VCXO/VCSO VG5032EDN

Product name VG5032EDN 130.031746MHz CJHHBA
Product code / Ordering code X1G0049110005xx
Please refer to the 8.Packing information about xx (last 2 digits)

Output waveform LV-PECL
Pb free / Complies with EU RoHS directive
Reference weight Typ.64 mg

**1.Absolute maximum ratings**

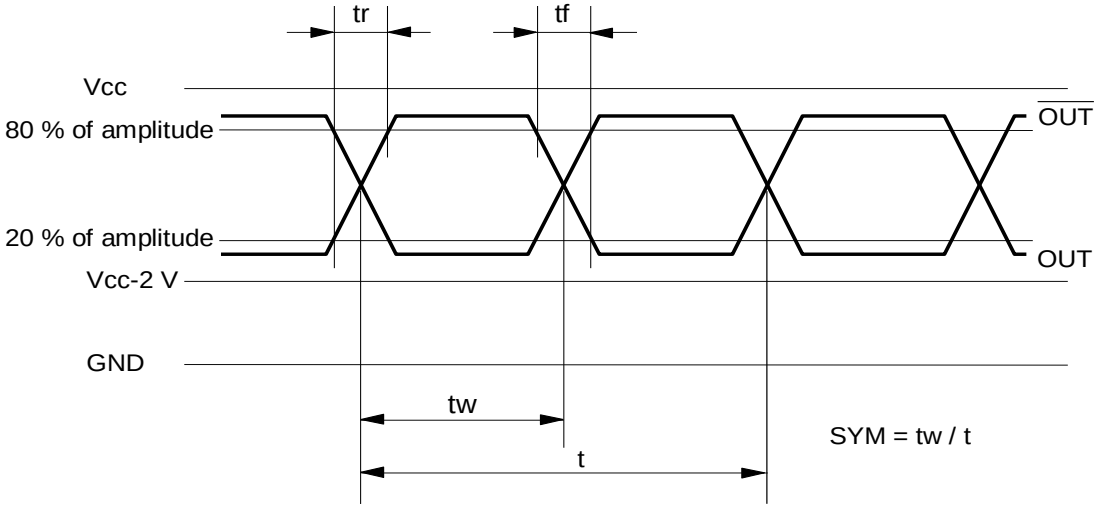
| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions / Remarks |
|---|---|---|---|---|---|---|
| Maximum supply voltage | Vcc-GND | -0.5 | - | +5 | V | - |
| Storage temperature | T_stg | -55 | - | +125 | ºC | - |
| Input voltage | Vin | -0.5 | - | Vcc+0.5 | V | Vc pin |

