

| PAD | CONNECTION   |
|-----|--------------|
| 1   | Crystal      |
| 2   | Ground & lid |
| 3   | Crystal      |
| 4   | Ground & lid |

## Features

- ▶ Ultra-miniature for maximum space saving
- ▶ Ideal for Bluetooth / Wireless applications
- ▶ High reliability & tight stability
- ▶ Metal lid can be grounded to minimise EMI
- ▶ Seam sealed for excellent long-term stability

## Specifications

| Parameters                          | Product  | Option Codes   |
|-------------------------------------|--|--|
|                                     | GSX-221  |  |
| Frequency range:                    | 16.0 ~ 56.0MHz   | <input checked="" type="checkbox"/>  |
| Calibration tolerance:              | ±10ppm<br>±15ppm<br>±20ppm<br>Other values (±7.5 ~ ±100ppm)                                    | <input checked="" type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/>                                  |
| Temperature stability:              | ±10ppm<br>±15ppm<br>±20ppm<br>±30ppm<br>Other values (±7.5 ~ ±100ppm)                          | <input checked="" type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/>      |
| Operating temperature range:        | -10 to +60°C<br>-20 to +70°C<br>-30 to +80°C<br>Other values                                   | <input checked="" type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/>                                  |
| Storage temperature range:          | -40 to +90°C   | <input checked="" type="checkbox"/>  |
| Circuit condition:                  | 8pF<br>9pF<br>12pF<br>Other values   | <input type="checkbox"/><br><input checked="" type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/>                                  |
| Oscillation mode:                   | Fundamental  | <input checked="" type="checkbox"/>  |
| Equivalent series resistance (max): | 150Ω (16.0 ~ 19.9MHz)<br>100Ω (20.0 ~ 29.9MHz)<br>80Ω (30.0 ~ 35.9MHz)<br>60Ω (36.0 ~ 56.0MHz) | <input checked="" type="checkbox"/><br><input checked="" type="checkbox"/><br><input checked="" type="checkbox"/><br><input checked="" type="checkbox"/> |
| Ageing:                             | ±3ppm max first year   | <input checked="" type="checkbox"/>  |
| Static capacitance (C0):            | 5pF max  | <input checked="" type="checkbox"/>  |
| Test drive level:                   | 10μW typ   | <input checked="" type="checkbox"/>  |
| Soldering condition:                | 260°C, 10 sec x2 max   | <input checked="" type="checkbox"/>  |

■ Standard. □ Optional - Please specify required code(s) when ordering

## Ordering Information

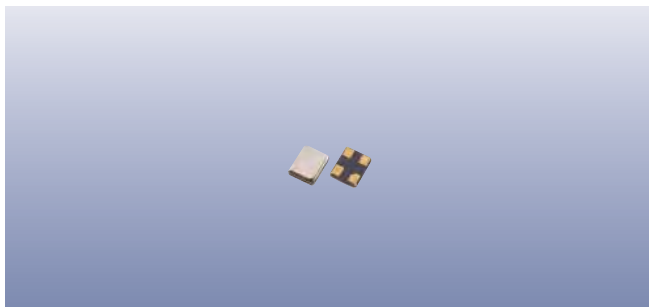
Part No, or product name + option codes + frequency

eg: **GSX-221/111NF 26.0MHz** 10/10/10/9-F

**GSX-221/1P3BF 26.0MHz** 10/15/30/12-F

Option code X (eg GSX-221/X) denotes a custom specification.

♦ ±10ppm temperature stability may not be available over -30+80°C. Check with our sales office before ordering.



## Construction

- Ceramic body with gold-plated pads
- Metal lid, seam sealed

## Composition



This product is lead-free, and is fully compliant with the RoHS directive 2011/65/EU



## Packaging & Handling

Production quantities supplied on T&R, 3k pcs per reel.  
Small quantities may be supplied on tape (no reel), or in bulk.

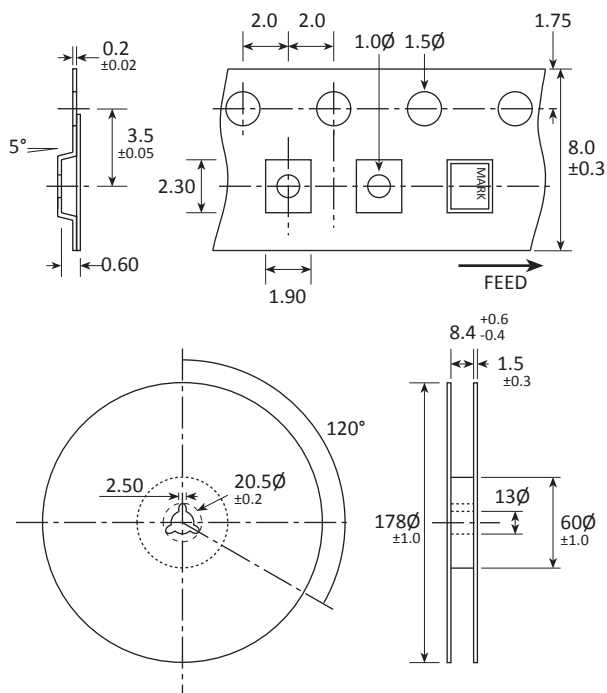
## Marking

FREQUENCY  
S DC

Marking type: Laser  
DC = Date code in YM, eg "CE" = May 2013

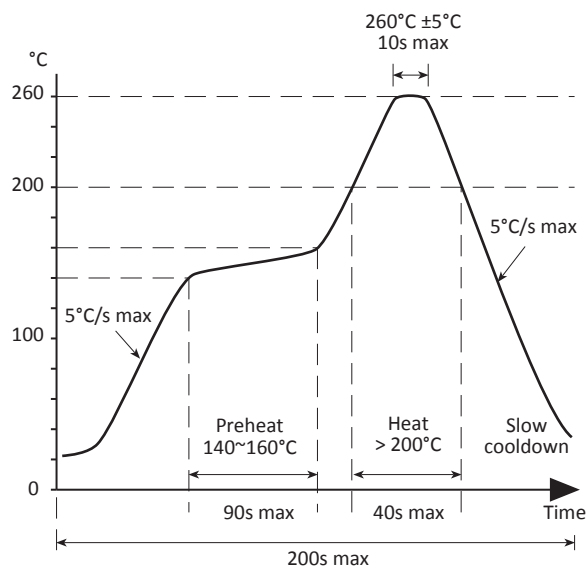
|   | A   | B   | C   | D   | E   | F   | G   | H   | J   | K   | L   | M   |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Y | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 0   |     |     |
| M | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |

## Tape & Reel Specification



Not to scale. Dimensional tolerances ±0.1mm unless otherwise stated.

## Soldering Profile



Maximum solder resistance: 260°C x 10 secs x 2.