

Product name VG7050EBN 644.531300MHz CJGLBZ

Product code / Ordering code X1G0045510020xx

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.166mg

**1.Absolute maximum ratings**

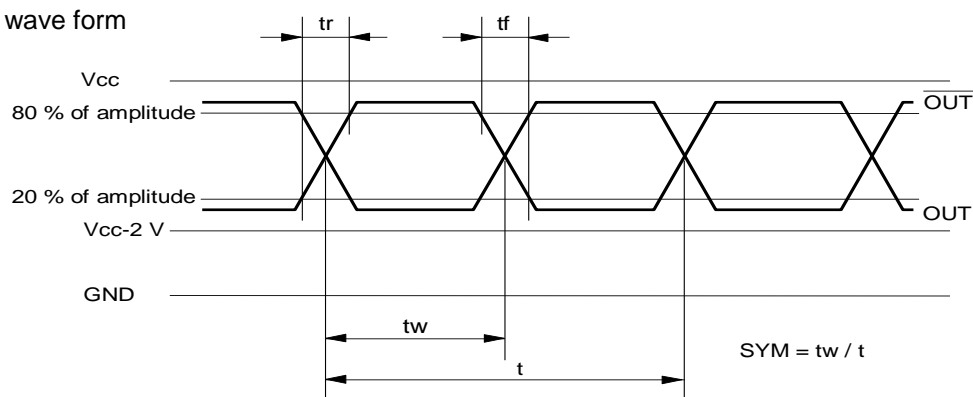
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions / Remarks
Maximum supply voltage	V <sub>cc</sub> -GND	-0.3	-	+4	V	-
Storage temperature	T <sub>stg</sub>	-55	-	+125	°C	-
Input voltage	V <sub>in</sub>	-0.3	-	V <sub>cc</sub> +0.3	V	V <sub>c</sub> pin

**2.Specifications(characteristics)**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions / Remarks
Output frequency	f <sub>0</sub>		644.5313		MHz	
Supply voltage	V <sub>cc</sub>	2.97	3.3	3.63	V	-
Control voltage	V <sub>c</sub>	0.3	1.65	3	V	V <sub>c</sub> =1.65V+/-1.35V
Operating temperature	T <sub>use</sub>	-40	-	+85	°C	-
Frequency tolerance	f <sub>tol</sub>	-50	-	+50	x10 <sup>-6</sup>	includes 10 years aging
Current consumption	I <sub>cc</sub>	-	-	90	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>	-
Modulation characteristics	BW	10	-	-	kHz	+/-3 dB
Input resistance	R <sub>in</sub>	5000	-	-	kΩ	DC Level
Frequency change polarity	-					Positive polarity
Symmetry	SYM	45	-	55	%	at outputs crossing point
Output voltage	V <sub>OH</sub>	V <sub>cc</sub> -1.025	-	-	V	-
	V <sub>OL</sub>	-	-	V <sub>cc</sub> -1.62	V	-
Output load condition	L <sub>ECL</sub>	-	50	-	Ω	Outputs terminated to V <sub>cc</sub> -2.0V
Input voltage	V <sub>IH</sub>	70%V <sub>cc</sub>	-	-	V	OE pin
	V <sub>IL</sub>	-	-	30%V <sub>cc</sub>	V	OE pin
Rise time	t <sub>r</sub>	-	-	0.4	ns	20 % to 80 % of amplitude
Fall time	t <sub>f</sub>	-	-	0.4	ns	20 % to 80 % of amplitude
Start-up time	t <sub>str</sub>	-	-	10	ms	-
Phase noise	F <sub>CN</sub>	-	-90	-	dBc/Hz	Offset 100Hz
		-	-107	-	dBc/Hz	Offset 1kHz
		-	-114	-	dBc/Hz	Offset 10kHz
		-	-118	-	dBc/Hz	Offset 100kHz
		-	-137	-	dBc/Hz	Offset 1MHz
Phase jitter	t <sub>PJ</sub>	-	0.2	-	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