**2.Specifications(characteristics)**

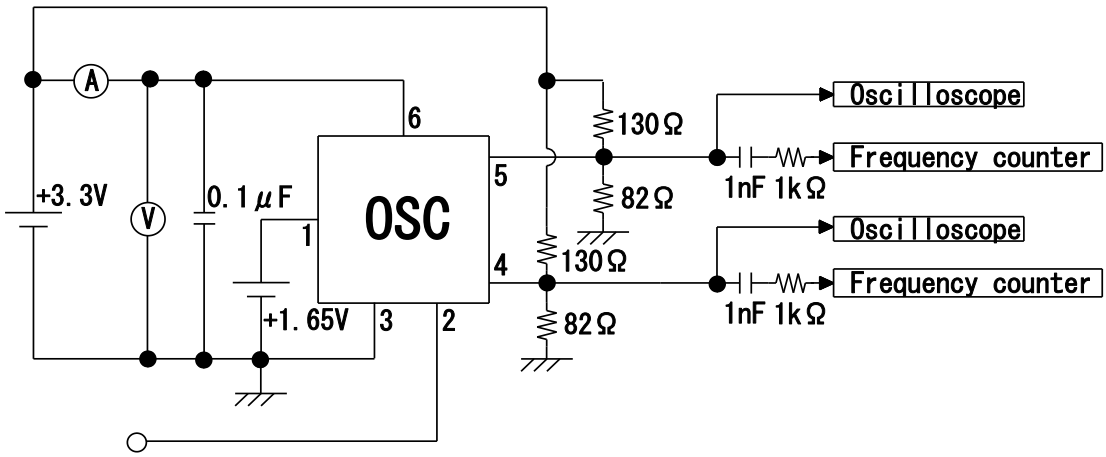
| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions / Remarks |
|---|---|---|---|---|---|---|
| Output frequency | f0 | | 130.0317 | | MHz | |
| Supply voltage | Vcc | 3.135 | 3.3 | 3.465 | V | - |
| Control voltage | Vc | 0 | 1.65 | 3.3 | V | - |
| Operating temperature | T_use | -40 | - | +105 | ºC | - |
| Frequency tolerance | f_tol | -50 | - | +50 | $x10^{-6}$ | includes 20 years aging |
| Current consumption | Icc | - | - | 60 | mA | L_ECL =50Ω |
| Disable current | I_dis | - | - | - | mA | - |
| Frequency control range | f_cont | +/-100 | - | - | $x10^{-6}$ | - |
| Absolute pull range | APR | +/-50 | - | - | $x10^{-6}$ | Vc=1.65V+/-1.65V |
| Modulation characteristics | BW | 10 | - | - | kHz | +/-3 dB |
| Input resistance | Rin | 100 | - | - | kΩ | DC Level |
| Frequency change polarity | - | | | | | Positive polarity |
| Symmetry | SYM | 45 | - | 55 | % | Vcc-1.3V, Vc=Vcc/2 |
| Output voltage | VOH | Vcc-1.1 | - | - | V | - |
| | VOL | - | - | Vcc-1.5 | V | - |
| Output load condition | L_ECL | - | 50 | - | Ω | Outputs terminated to Vcc-2.0V |
| Input voltage | VIH | 70%Vcc | - | - | V | OE pin |
| | VIL | - | - | 30%Vcc | V | OE pin |
| Rise time | tr | - | - | 0.5 | ns | 20 % to 80 % of amplitude |
| Fall time | tf | - | - | 0.5 | ns | 20 % to 80 % of amplitude |
| Start-up time | t_str | - | - | 10 | ms | t=0 at 90 %Vcc |
| Phase noise | $F_{CN}$ | - | -65 | - | dBc/Hz | Offset 10Hz |
| | | - | -97 | - | dBc/Hz | Offset 100Hz |
| | | - | -124 | - | dBc/Hz | Offset 1kHz |
| | | - | -138 | - | dBc/Hz | Offset 10kHz |
| | | - | -147 | - | dBc/Hz | Offset 100kHz |
| Phase jitter | $t_{PJ}$ | - | 0.15 | - | ps | Offset Frequency: 12kHz to 20MHz |
| Frequency aging | f_aging | - | - | - | $x10^{-6}$ | Included in frequency tolerance |

## 3.Timing chart

Output wave form




## 4.Test circuit




[Pin connection]

1. Vc
2. OE
3. GND
4. OUT1 (Positive)
5. OUT2 (Negative)
6. Vcc

3) Condition

(1) Oscilloscope

- Bandwidth should be 5 times higher than DUT's output frequency.
- Probe ground should be placed closely from test point and lead length should be as short as possible.

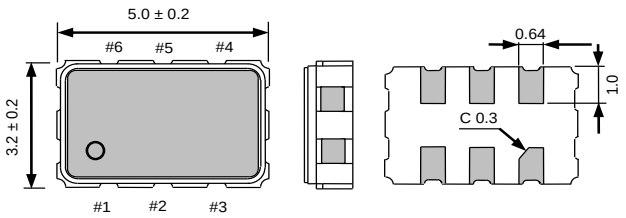
(2) By-pass capacitor (approx. 0.01μF to 0.1 μF) should be placed closely between Vcc and GND.

(3) Use the current meter whose internal impedance value is small.

