4 Pad Ceramic Crystal, 2.5mm x 2.0mm

ILCX18 Series

Product Features:

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

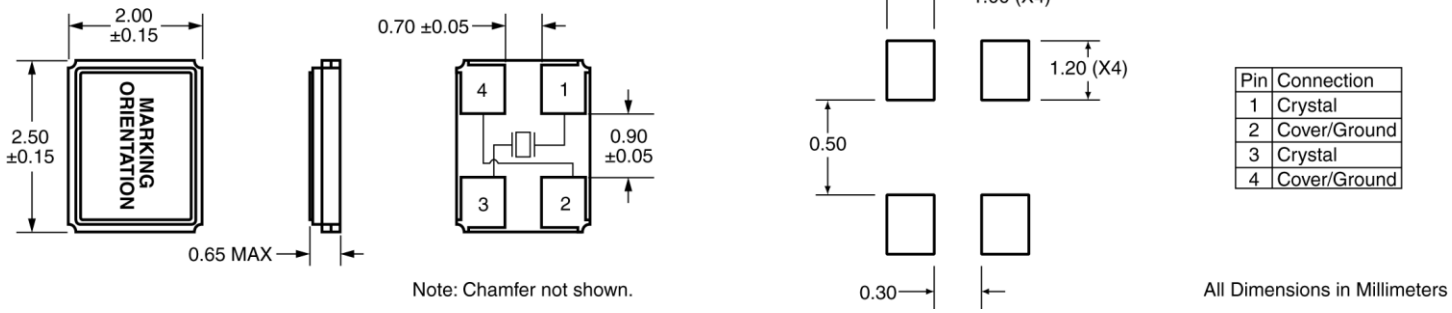
Applications:

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

Electrical Specifications

Frequency	12MHz to 60MHz
Equivalent Series Resistance 12MHz – 19.999999MHz 20MHz – 29.999999MHz 30MHz – 39.999999MHz 40MHz – 60MHz	 100 Ohms Maximum 80 Ohms Maximum 60 Ohms Maximum 40 Ohms Maximum
Shunt Capacitance (C0)	3.5pF Maximum
Frequency Tolerance (at 25°C)	±50ppm, ±30ppm, ±25ppm, ±20ppm, ±15ppm, or ±10ppm
Frequency Stability (over Temperature)	±50ppm, ±30ppm, ±25ppm, ±20ppm, ±15ppm, or ±10ppm
Mode of Operation	Fundamental
Crystal Cut	AT Cut
Load Capacitance	8pF to 32pF or Specify
Drive Level	100µW Maximum
Aging	±3ppm/Year Maximum
Operating Temperature Range	See Part Number Guide
Storage Temperature Range	-40°C to +125°C

Mechanical and Solder Pad Dimensions



Note: Chamfer not shown.

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

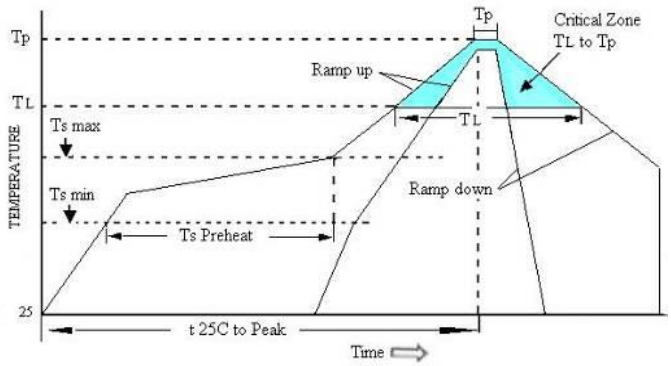
All Dimensions in Millimeters

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 = ±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			
	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**	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 frequency stability options.

Pb Free Solder Reflow Profile:



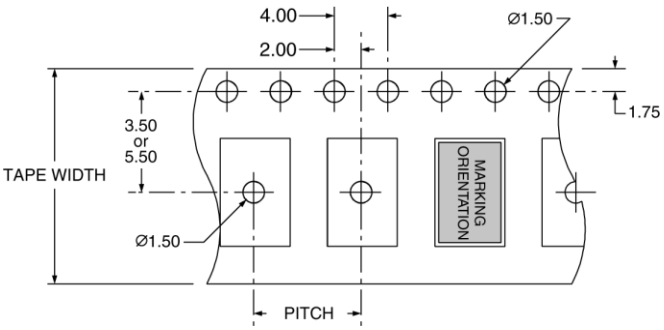
Units are backward compatible with +240°C reflow processes

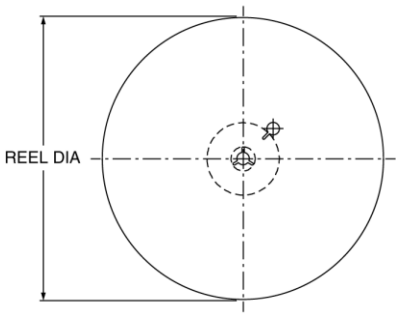
Ts max to T_L (Ramp-up Rate)	3ºC / second max
Preheat Temperature min (Ts min) Temperature typ (Ts typ) Temperature max (Ts max) Time (Ts)	 150ºC 175ºC 200ºC 60 to180 seconds
Ramp-up Tate (T_L to Tp	3ºC / second max
Time Maintained Above Temperature (T_L) Time (T_L)	 217ºC 60 to 150 seconds
Peak Temperature (Tp)	260ºC max for 10 seconds
Time within 5ºC to Peak Temperature (Tp)	20 to 40 seconds
Ramp-down Rate	6ºC / second max
Tune 25ºC to Peak Temperature	8 minutes max

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

Environmental Specifications:

Thermal Shock	MIL-STD-883, Method 1011, Condition A
Moisture Resistance	MIL-STD-883, Method 1004
Mechanical Shock	MIL-STD-883, Method 2002, Condition B
Mechanical Vibration	MIL-STD-883, Method 2007, Condition A
Resistance to Soldering Heat	J-STD-020C, Table 5-2 Pb-free devices (except 2 cycles max)
Hazardous Substance	Pb-Free / RoHS / Green Compliant
Solderability	JESD22-B102-D Method 2 (Preconditioning E)
Terminal Strength	MIL-STD-883, Method 2004, Test Condition D
Gross Leak	MIL-STD-883, Method 1014, Condition C
Fine Leak	MIL-STD-883, Method 1014, Condition A2, R1=2x10-8 atm cc/s
Solvent Resistance	MIL-STD-202, Method 215

Marking:

Line 1: I-Date Code (Date Code = YWW)
Line 2: Frequency