#### 1) 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.

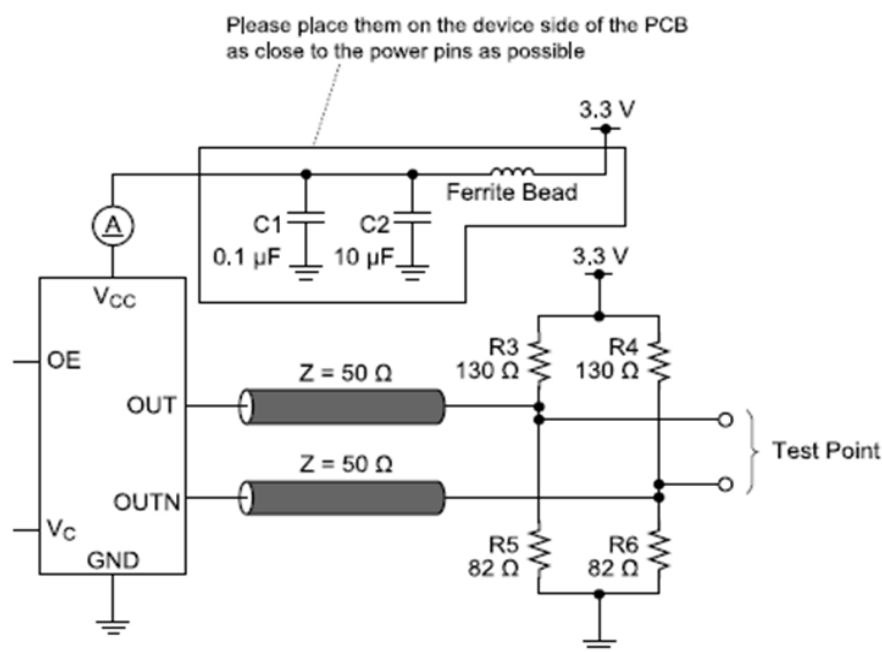
##### (2) By-pass capacitor (approx. 0.01mF~0.1 mF) should be placed closely between Vcc and GND.

##### (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 150us.
- Impedance of power supply should be as low as possible.

