

## Product Features:

- SMD Package
- Small package Footprint
- Supplied in Tape and Reel
- Compatible with Leadfree Processing
- Fundamental Mode up to 60MHz

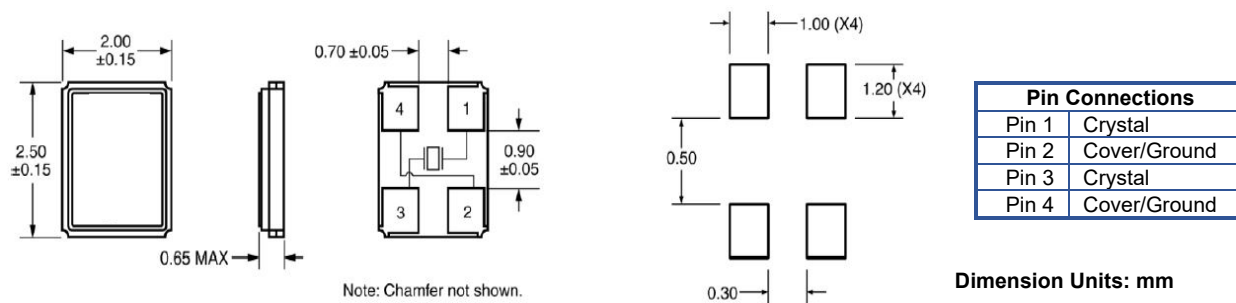
## Applications:

- PCMCIA Cards
- Storage
- PC's
- GSM Cell Phone
- Wireless Lan
- USB
- GSM Cell Phone

## Electrical Specifications:

<b>Frequency</b>	12MHz to 60MHz
<b>Equivalent Series Resistance</b>	
12MHz – 19.999999MHz	100 Ohms Maximum
20MHz – 29.999999MHz	80 Ohms Maximum
30MHz – 39.999999MHz	60 Ohms Maximum
40MHz – 60MHz	40 Ohms Maximum
<b>Shunt Capacitance (C0)</b>	3.5pF 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>	Fundamental
<b>Crystal Cut</b>	AT Cut
<b>Load Capacitance</b>	8pF to 32pF or Specify
<b>Drive Level</b>	100µW Maximum
<b>Aging</b>	±3ppm/Year Maximum
<b>Operating Temperature Range</b>	See Part Number Guide
<b>Storage Temperature Range</b>	-40°C to +125°C

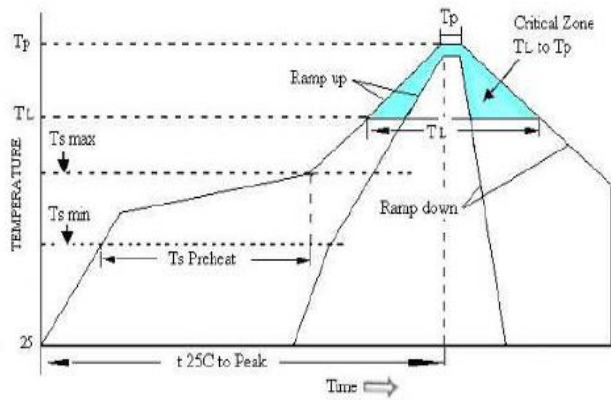
## Mechanical and Solder Pad Dimensions:



Part Number Guide		Sample Part Number: ILCX18 - FB1F18 - 20.000 MHz				
Package	Frequency Tolerance	Frequency Stability	Operating Temperature Range	Mode of Operations	Load Capacitance	Frequency
ILCX18 -	B = ±50 ppm	B = ±50 ppm	0 = 0°C to +50°C	F = Fundamental	8pF to 32pF or Specify	-20.000MHz
	F = ±30 ppm	F = ±30 ppm	1 = 0°C to +70°C			
	G = ±25 ppm	G = ±25 ppm	2 = -10°C to +60°C			
	H = ±20 ppm	H = ±20 ppm	3 = -20°C to +70°C			
	I = ±15 ppm	I = ±15 ppm**	5 = -40°C to +85°C			
	J = ±10 ppm*	J = ±10 ppm**	8 = -30°C to +85°C			
			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 T <sub>L</sub> (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 (T <sub>L</sub> to T <sub>p</sub> )	3°C / second max
Time Maintained Above Temperature (T <sub>L</sub> )	217°C
Time (T <sub>L</sub> )	60 to 150 seconds
Peak Temperature (T <sub>p</sub> )	260°C max for 10 seconds
Time within 5°C to Peak Temperature (T <sub>p</sub> )	20 to 40 seconds
Ramp-down Rate	6°C / second max
Time 25°C to Peak Temperature	8 minutes max

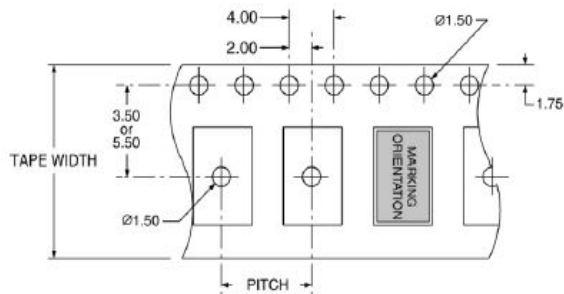
Units are backward compatible with +240°C reflow processes

## Package Information:

MSL = 1

Termination = e4 (Au over Ni over W base metallization).

## Tape and Reel Information:



PITCH	4.00
TAPE WIDTH	8.00
REEL DIA	180
QTY PER REEL	3,000

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