

# GSX-213

## Ultra-miniature SM Crystal for NFC, Smartcard etc

- Ultra-miniature for maximum space saving
- Ideal for near field communications (NFC), smartcard, wireless & mobile
- Metal lid can be grounded to minimise EMI
- Seam sealed for excellent long-term stability
- Excellent ageing characteristics

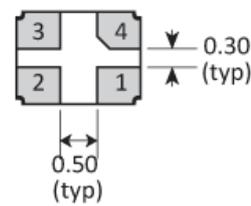
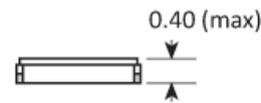
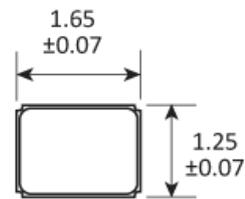
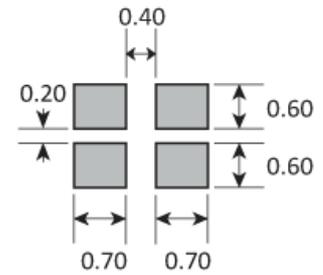


### CONFIGURABLE OPTIONS

| Parameter                          | Option Code |
|------------------------------------|-------------|
| <b>Frequency</b>                   |             |
| <b>Calibration tolerance</b>       |             |
| Any                                |             |
| ±10ppm                             | 1           |
| ±15ppm                             | P           |
| ±30ppm                             | 3           |
| <b>Temperature stability</b>       |             |
| Any                                |             |
| ±10ppm                             | 1           |
| ±15ppm                             | P           |
| ±20ppm                             | 2           |
| ±30ppm                             | 3           |
| <b>Operating temperature range</b> |             |
| Any                                |             |
| -10 to +60°C                       | 1           |
| -20 to +70°C                       | 2           |
| -30 to +80°C                       | 3           |
| -40 to +85°C                       | 4           |
| <b>Circuit condition</b>           |             |
| Any                                |             |
| 5pF                                | R           |
| 8pF                                | M           |
| 9pF                                | N           |
| 10pF                               | A           |
| Series resonant                    | S           |
| <b>Oscillation mode</b>            |             |
| Fundamental                        | F           |

**SPECIFICATIONS**

|                              |  |
|------------------------------|--|
| Frequency range              | 24.0 ~ 60.0MHz   |
| Dimensions                   | 1.65 x 1.25 x 0.40mm   |
| Storage temperature range    | -40 to +85 °C  |
| Equivalent series resistance | 200Ω max @ 26.0MHz<br>150Ω max @ 37.4MHz<br>100Ω max @ 38.4MHz<br>100Ω max @ 40.0MHz |
| Ageing                       | ±1ppm max first year   |
| Test drive level             | 100μW max  |
| Soldering condition          | 260 °C, 10 sec x2 max  |

**PACKAGE DRAWING**

**SOLDER PAD LAYOUT**


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

Dimensions in mm

## ORDERING INFORMATION

To request a quotation for the GSX-213 please use the configurable options form to choose the options you require and then submit your configured product to our team. Our expert advisers are always happy to help with your requirements and can be contacted on +44 1460 256 100 or at [sales@golledge.com](mailto:sales@golledge.com).

Following product selection you will be issued with a seven character Golledge part number. Your Golledge part number is the internationally accepted Golledge manufacturing part number (MPN) that should be used for all project documentation, including bills of materials (BoMs) and purchase orders.

If you have any queries regarding any of our documentation our dedicated sales team will be happy to help.

## APPLICATIONS

Our crystals and oscillators are regularly supplied for use with industry-leading ICs, from world-leading manufacturers including:

Analogue Devices  
 Atmel (Microchip Technology Inc.)  
 Broadcom  
 Dialog Semiconductor PLC  
 Intel  
 Nordic Semiconductor  
 NXP Semiconductors  
 Qualcomm (and CSR)  
 Silicon Labs  
 STMicroelectronics  
 Texas Instruments (TI)  
 Xilinx  
 and more...

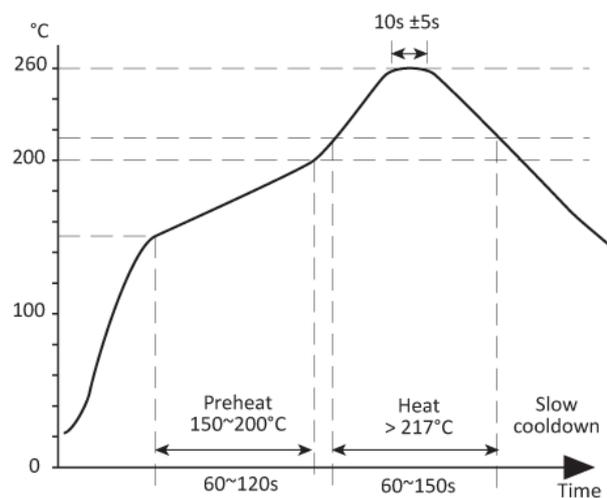
If you'd like more information about chipset compatibility please [get in touch with our team here](#).

## MARKING

|                   |
|-------------------|
| FREQUENCY<br>T DC |
|-------------------|

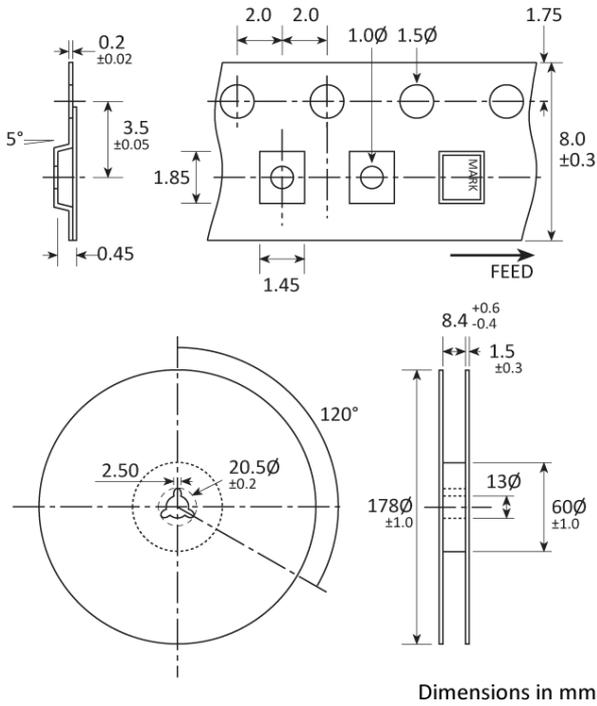
Marking type: Laser  
 DC = Date code

## SOLDERING PROFILE



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

**TAPE & REEL SPECIFICATION**



**HANDLING & STORAGE**



Human Body Model (HBM) 1A (250V to <500V)



Moisture Sensitivity Level (MSL): 1 (or not applicable)

**CONSTRUCTION**

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

**COMPLIANCE**

Please refer to our **DOCUMENTS** section for more information.



Lead-free (< 0.1% by weight)



RoHS compliant with no exemptions.



REACH compliant.



Free of conflict minerals.



Free from halogens.



Free from ozone-depleting substances.