

Typical Applications

Base Stations
 Test Equipment
 Synthesizers

Features

AT-Cut Crystal
 Dual-inline oscillator
 Surface Mount Option



Previous Vectron Model Numbers

TQDILP; TQDILC; TQDILAC

Frequency range

1 MHz – 90 MHz

Standard frequencies

10.00; 16.384; 19.44; 30.72; 32.768; MHz;
 50.00; 77.76 MHz;

Frequency stabilities¹

| Parameter | Min | Typ | Max. | Units | Operating temp range | Ordering Code ⁵ |
|--|--------|-----|--------|-------|---|----------------------------|
| vs. operating temperature range (Referenced to +25°C) | -100.0 | | +100.0 | ppm | -55 ... +125°C | H104 |
| | -50.0 | | +50.0 | ppm | -55 ... +125°C | H505 |
| | -50.0 | | +50.0 | ppm | -55 ... +105°C | G505 |
| | -25.0 | | +25.0 | ppm | -55 ... +105°C | G255 |
| | -15.0 | | +15.0 | ppm | -40 ... +85°C | F255 |
| | -50.0 | | +50.0 | ppm | -20 ... +70°C | D505 |
| | -20.0 | | +20.0 | ppm | -20 ... +70°C | D205 |
| | -10.0 | | +10.0 | ppm | -20 ... +70°C | D105 |
| | -7.5 | | +7.5 | ppm | -20 ... +70°C | D756 |
| | -5.0 | | +5.0 | ppm | -20 ... +70°C | D506 |
| Parameter | Min | Typ | Max. | Units | Condition | Ordering Code ⁵ |
| Initial tolerance | -100.0 | | +100.0 | ppm | | T104 |
| | -50.0 | | +50.0 | ppm | | T505 |
| | -20.0 | | +20.0 | ppm | | T205 |
| | -10.0 | | +10.0 | ppm | | T105 |
| | -5.0 | | +5.0 | ppm | | T506 |
| vs. supply voltage change | -2.0 | | +2.0 | ppm | V _S ± 5% Load ± 10% fo ≤ 90 MHz | |
| vs. load change | -1.0 | | +1.0 | ppm | | |
| vs. aging /1. Year | -2.0 | | +2.0 | ppm | | |

Supply voltage

| Parameter | Min | Typ | Max. | Units | Condition | Ordering Code ⁵ |
|----------------------------------|------|-----|------|-------|-----------------------|----------------------------|
| Supply voltage (V _S) | 4.75 | 5.0 | 5.25 | VDC | | SV050 |
| Current consumption | | | 40 | mA | @ HCMOS fo ≤ 90.0 MHz | |

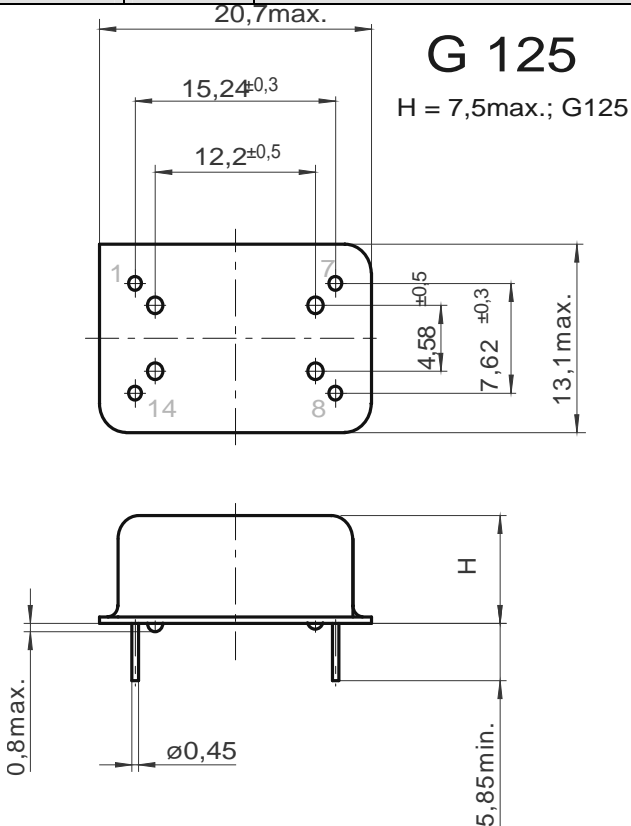
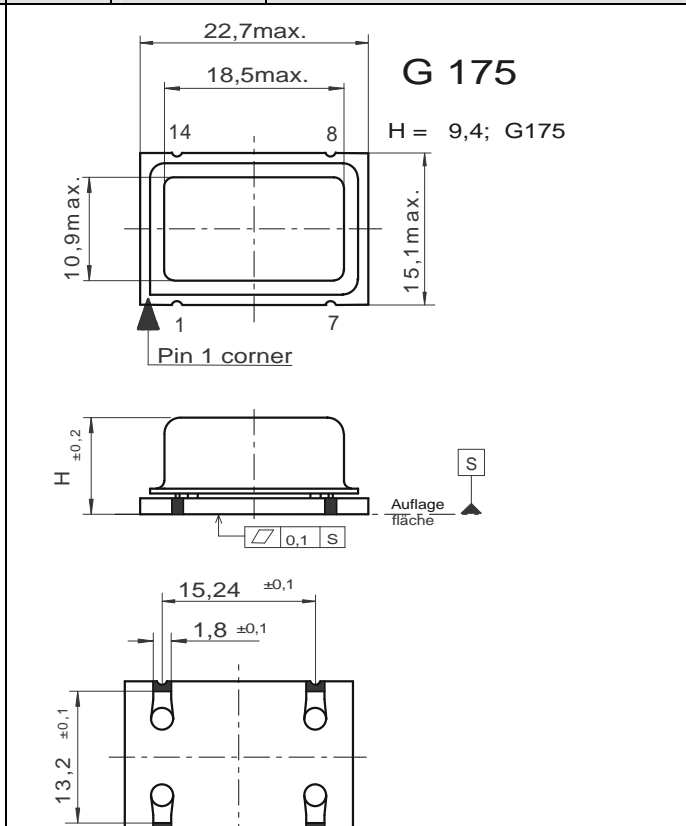
RF output