(4) Power supply

- Start up time(0 V→90 %Vcc)of power source should be more than 150μs.
- Impedance of power supply should be as low as possible.

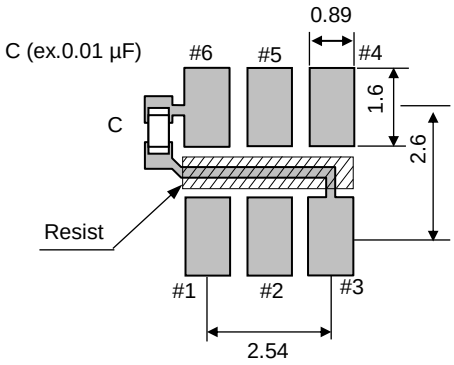
## 5.External dimensions (Unit: mm)




Pin map

| Pin | Connection |
|---|---|
| 1 | Vc |
| 2 | OE |
| 3 | GND |
| 4 | OUT1(positive) |
| 5 | OUT2(Negative) |
| 6 | Vcc |

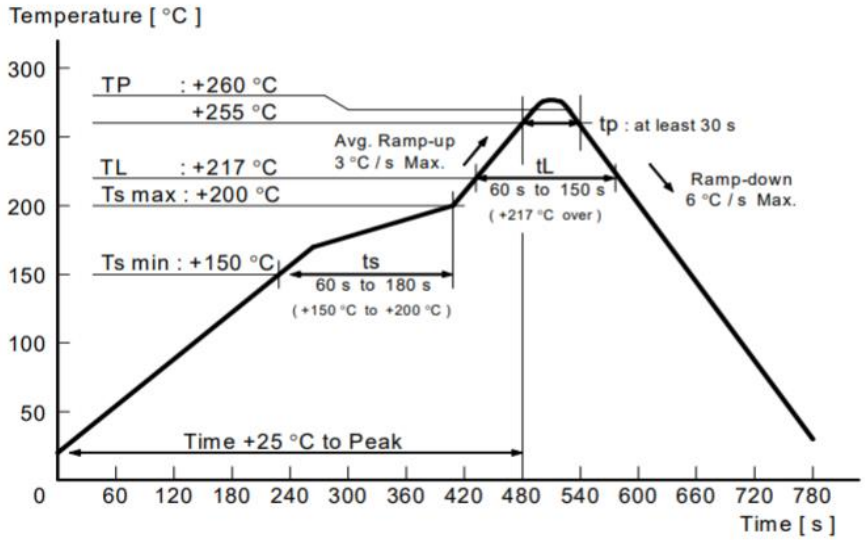
## 6.Footprint(Recommended) (Unit: mm)




To maintain stable operation, provide a 0.01uF to 0.1uF by-pass capacitor at a location as near as possible to the power source terminal of the crystal product (between Vcc - GND).

## 7.Reflow profile

Reflow condition (Follow of JEDEC STD-020D.01)




## 8.Packing information

[ 1 ]Product number last 2 digits code(xx) description

The recommended code is "00"

X1G0049110005xx

| Code | Condition |
|---|---|
| 00 | 1000pcs / Reel |
| 01 | Any Q'ty vinyl bag(Tape cut) |
| 11 | Any Q'ty / Reel |

