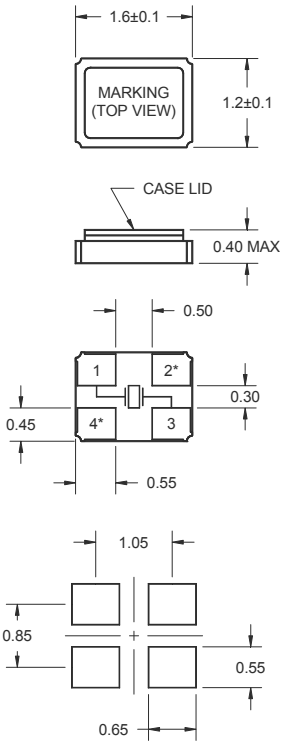
4 Pad Ceramic Crystal, 1.6 mm x 1.2 mm

ILCX20 Series

Product Feature:
- Low Cost SMD Package
- Ultra-Miniature Package
- Compatible with Leadfree Processing
- RoHS Compliant

Applications:
- Fibre Channel
- Server & Storage
- Sonet /SDH
- 802.11 / Wifi
- T1/E1,T3/E3
- IoT

Frequency	24 MHz to 60 MHz
ESR (Equivalent Series Resistance) 24.0 MHz – 40.0 MHz 40.0 MHz – 60.0 MHz	 150 Ohms Maximum 100 Ohms Maximum
Shunt Capacitance	3.5 pF Maximum
Frequency Tolerance @ 25° C	See Part Number Guide
Frequency Stability over Operating Range Temperature	See Part Number Guide
Crystal Cut	AT Cut
Mode of Operation	Fundamental
Load Capacitance	18 pF Standard
Drive Level	100 µWatts Maximum
Aging at +25° C	±3 ppm / Year Maximum
Operating Temperature Range	See Part Number Guide
Storage Temperature Range	-40° C to +85° C



RECOMMEND
LAND PATTERN

Pin Connections	
Pin 1	Crystal
Pin 2	Internally connected to case lid
Pin 3	Crystal
Pin 4	No Connect

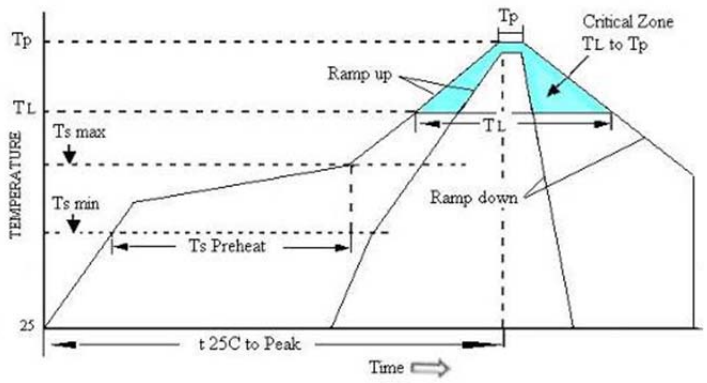
DIMENSIONS IN mm

Part Number Guide **Sample Part Number: ILCX20 - FB1F18 - 20.000 MHz**

Package	Tolerance (ppm) at Room Temperature	Stability (ppm) over Operating Temperature	Operating Temperature Range	Mode of Operation	Load Capacitance (pF)	Frequency
ILCX20 -	B = ±50 ppm	B = ±50 ppm	0 = 0°C to +50°C	F = Fundamental	18 pF Standard Or Specify	XX.XXXXXX MHz (8 Digits Max.)
	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**	7 = -30°C to +80°C			
			9 = -10°C to +50°C			

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

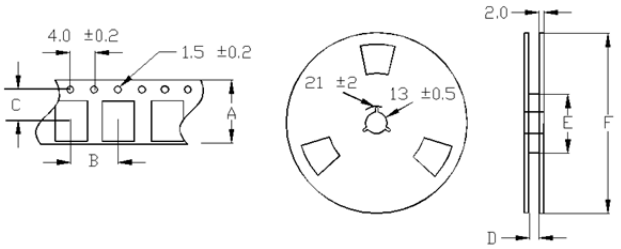
Pb Free Solder Reflow Profile:



Units are backward compatible with +240ºC 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 minute max

Tape and Reel Information:

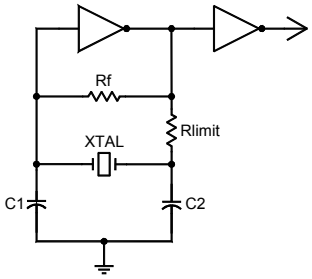


Quantity per Reel	3000
A	8.0 ±0.3
B	4.0 ±0.2
C	3.5 ±0.2
D	9.0±1.0
E	60 / 80
F	180

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)
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

Typical Application:



Package Information:

MSL = 1
Termination = e4 (Au over Ni over W base metal).

Marking:

Line 1: I-Date Code (yww)