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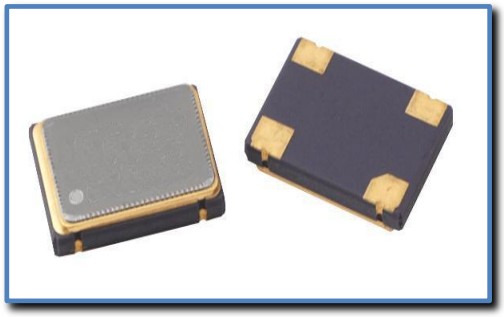
Surface Mount Clock Oscillator 7.0 x 5.0

Features

- **Ultra-Small Package**
- **RoHS Compliant**
- **Excellent for High Density Surface Mounting**



❖ Specifications

Parameter			Value	Value	Value		Value		Value	Value	Value
Type			A	B	C		D		E	F	G
Frequency Range (MHz)			1.00 to 50.00	50.001 to 156.250	1.00 to 33.00	33.01 to 50.00	50.01 to 70.00	70.01 to 156.25	50.01 to 125.00	1.000 to 50.000	
Frequency Stability over Temperature			±100 ppm ±50 ppm ±25 ppm ±20 ppm		±100 ppm ±50 ppm ±32 ppm ±25 ppm				±100 ppm ±50 ppm ±25 ppm ±20 ppm		
Temperature Range	Operating		-10 °C to +70 °C		-20 °C to +70 °C				-10 °C to +70 °C		
	Extended		-40 °C to +85 °C		-40 °C to +85 °C				-40 °C to +85 °C		
	Storage		-55 °C to +125 °C		-50 °C to +125 °C				-55 °C to +125 °C		
Input	Voltage		+3.3 VDC ±10%						+5.0 VDC ±10%		
	Current		25 mA max	45 mA max	12 mA max	25 mA max	35 mA max	60 mA max	50 mA max	25 mA max	45 mA max
Output	Load		5 TTL max or 20 pF	5 TTL max or 15 pF	15 pF to 50 pF	15 pF to 30 pF		15 pF		10 LS TTL max or 15 pF	10 TTL max or 50 pF
	Symmetry		Normal: 40% to 60% Tight: 45% to 55%								
	Level	Logic "0"	0.4 VDC max	0.5 VDC max	10% Vdd max				0.5 VDC max	0.5 VDC max	
		Logic "1"	2.8 VDC min	2.8 VDC min	90% Vdd min				4.0 VDC min	0.9 x Vcc min	
		Standby	n/a		10 µA max				n/a		
	Rise/Fall Time (20% to 80%)		1.0 to 10.00 MHz: 5 nsec 10.10 to 30.00 MHz: 4 nsec 30.10 to 50.00 MHz: 3 nsec 50.10 to 80.00 MHz: 2.5 nsec 80.1 to 156.25 MHz: 2 nsec		4 nsec	3 nsec	2.5 nsec	2 nsec	1.0 to 10.00 MHz: 5 nsec 10.10 to 30.00 MHz: 4 nsec 30.10 to 50.00 MHz: 3 nsec		
Enable/Disable Function			Pin1: HIGH (2.2 Vdc min) Pin3: Enabled Pin1: LOW (0.8 Vdc max) Pin3:Disabled (High impedance)								
Start-up Time			n/a		10 msec max				n/a		
Shock			10 g, 0.35 msec, ½ sinewave with 3 shocks in 3 axis								

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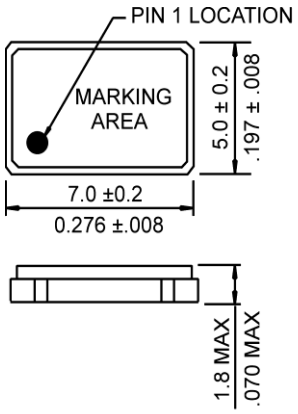
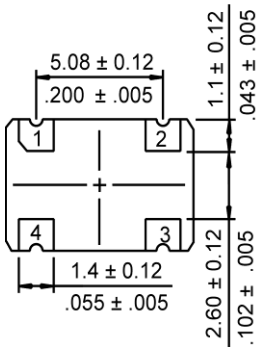
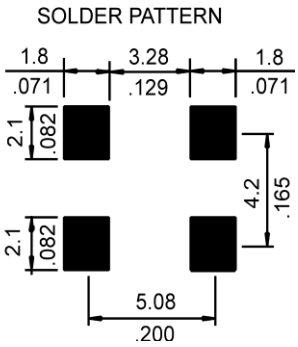
❖ Mechanical Specification