| Parameter | Min | Typ | Max. | Units | Condition | Ordering Code ⁵ |
|--------------------|-------|------|------|-------|---|----------------------------|
| Signal | HCMOS | | | | | RFH |
| Load | | 15.0 | | pF | @ 15 pF 10 to 90 % @ V _S /2 | |
| Rise and Fall time | | | 5 | ns | | |
| Duty cycle | 40 | | 60 | % | | |

Additional parameters

| Parameter | Min | Typ | Max. | Units | Condition | |
|----------------------|--------------------------|------|------|--------|-----------|---------|
| Phase Noise | | -80 | | dBc/Hz | 10 Hz | @10.000 |
| | | -110 | | dBc/Hz | 100 Hz | MHz |
| | | -135 | | dBc/Hz | 1 kHz | HCMOS |
| | | -145 | | dBc/Hz | 10 kHz | 5.0 V |
| | | -150 | | dBc/Hz | 100 kHz | |
| Weight | | | 6 | g | | |
| Processing & Packing | handling&processing note | | | | | |

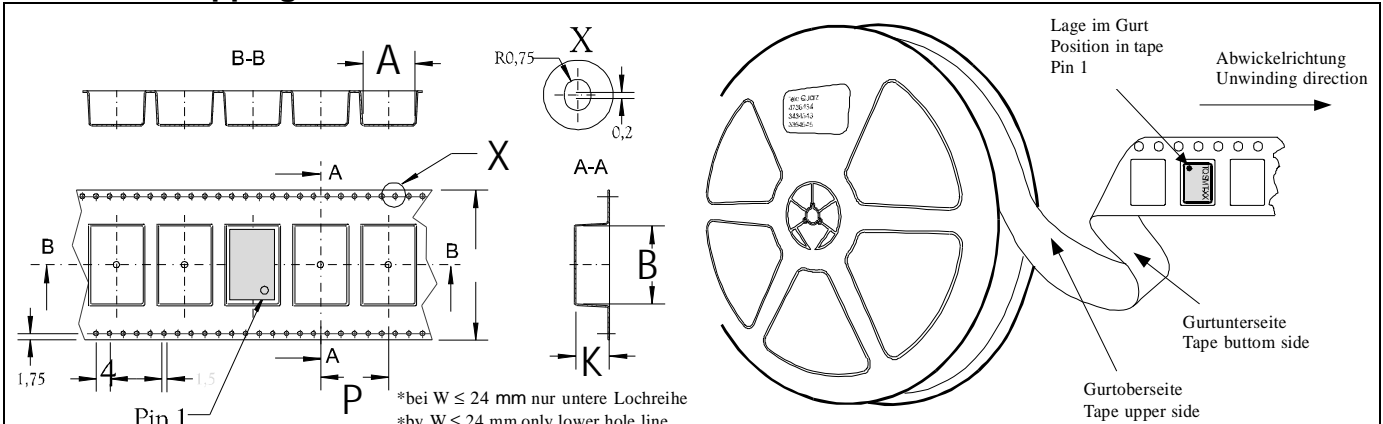
Enclosures

| Type G125 | | | | Type G175 | | |
|--|-------------------|------------------------|--|--|-------------------|----------------------|
| Package Codes: | | | | | | |
| Code A1 | Height "H" 7.5 | Pin Length "L" 5.85 | | Code B1 | Height "H" 9.4 | Pin Length "L" NA |
|  <p style="text-align: center;">G 125 H = 7,5max.; G125</p> <p style="text-align: right;">Dimensions: mm</p> | | | |  <p style="text-align: center;">G 175 H = 9,4; G175</p> <p style="text-align: right;">Dimensions: mm</p> | | |
| <p style="text-align: center;">Pin Connections</p> <ul style="list-style-type: none"> 1 NC 7 Ground (Case) 8 RF Output 14 Supply Voltage Input (Vs) <p style="text-align: center;">Outline Drawing: G125</p> | | | | <p style="text-align: center;">Pin Connections</p> <ul style="list-style-type: none"> 1 NC 7 Ground (Case) 8 RF Output 14 Supply Voltage Input (Vs) <p style="text-align: center;">Outline Drawing: G175</p> | | |
| Marking | | | | | | |
| C1410A1-xxxx frequency * C AYYWW | | | | | | |