[ 2 ] Taping specification

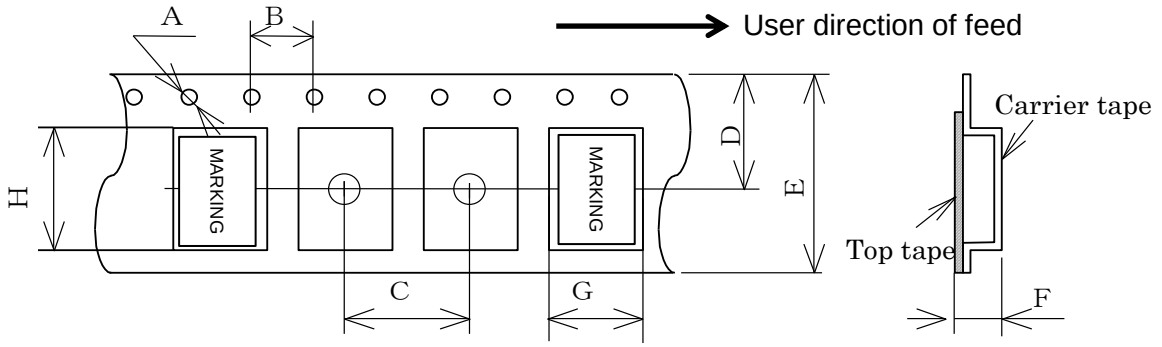
Subject to EIA-481 & IEC-60286

(1) Tape dimensions

Material of the Carrier Tape : PS

Material of the Top Tape : PET

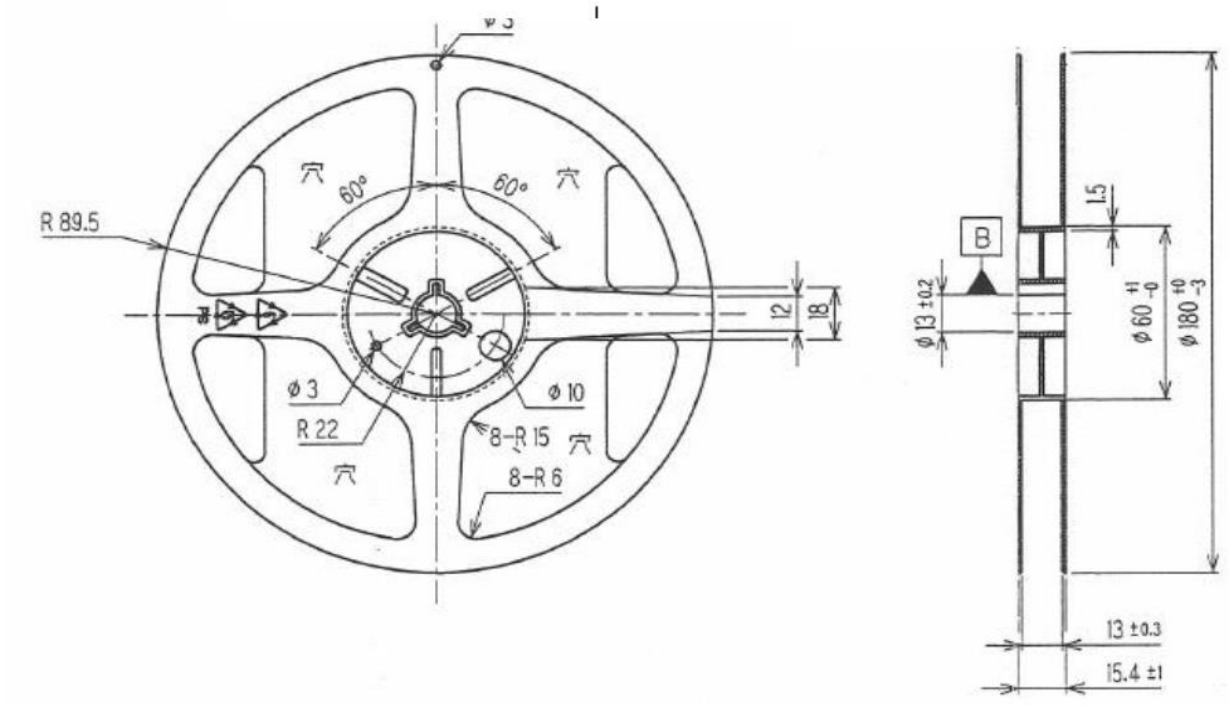
Unit: mm




| Symbol | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| Value | Φ1.5 | 4.0 | 8.0 | 7.25 | 12.0 | 1.7 | 3.5 | 5.4 |

(2) Reel dimensions

Material of the Reel : PS



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