

Product name VG5032EDN 100.000000MHz CJGHBA

Product code / Ordering code X1G0049110030xx

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**

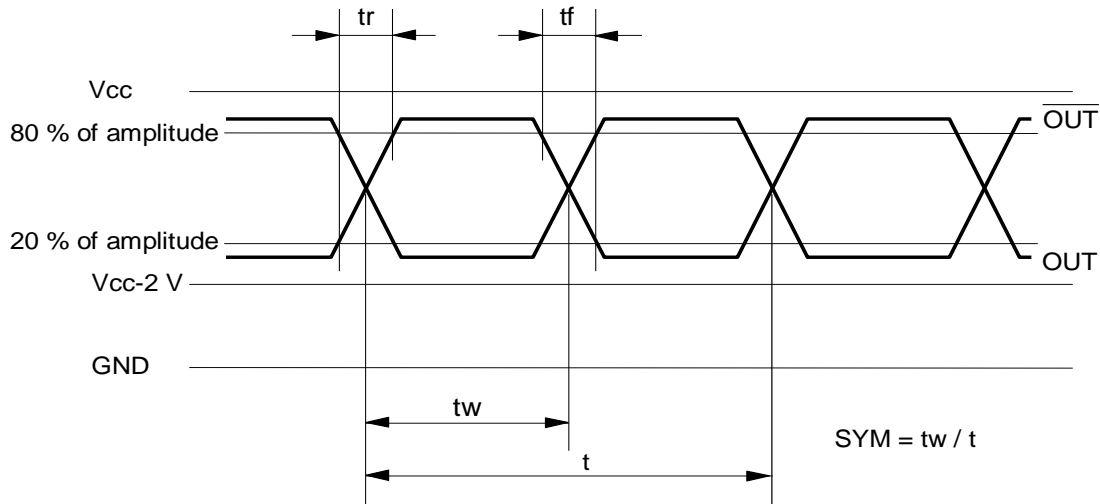
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions / Remarks
Maximum supply voltage	V <sub>cc</sub> -GND	-0.5	-	+5	V	-
Storage temperature	T <sub>stg</sub>	-55	-	+125	°C	-
Input voltage	V <sub>in</sub>	-0.5	-	V <sub>cc</sub> +0.5	V	V <sub>c</sub> pin

**2.Specifications(characteristics)**

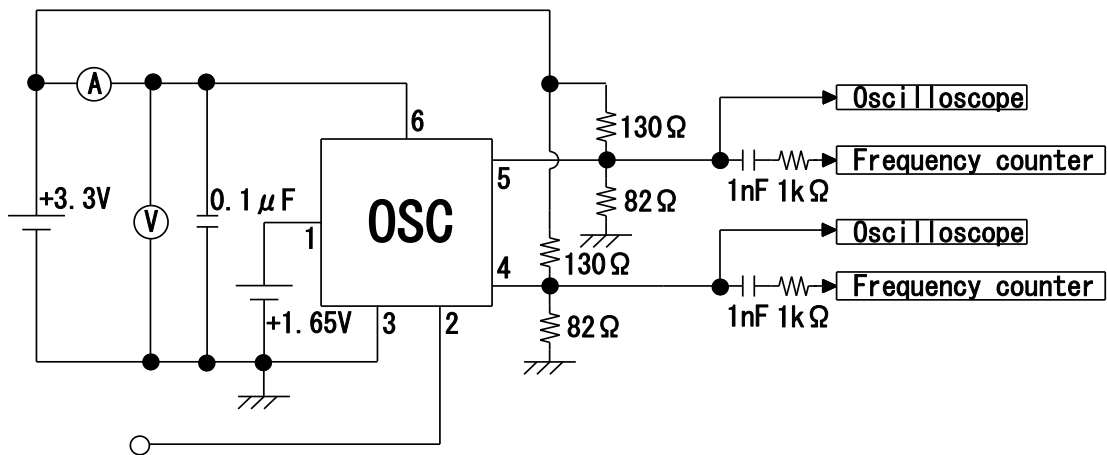
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions / Remarks
Output frequency	f <sub>0</sub>		100.0000		MHz	
Supply voltage	V <sub>cc</sub>	3.135	3.3	3.465	V	-
Control voltage	V <sub>c</sub>	0	1.65	3.3	V	-
Operating temperature	T <sub>use</sub>	-40	-	+85	°C	-
Frequency tolerance	f <sub>tol</sub>	-50	-	+50	x10 <sup>-6</sup>	includes 20 years aging
Current consumption	I <sub>cc</sub>	-	-	60	mA	L <sub>ECL</sub> =50Ω
Disable current	I <sub>dis</sub>	-	-	-	mA	-
Frequency control range	f <sub>cont</sub>	+/-100	-	-	x10 <sup>-6</sup>	-
Absolute pull range	APR	+/-50	-	-	x10 <sup>-6</sup>	V <sub>c</sub> =1.65V+/-1.65V
Modulation characteristics	BW	10	-	-	kHz	+/-3 dB
Input resistance	R <sub>in</sub>	100	-	-	kΩ	DC Level
Frequency change polarity	-					Positive polarity
Symmetry	SYM	45	-	55	%	V <sub>cc</sub> -1.3V, V <sub>c</sub> =V <sub>cc</sub> /2
Output voltage	VOH	V <sub>cc</sub> -1.1	-	-	V	-
	VOL	-	-	V <sub>cc</sub> -1.5	V	-
Output load condition	L <sub>ECL</sub>	-	50	-	Ω	Outputs terminated to V <sub>cc</sub> -2.0V
Input voltage	VIH	70%V <sub>cc</sub>	-	-	V	OE pin
	VIL	-	-	30%V <sub>cc</sub>	V	OE pin
Rise time	t <sub>r</sub>	-	-	0.5	ns	20 % to 80 % of amplitude
Fall time	t <sub>f</sub>	-	-	0.5	ns	20 % to 80 % of amplitude
Start-up time	t <sub>str</sub>	-	-	10	ms	t=0 at 90 %V <sub>cc</sub>
Phase noise	F <sub>CN</sub>	-	-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 <sub>PJ</sub>	-	0.15	-	ps	Offset Frequency: 12kHz to 20MHz
Frequency aging	f <sub>aging</sub>	-	-	-	x10 <sup>-6</sup>	Included in frequency tolerance

