30$ ppm, B=50 ppm, C=100 ppm Symmetry: blank = Normal (60/40), T = Tight Symmetry (45/55) Temperature range: blank standard, E=Extended Temp

### EXAMPLE: CB-24.000-3.3-C

Surface Mount Clock Oscillator, 2.5 x 2.0, 24.000 MHz, 3.3 volts, stability ( $\pm 100$  ppm), normal symmetry, standard Temperature range -10 °C to +70 °C

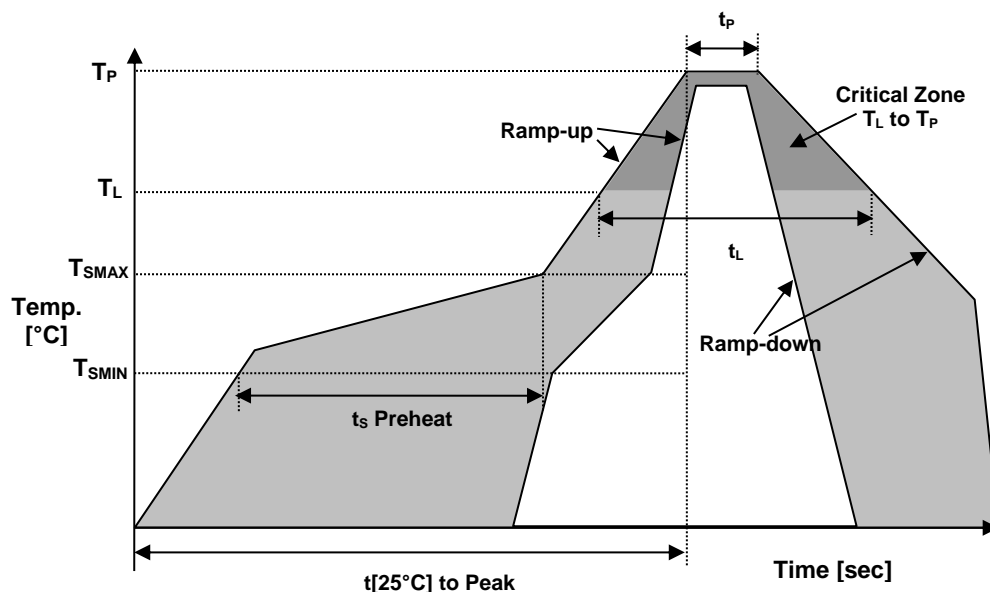
### EXAMPLE: CB-48.000-1.8-BTE

Surface Mount Clock Oscillator, 2.5 x 2.0, 48.000 MHz, 1.8 volts, stability ( $\pm 50$  ppm), tight symmetry, Extended Temperature range -40 °C to +85 °C



# CB PRODUCT FAMILY

## Reflow Profile



Reflow Profile (Reference IPC/JEDEC J-STD-020)		
Temperature Min Preheat	$T_{SMIN}$	150°C
Temperature Max Preheat	$T_{SMAX}$	200°C
Time ( $T_{SMIN}$ to $T_{SMAX}$ )	$t_s$	60 – 180 sec.
Temperature	$T_L$	217°C
Peak Temperature	$T_P$	260°C
Ramp-Up Rate	$R_{UP}$	3°C / sec. max
Ramp-Down Rate	$R_{DOWN}$	6°C / sec. max
Time within 5°C of Peak Temperature	$T_P$	10 sec.
Time $t[25^\circ\text{C}]$ to Peak Temperature	$t[25^\circ\text{C}]$ to Peak	480 sec.
Time	$T_L$	60 – 150 sec.

### ❖ Environmental

Parameter	Value
Moisture Sensitivity Level	1
RoHS	Compliant
REACH SVHC	Compliant
Halogen Free	Compliant
ESD Classification Level	H2 C6
Termination Finish	Au
Unit Weight (grams)	-

RS, Professionally Approved Products, gives you professional quality parts across all products categories. Our range has been testified by engineers as giving comparable quality to that of the leading brands without paying a premium price.



# CB PRODUCT FAMILY

## ● MARKING

RFF.FE  
•VTxyw

FF.FF – Frequency in MHz  
 E – Temperature Code (blank=Standard, E=Extended)  
 V – Voltage code  
 T – Tolerance Code  
 x – Internal Production ID code  
 y – Year code  
 w – Week code

VOLTAGE CODE	
Voltage	Code
1.8	1
2.5	2
3.0	3
3.3	4

TOLERANCE CODE	
CODE	TOL (ppm)
C	±100
B	±50
F	±30
A	±25

YEAR CODE	
Year	Code
2011	1
2012	2
2013	3
2014	4
2015	5
2016	6
2017	7
2018	8
2019	9
2020	0

ALPHA WEEK CODE					
Week	Code	Week	Code	Week	Code
1	a	19	s	37	K
2	b	20	t	38	L
3	c	21	u	39	M
4	d	22	v	40	N
5	e	23	w	41	O
6	f	24	x	42	P
7	g	25	y	43	Q
8	h	26	z	44	R
9	i	27	A	45	S
10	j	28	B	46	T
11	k	29	C	47	U
12	l	30	D	48	V
13	m	31	E	49	W
14	n	32	F	50	X
15	o	33	G	51	Y
16	p	34	H	52	Z
17	q	35	I		
18	r	36	J		

## ● APPROVAL

DRAWN BY	FP, 18 May 2017
APPROVED BY	FP, 18 May 2017
REVISION	A, Initial Release

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