

Product Description

Description:	12.0MHz GSX-433/111NF SM Crystal
Product family:	GSX-433
Category:	SM Quartz Crystal
Order code:	MA04647

Features

- ▣ Qualified for use with CSR Bluetooth chipsets
- ▣ Metal lid can be grounded to minimise EMI
- ▣ Seam sealed for excellent long-term stability
- ▣ Ultra-miniature for maximum space saving

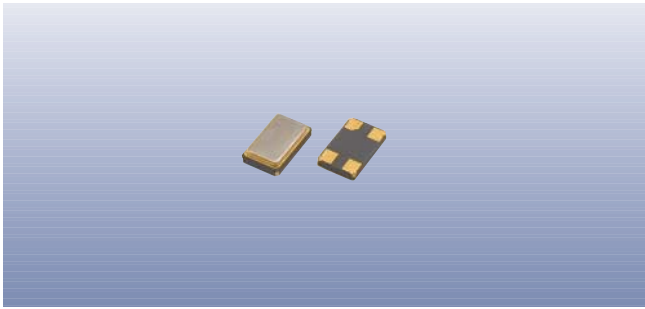
Additional Information

For further information regarding packaging, construction, material composition, soldering profile and environment, please refer to **MA04647 Product Information sheet**

For dimensions, refer to package drawing: **D0243-A**

Electrical Specifications

Parameter	Value	Notes
Nominal frequency:	12.0MHz	
Calibration tolerance:	±10ppm max	At 25°C ±3°C
Temperature stability:	±10ppm max	Referred to frequency at 25°C
Operating temperature range:	-10 to +60°C	
Storage temperature range:	-40 to +85°C	
Circuit condition:	9pF	
Static capacitance (C ₀):	2.0pF max	
Pulling sensitivity:	10ppm / pF min	11.3ppm / pF typical (Load @ 9pF)
Oscillation mode:	Fundamental	
Equivalent series resistance:	60Ω max	
Ageing:	±1ppm max per year	At 25°C
Test drive level:	10μW	



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 2002/95/EC



Packaging & Handling

Production quantities supplied on T & R, 1k or 3k pcs per reel. Small quantities may be supplied on tape (no reel), or in bulk.

Marking

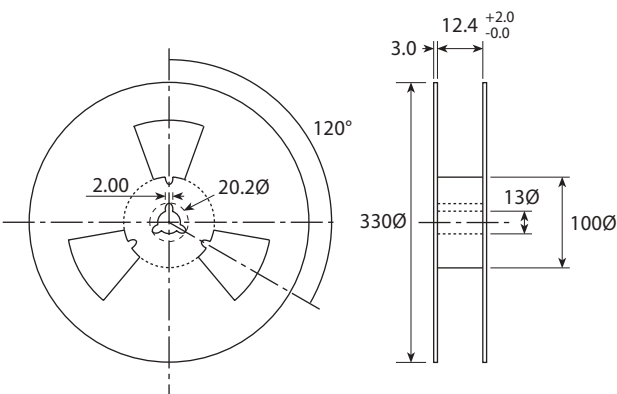
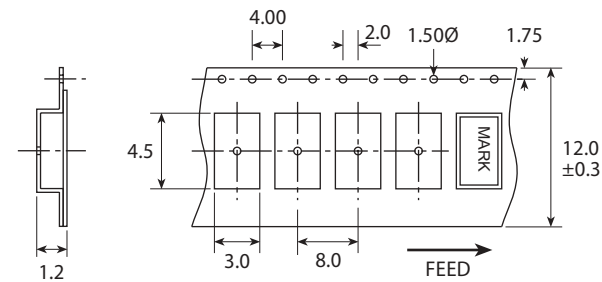
175
T DC

Marking type: Laser
 DC = Date code in YW, as shown below
 Example: "zd" = 2004 week 30

Year	2001	2002	2003	2004
	2005	2006	2007	2008
Code	Z	z	z	z

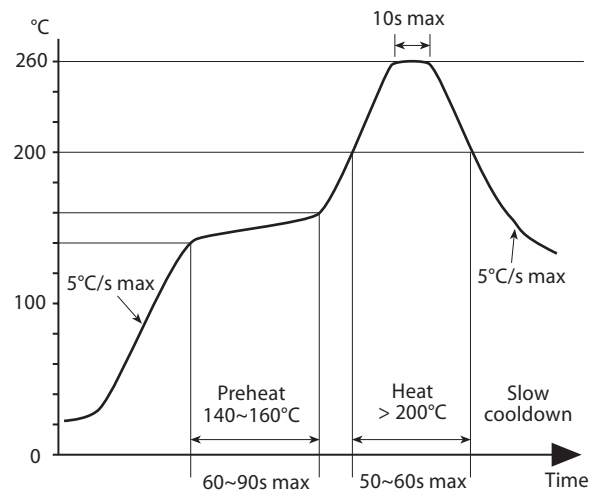
Week codes:
 A ~ Z: weeks 1 to 26
 a ~ z: weeks 27 to 52

Tape & Reel Specification

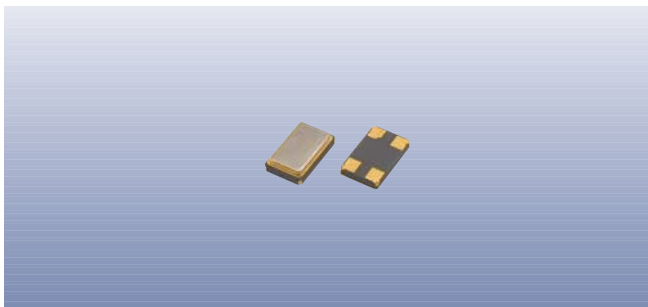


Not to scale. Dimensional tolerances ±0.1mm unless otherwise stated

Soldering Profile



Solder resistance: 260°C x 10 secs x 2.



Product Family

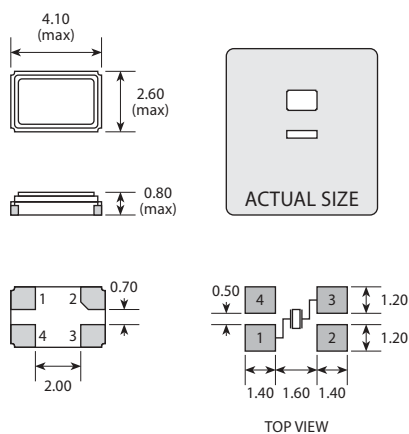
GSX-433

Construction

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

Dimensions (mm)

Scale 3:1



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