## 3. Timing chart

Output wave form



## 4. Test circuit



[Pin connection]

1.  $V_c$
2. OE
3. GND
4. OUT1 (Positive)
5. OUT2 (Negative)
6.  $V_{cc}$

## 3) Condition

## (1) Oscilloscope

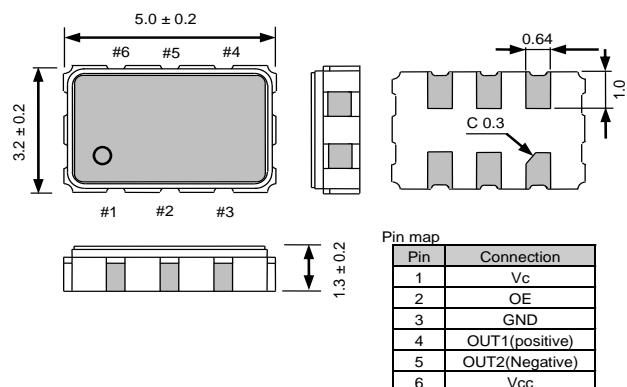
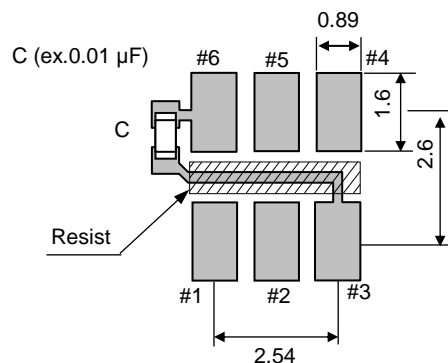
- Bandwidth should be 5 times higher than DUT's output frequency.
- Probe ground should be placed closely from test point and lead length should be as short as possible.

(2) By-pass capacitor (approx. 0.01  $\mu\text{F}$  to 0.1  $\mu\text{F}$ ) should be placed closely between  $V_{cc}$  and GND.

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

## (4) Power supply

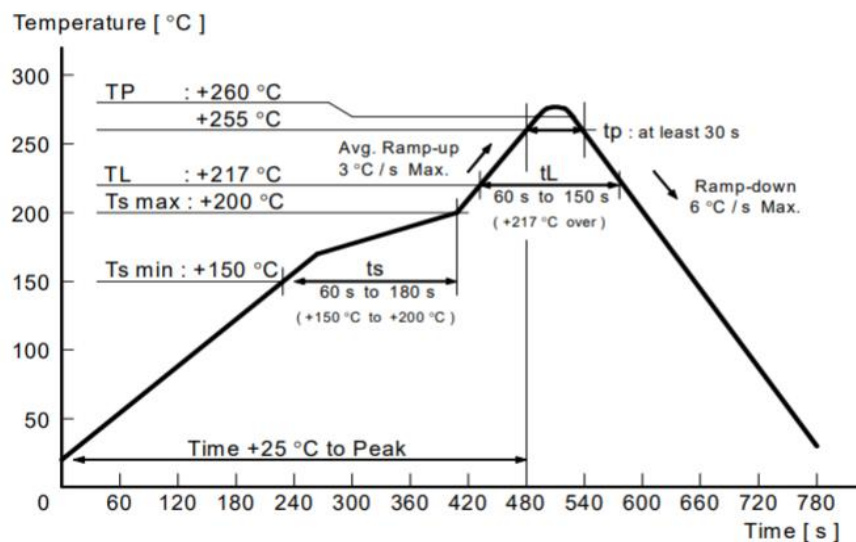
- Start up time (0 V  $\rightarrow$  90 %  $V_{cc}$ ) of power source should be more than 150  $\mu\text{s}$ .
- Impedance of power supply should be as low as possible.

