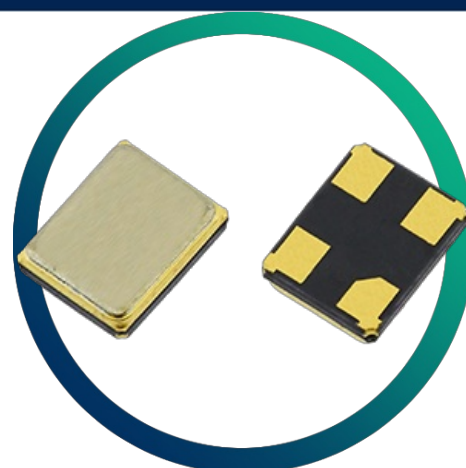


GSX-221

Ultra-miniature SM Crystal

- 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



CONFIGURABLE OPTIONS

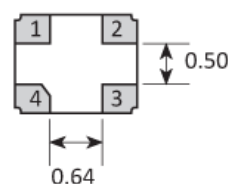
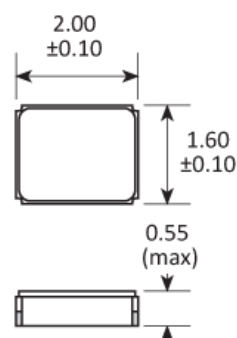
| Parameter | Option Code |
|-----------------------------|-------------|
| Frequency | |
| Calibration tolerance | |
| Any | |
| ±10ppm | 1 |
| ±15ppm | P |
| ±20ppm | 2 |
| Temperature stability | |
| Any | |
| ±10ppm | 1 |
| ±15ppm | P |
| ±20ppm | 2 |
| ±30ppm | 3 |
| Operating temperature range | |
| Any | |
| -10 to +60°C | 1 |
| -20 to +70°C | 2 |
| -30 to +80°C | 3 |
| -40 to +85°C | 4 |
| Circuit condition | |
| Any | |
| 8pF | M |
| 9pF | N |
| 10pF | A |
| 12pF | B |
| Oscillation mode | |
| Fundamental | F |

* ±10ppm temperature stability may not be available over -30+85°C. Check with our sales office before ordering

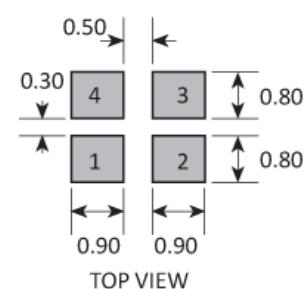
SPECIFICATIONS

| | |
|--------------------------------------|--|
| Frequency range | 16.0 ~ 56.0MHz |
| Dimensions | 2.0 x 1.6 x 0.55mm |
| Storage temperature range | -40 to +90 °C |
| Equivalent series resistance | 150Ω max (16.0 ~ 19.9MHz) 100Ω max (20.0 ~ 29.9MHz) 80Ω max (30.0 ~ 35.9MHz) 60Ω max (36.0 ~ 56.0MHz) |
| Ageing | ±3ppm max first year |
| Static capacitance (C ₀) | 5pF max |
| Test drive level | 10μW typ |
| Soldering condition | 260 °C, 10 sec x2 max |

PACKAGE DRAWING



SOLDER PAD LAYOUT



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

Dimensions in mm

ORDERING INFORMATION

To request a quotation for the GSX-221 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.

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.

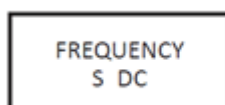
APPLICATIONS

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

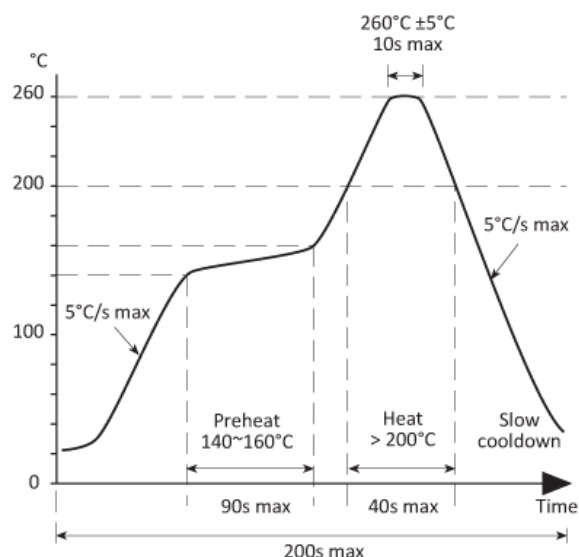


Marking type: Laser

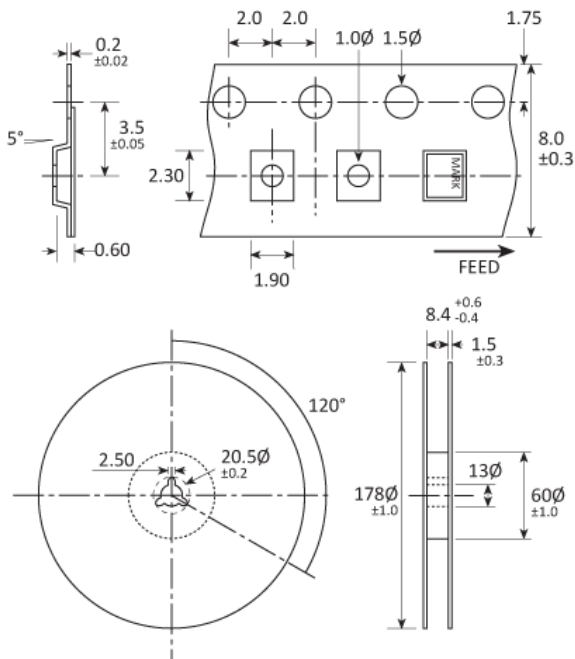
DC = Date Code in YM, eg. "GF" = Jun 2017

| | 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 |

SOLDERING PROFILE



TAPE & REEL SPECIFICATION



Dimensions in mm

CONSTRUCTION

Ceramic body with gold-plated pads

Metal lid, seam sealed

HANDLING & STORAGE



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



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

COMPLIANCE



Lead-free (< 0.1% by weight)



RoHS compliant with no exemptions. [See our declaration](#)



REACH compliant. [See our statement](#)



Free of conflict minerals. [See our declaration](#)



Free of Halogens. [See our declaration](#)



Free of Ozone-depleting substances. [See our declaration](#)