

## Product Features:

AEC – Q200 qualified  
IATF 16949 certified production lines  
RoHS and REACH compliant  
Suitable for use in harsh environments  
Extended operating temperature range: -40°C to +125°C

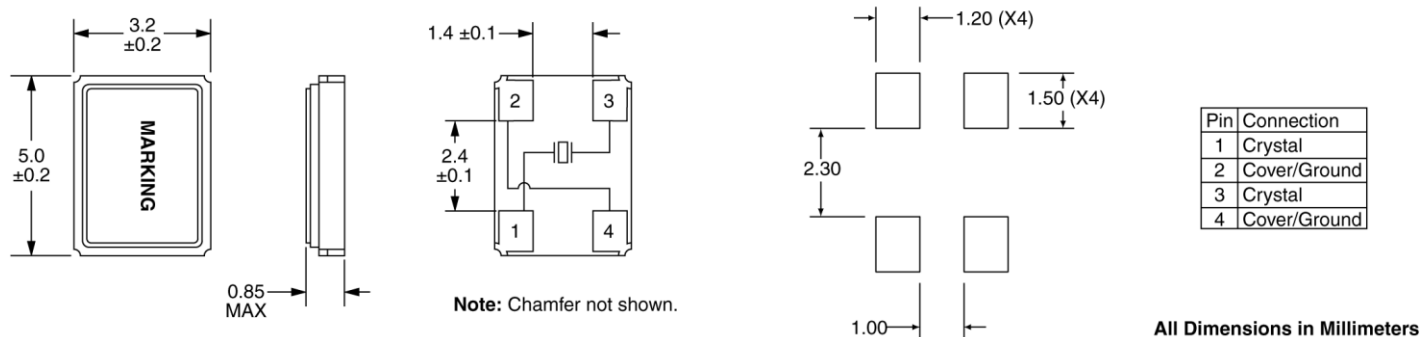
## Applications:

Navigation, GPS  
Infotainment System  
Instrument Panel, Ethernet  
ADAS Radar, Camera, Engine Control Units  
Lidar Systems, TPMS

## Electrical Specifications

|                                                                                                                               |                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| <b>Frequency</b>                                                                                                              | 7.6MHz to 54MHz                                                           |
| <b>Equivalent Series Resistance</b><br>7.6MHz – 11.999999MHz<br>12MHz – 13.999999MHz<br>14MHz – 19.999999MHz<br>20MHz – 54MHz | 100 Ohms Maximum<br>60 Ohms Maximum<br>50 Ohms Maximum<br>40 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>                                                                                 | ±100ppm, ±50ppm, ±30ppm, or ±20ppm                                        |
| <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>                                                                                                            | 300µWatts Maximum                                                         |
| <b>Aging</b>                                                                                                                  | ±3ppm/Year Maximum                                                        |
| <b>Operating Temperature Range</b>                                                                                            | -40°C to +85°C, -40°C to +105°C, or -40°C to +125°C                       |
| <b>Storage Temperature Range</b>                                                                                              | -50°C to +150°C                                                           |

## Mechanical and Solder Pad Dimensions

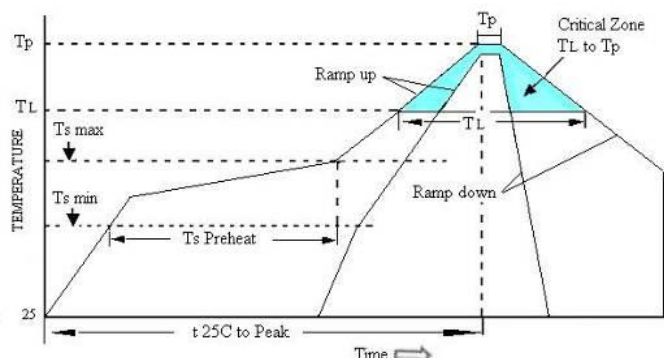


## Part Number Guide

| Sample Part Number: IXA20 – FBDF18 - 25.000 MHz |                     |                     |                             |                    |                        |              |
|-------------------------------------------------|---------------------|---------------------|-----------------------------|--------------------|------------------------|--------------|
| Package                                         | Frequency Tolerance | Frequency Stability | Operating Temperature Range | Mode of Operations | Load Capacitance       | Frequency    |
| IXA20 -                                         | B = ±50ppm          | A = ±100ppm         | 5 = -40°C to +85°C          | F = Fundamental    | 8pF to 32pF or Specify | - 25.000 MHz |
|                                                 | F = ±30ppm          | B = ±50ppm          | D = -40°C to +105°C         |                    |                        |              |
|                                                 | G = ±25ppm          | F = ±30ppm*, **     | F = -40°C to +125°C         |                    |                        |              |
|                                                 | H = ±20ppm          | H = ±20ppm*, **     |                             |                    |                        |              |
|                                                 | I = ±15ppm          |                     |                             |                    |                        |              |
|                                                 | J = ±10ppm          |                     |                             |                    |                        |              |

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

### Pb Free Solder Reflow Profile:



Units are backward compatible with +240°C reflow processes

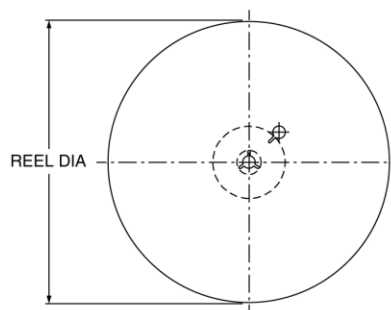
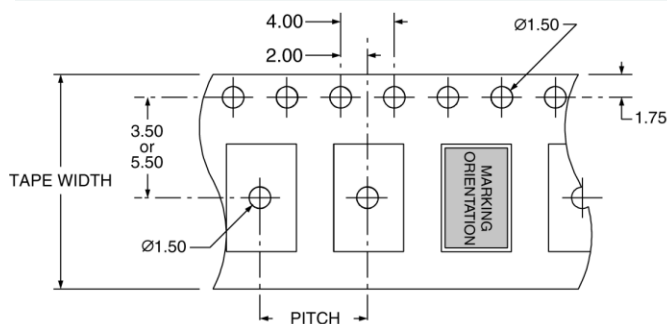
|                                                                                  |                             |
|----------------------------------------------------------------------------------|-----------------------------|
| Ts max to T <sub>L</sub> (Ramp-up Rate)                                          | 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<br>Temperature (T <sub>L</sub> )<br>Time (T <sub>L</sub> ) | 217°C<br>60 to 150 seconds  |
| Peak Temperature (T <sub>p</sub> )                                               | 260°C max for 10<br>seconds |
| Time within 5°C to Peak<br>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               |

### 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        | 4.00  |
| TAPE WIDTH   | 12.00 |
| REEL DIA     | 180   |
| QTY PER REEL | 1,000 |

### Environmental Specifications:

|                              |                                        |
|------------------------------|----------------------------------------|
| Mechanical Shock             | MIL-STD-202, Method 213                |
| Vibration                    | MIL-STD-202, Method 204                |
| Resistance to Soldering Heat | MIL-STD-202, Method 210                |
| Solderability                | J-STD-002                              |
| Gross Leak                   | MIL-STD-883, Method 1014, Condition C  |
| Fine Leak                    | MIL-STD-883, Method 1014, Condition A2 |

**Marking:**

Line 1: Frequency (XX.XX)

Line 2: Date Code (YWW)