**5.External dimensions (Unit: mm)****6.Footprint(Recommended) (Unit: mm)**

To maintain stable operation, provide a 0.01μF to 0.1μF 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"

X1G0049110030xx

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

## [ 2 ] Taping specification

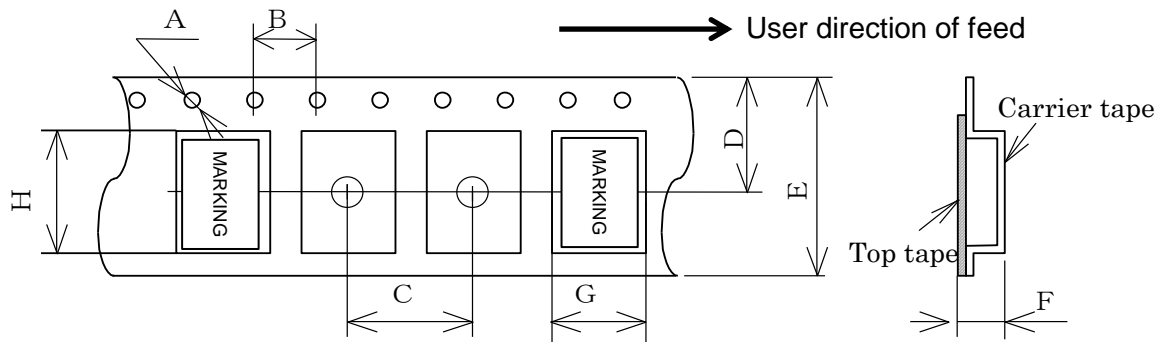
Subject to EIA-481 & IEC-60286

(1) Tape dimensions

Material of the Carrier Tape : PS

Material of the Top Tape : PET

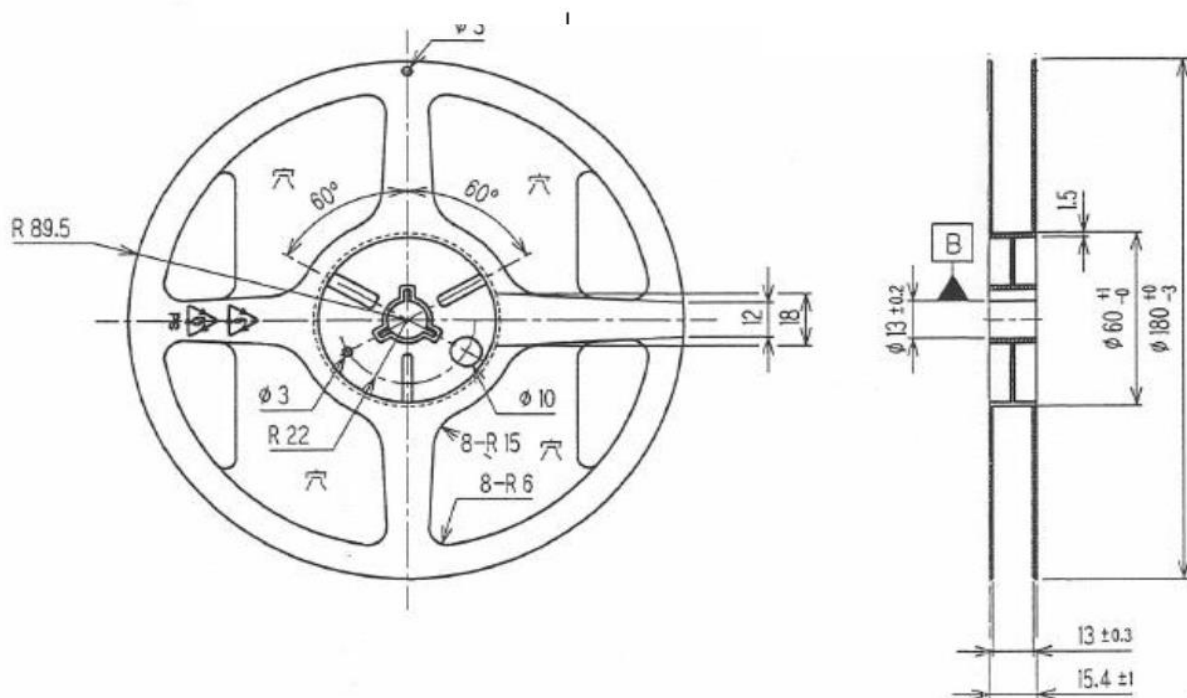
Unit: mm



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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