Absolute Maximum Ratings

| Parameter | Min | Typ | Max. | Units | Condition |
|----------------------------|-----|-----|------|-------|---------------------------|
| Supply voltage (Vs) | | | 7 | V | |
| Operable temperature range | -40 | | +80 | °C | For temperature Code F, D |
| Storage temperature range | -40 | | +90 | °C | For temperature Code F, D |

Standard Shipping Method



Lage im Gurt
Position in tape
Pin 1

Abwickelrichtung
Unwinding direction

Gurtunterseite
Tape bottom side

Gurtoberseite
Tape upper side

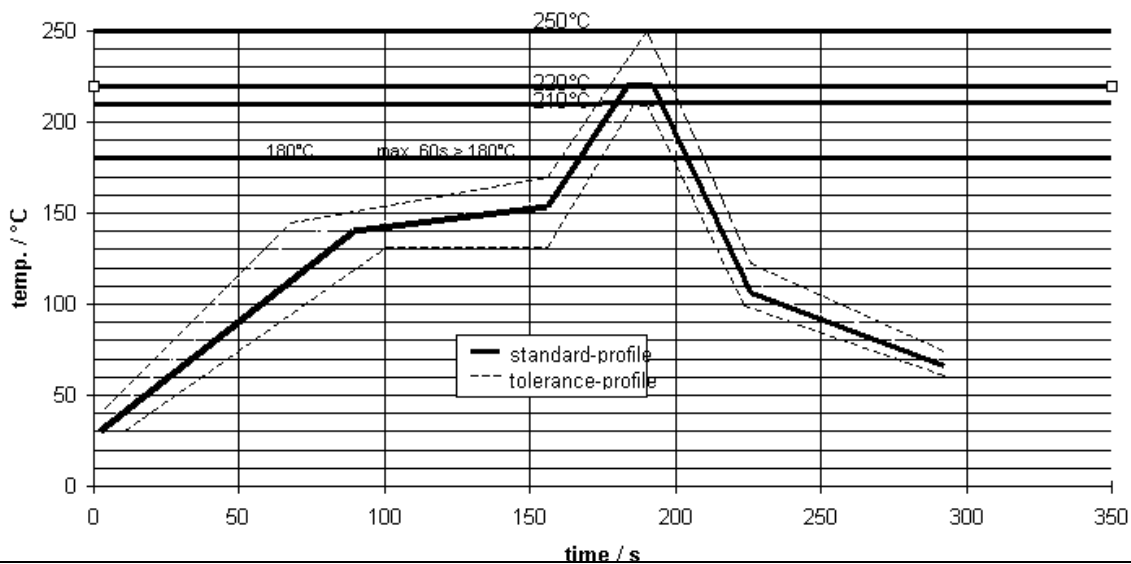
*bei $W \leq 24$ mm nur untere Lochreihe
*by $W \leq 24$ mm only lower hole line

Production tolerance complying DIN IEC 286-3

| Enclosure Type | Tape width W [mm] | Quantity per meter | Quantity per reel | Dimension P |
|----------------|----------------------|-----------------------|----------------------|----------------|
| G175 | 44 | 50 | 300 | 20 |

Recommended Reflow Profile

standard-reflow-profile for SMD-oscillators



SMD oscillators must be on the top side of the PCB during the reflow process.

How to Order this Product:

| | | | | | | |
|---------------|--|-----------------------|--------------------------|----------------------------|-----------------------|---------------------|
| Step 1 | Use this worksheet to forward the following information to your factory representative: | | | | | |
| | Model | Stability Code | Initial tolerance | Supply Voltage Code | RF Output Code | Package Code |
| | C1410 | | | | | |

Example: C1410 D205 T104 SV050 RFH A1

| | | | | |
|---------------|---|-----------------------------------|-------------|------------------------------------|
| Step 2 | The factory representative will then respond with a Vectron Model Number in the following Configuration: | | | |
| | Model | Package Code | Dash | Dash Number |
| | C1410 | [Customer Specified Package Code] | - | [Factory Generated 4 digit number] |

Typical P/N = C1410A1-0001

Notes:

- 1 Contact factory for improved stabilities or additional product options. Not all options and codes are available at all frequencies.
- 2 Unless otherwise stated all values are valid after warm-up time and refer to typical conditions for supply voltage, frequency control voltage, load, temperature (25°C)
- 3 Phase noise degrades with increasing output frequency.
- 4 Subject to technical modification.
- 5 Contact factory for availability.