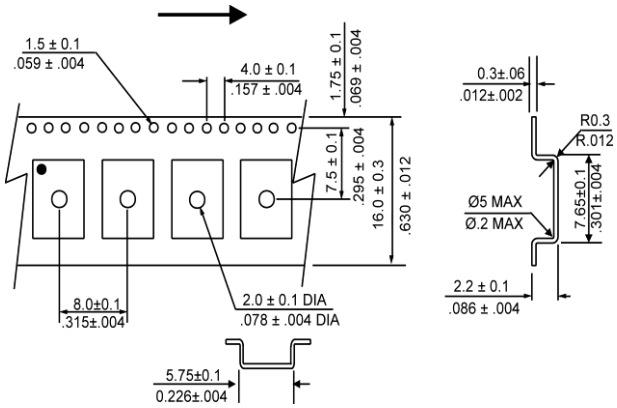
PIN CONNECTION

PIN	FUNCTION
1	E/D
2	GROUND
3	OUTPUT
4	Vcc





❖ Carrier Tape Dimension



NOTE: REFER TO EIA-481 FOR DIMENSIONS

❖ Packaging

254 mm Reel Diameter
16 mm Tape Width, 8 mm Pitch
Quantity: 1000 or 3000 pcs per Reel

❖ Part Numbering

CC	-	A	-	24.000	-	3.3	-	XXX
Product Family		Type		Frequency (MHz)		Voltage (V)		1) Stability, 2) symmetry, 3) Temperature Range Stability: C=±100 ppm, B=±50 ppm, F=±30 ppm, A=±25 ppm, D=±20 ppm, E=±10 ppm Symmetry: blank = Normal (60/40), T = Tight Symmetry (45/55) Temperature range: blank standard, E=Extended Temp

EXAMPLE: CC-A-24.000-3.3-C
Surface Mount Clock Oscillator, 7.0 x 5.0, Type "A", 24.000 MHz, 3.3 volts, stability (±100 ppm), normal symmetry, standard Temperature range -10 °C to +70 °C

EXAMPLE: CC-E-48.000-5-BTE
Surface Mount Clock Oscillator, 7.0 x 5.0, Type "E", 48.000 MHz, 5.0 volts, stability (±50 ppm), tight symmetry, Extended Temperature range -40 °C to +85 °C

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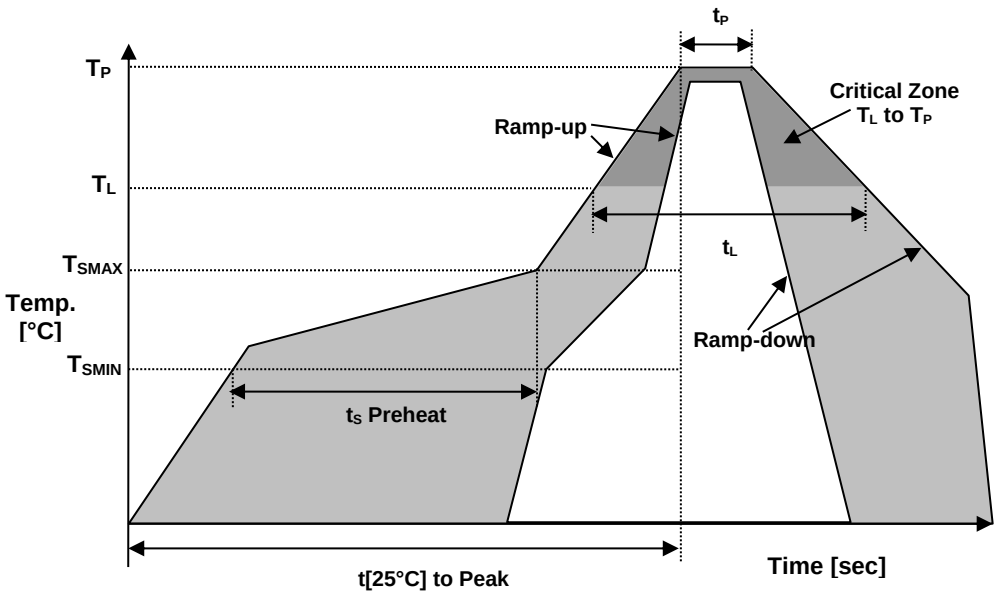
Reflow Profile



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°C] to Peak Temperature	t[25°C] to Peak	480 sec.
Time	T_L	60 – 150 sec.

❖ Environmental

Parameter	Value
Moisture Sensitivity Level	1
RoHS	Complaint
REACH SVHC	Compliant
Halogen Free	Compliant
ESD Classification Level	H2 C6
Termination Finish	Au
Unit Weight (grams)	0.155

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MARKING

RxFF.FFFS
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FF.FF – Frequency in MHz
x – Internal Production ID code
S – Symmetry Code (blank=Normal, T=Tight)
a – Type code
T – Tolerance Code
E – Temperature Code (blank=Standard, E=Extended)
y – Year code
w – Week code

TYPE CODE	
TYPE	Code
A	3
B	6
C	3
D	6
E	7
F	8
G	9

TOLERANCE CODE	
CODE	TOL (ppm)
E	±10
D	±20
A	±25
F	±30
B	±50
C	±100

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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