

## Product Description

|                 |                                  |
|-----------------|----------------------------------|
| Description:    | 12.0MHz GSX-333/111DF SM Crystal |
| Product family: | GSX-333                          |
| Category:       | SM Quartz Crystal                |
| Order code:     | MA07817                          |

## Features

- ▶▶▶ Metal lid can be grounded to minimise EMI
- ▶▶▶ Seam sealed for excellent long-term stability
- ▶▶▶ Ultra-miniature for maximum space saving

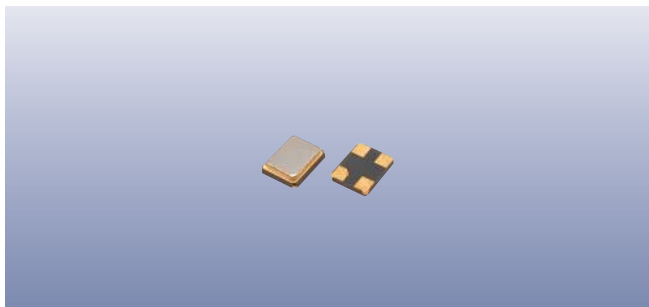
## Additional Information

For further information regarding packaging, construction, material composition, soldering profile and environment, please refer to **GSX-333 Product Information sheet**

For dimensions, refer to package drawing: **D0262-A**

## Electrical Specifications

| Parameter                            | Value        | Notes      |
|--------------------------------------|--------------|------------|
| Nominal frequency:                   | 12.0MHz      |            |
| Calibration tolerance:               | ±10ppm       |            |
| Temperature stability:               | ±10ppm       |            |
| Operating temperature range:         | -10 to +60°C |            |
| Storage temperature range:           | -40 to +85°C |            |
| Circuit condition (C <sub>L</sub> ): | 16pF         |            |
| Oscillation mode:                    | Fundamental  |            |
| Equivalent series resistance:        | 100Ω max     |            |
| Frequency perturbation:              | ±1ppm max    |            |
| Test drive level:                    | 10μW         |            |
| Ageing:                              | ±1ppm max    | First year |



## Construction

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

## Composition



This product is lead-free, and is fully compliant with current RoHS directives



LeadFree

## Packaging & Handling

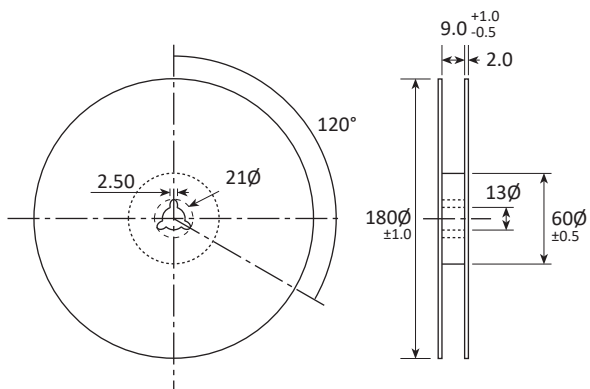
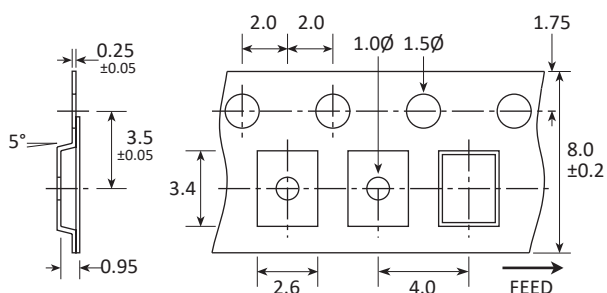
Production quantities supplied on T&R, 3k pcs per reel.  
Small quantities may be supplied on tape (no reel), or in bulk.

## Marking

FREQUENCY  
DC

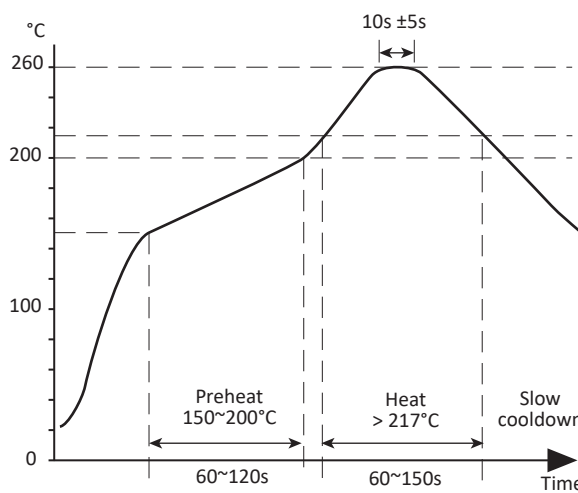
Marking type: Laser  
DC = Date code

## Tape & Reel Specification

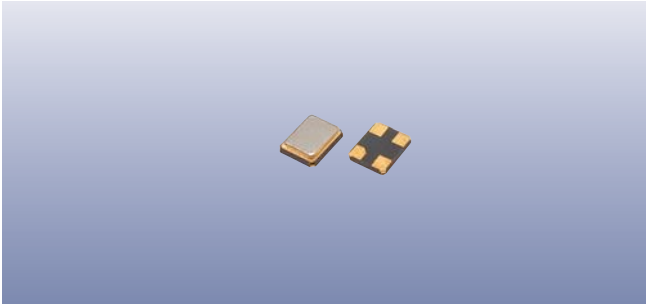


Not to scale. Dimensional tolerances ±0.1mm unless otherwise stated.

## Soldering Profile



Lead free solderability limits 260°C ±5°C x 10s ±5s x 2.



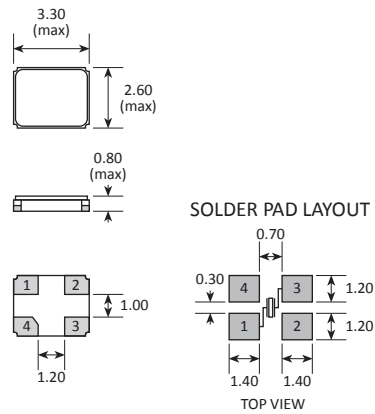
## Product Family

GSX-333

## Construction

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

## Dimensions (mm)



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

NOTE: Chamfer normally on pad 4, but may alternatively be supplied on pad 1.