

### Product Features:

- Low Cost SMD Package
- Low ESR
- Compatible with Leadfree Processing

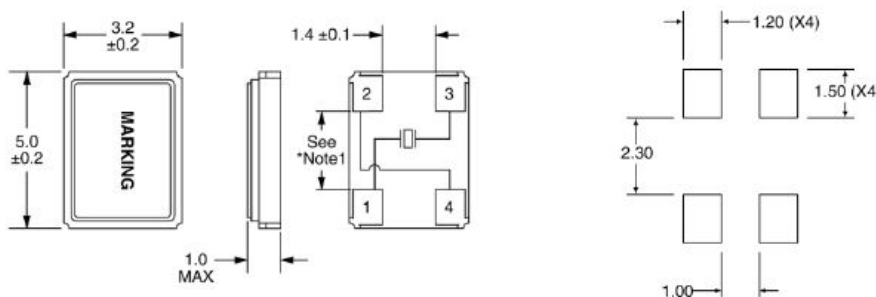
### Applications:

- Fibre Channel
- Server & Storage
- Sonet / SDH
- 802.11 / WiFi
- T1/E1, T3/E3

### Electrical Specifications:

<b>Frequency</b>	8MHz to 150MHz
<b>Equivalent Series Resistance</b>	
<b>Fundamental</b>	
8MHz – 9.999999MHz	100 Ohms Maximum
10MHz – 11.999999MHz	80 Ohms Maximum
12MHz – 15.999999MHz	60 Ohms Maximum
16MHz – 19.999999MHz	50 Ohms Maximum
20MHz – 23.999999MHz	40 Ohms Maximum
24MHz – 50MHz	30 Ohms Maximum
<b>Third Overtone</b>	
30MHz – 150MHz	80 Ohms Maximum
<b>Shunt Capacitance (C0)</b>	5pF Maximum
<b>Frequency Tolerance (at 25°C)</b>	±50ppm, ±30ppm, ±25ppm, ±20ppm, ±15ppm, or ±10ppm
<b>Frequency Stability (over Temperature)</b>	±50ppm, ±30ppm, ±25ppm, ±20ppm, ±15ppm, or ±10ppm
<b>Mode of Operation</b>	
8MHz – 50MHz	Fundamental
30MHz – 150MHz	Third Overtone
<b>Crystal Cut</b>	AT Cut
<b>Load Capacitance</b>	8pF to 32pF or Specify
<b>Drive Level</b>	100µW Maximum
<b>Aging</b>	±5ppm/Year Maximum
<b>Operating Temperature Range</b>	See Part Number Guide
<b>Storage Temperature Range</b>	-40°C to +85°C

### Mechanical and Solder Pad Dimensions:



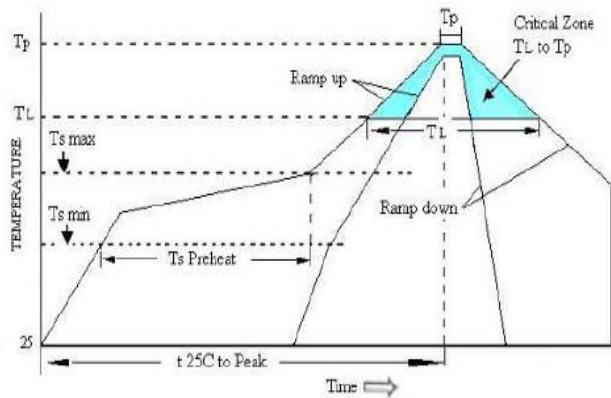
Pin Connections	
Pin 1	Crystal
Pin 2	Cover/Ground
Pin 3	Crystal
Pin 4	Cover/Ground

**Dimension Units: mm**  
 Note: Chamfer not shown  
 \*Note 1: 2.6±0.1mm (<=10MHz)  
 2.4±0.1mm (>10MHz)

Part Number Guide						
Sample Part Number: ILCX07 – FB1F18 – 20.000 MHz						
Package	Frequency Tolerance	Frequency Stability	Operating Temperature Range	Mode of Operations	Load Capacitance	Frequency
ILCX07 -	B = ±50ppm	B = ±50ppm	0 = 0°C to +50°C	F = Fundamental	8pF to 32pF or Specify	20.000 MHz
	F = ±30ppm	F = ±30ppm	1 = 0°C to +70°C	3 = Third Overtone		
	G = ±25ppm	G = ±25ppm	2 = -10°C to +60°C			
	H = ±20ppm	H = ±20ppm	3 = -20°C to +70°C			
	I = ±15ppm	I = ±15ppm*, **	5 = -40°C to +85°C			
	J = ±10ppm*	J = ±10ppm*, **	9 = -10°C to +50°C			
			D = -10°C to +105°C*			
		E = -40°C to +105°C*				

\* Not available at all frequencies. \*\* Not available for all temperature ranges.

## Pb Free Solder Reflow Profile:



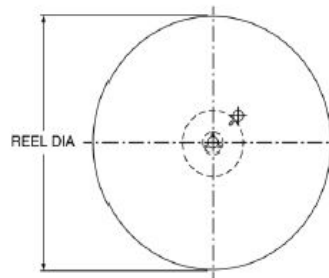
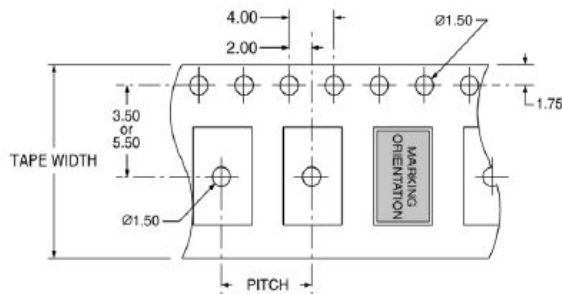
Ts max to TL (Ramp-up Rate)	3°C / second max
Preheat	
Temperature min (Ts min)	150°C
Temperature typ (Ts typ)	175°C
Temperature max (Ts max)	200°C
Time (Ts)	60 to 180 seconds
Ramp-up Rate (TL to Tp)	3°C / second max
Time Maintained Above Temperature (TL)	217°C
Time (TL)	60 to 150 seconds
Peak Temperature (Tp)	260°C max for 10 seconds
Time within 5°C to Peak Temperature (Tp)	20 to 40 seconds
Ramp-down Rate	6°C / second max
Time 25°C to Peak Temperature	8 minutes max

\*Units are backward compatible with +240°C reflow processes

## Package Information:

MSL = 1 (package does not contain plastic, storage life is unlimited under normal room conditions).  
Termination = e4 (Au over Ni over W base metallization).

## Tape and Reel Information:



PITCH	8.00
TAPE WIDTH	12.00
REEL DIA	180
QTY PER REEL	1,000

Dimensions Units: mm