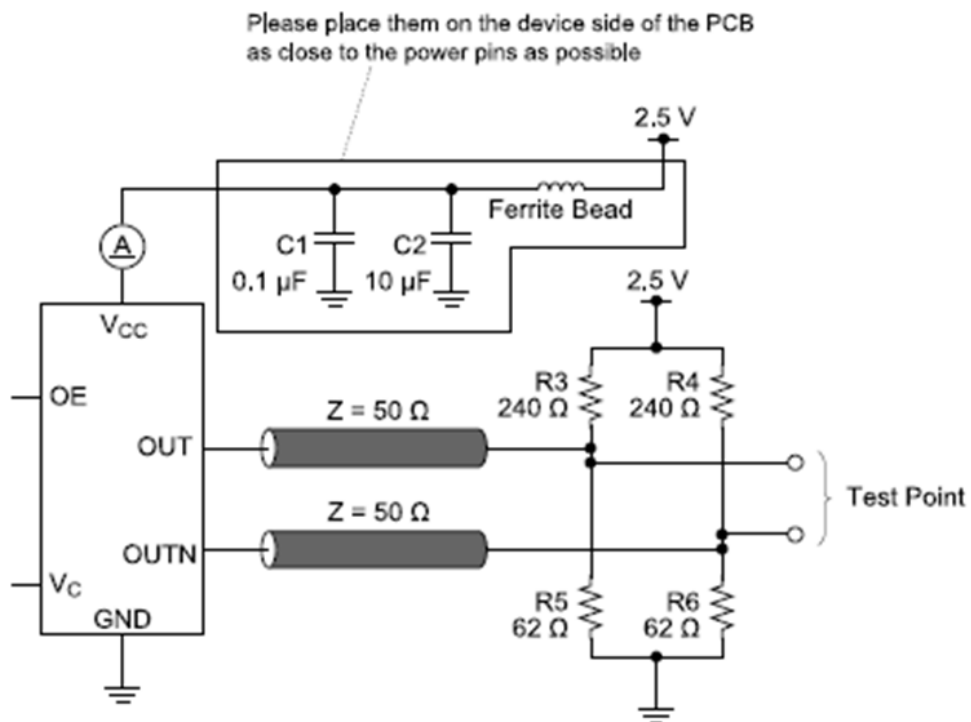
#### 2) Vcc = 3.3V



#### [Pin Connections]

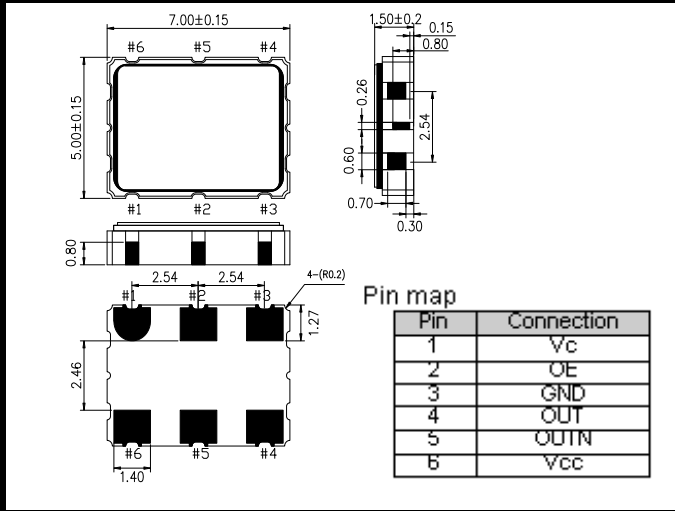
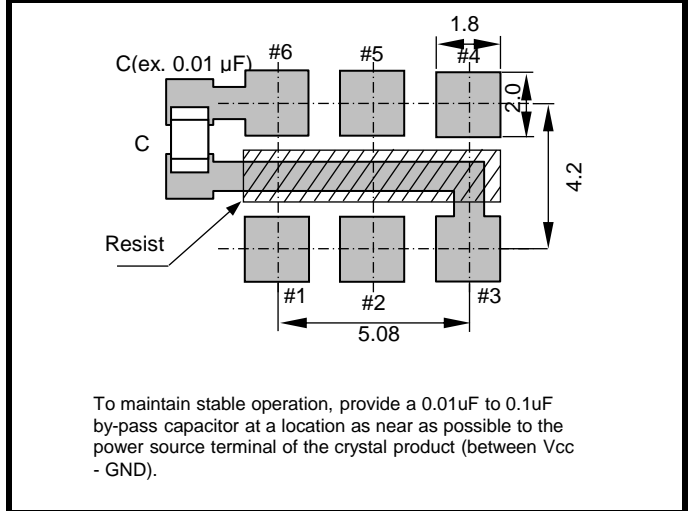
1. Vc
2. OE
3. GND
4. OUT1 (Positive)
5. OUT2 (Negative)
6. Vcc

3)  $V_{CC} = 2.5V$

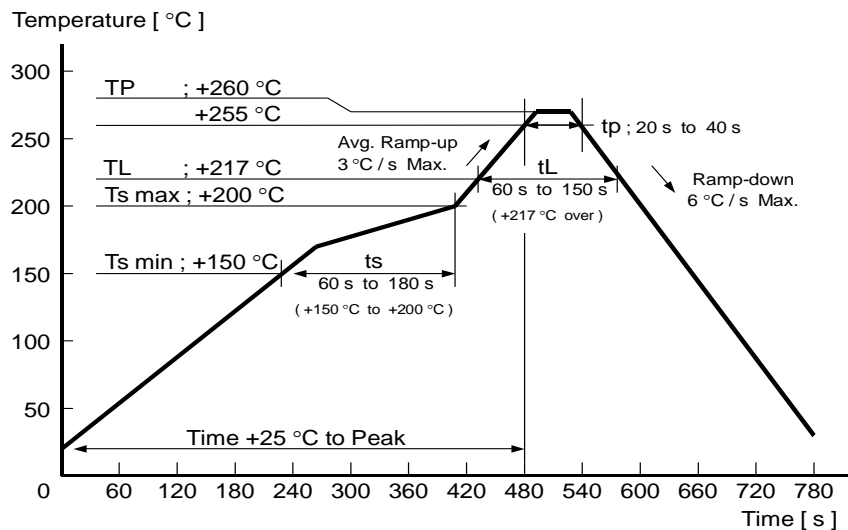


[Pin Connections]

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

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

X1G0045510020xx

Code	Condition	Code	Condition
00	1000pcs / Reel	12	250pcs / Reel
01	Any Q'ty vinyl bag(Tape cut)	13	500pcs / Reel
11	Any Q'ty / Reel		

## [ 2 ] Taping specification

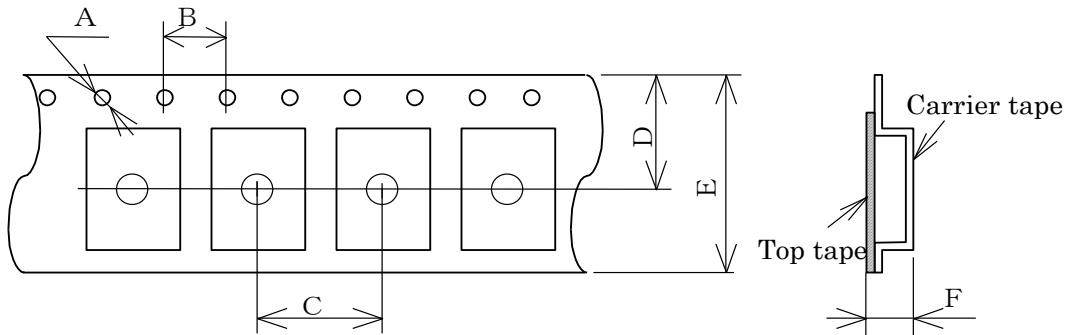
Subject to EIA-481 &amp; IEC-60286

## (1) Tape dimensions

Material of the Carrier Tape : PS

Material of the Top Tape : PET+PE

Unit: mm

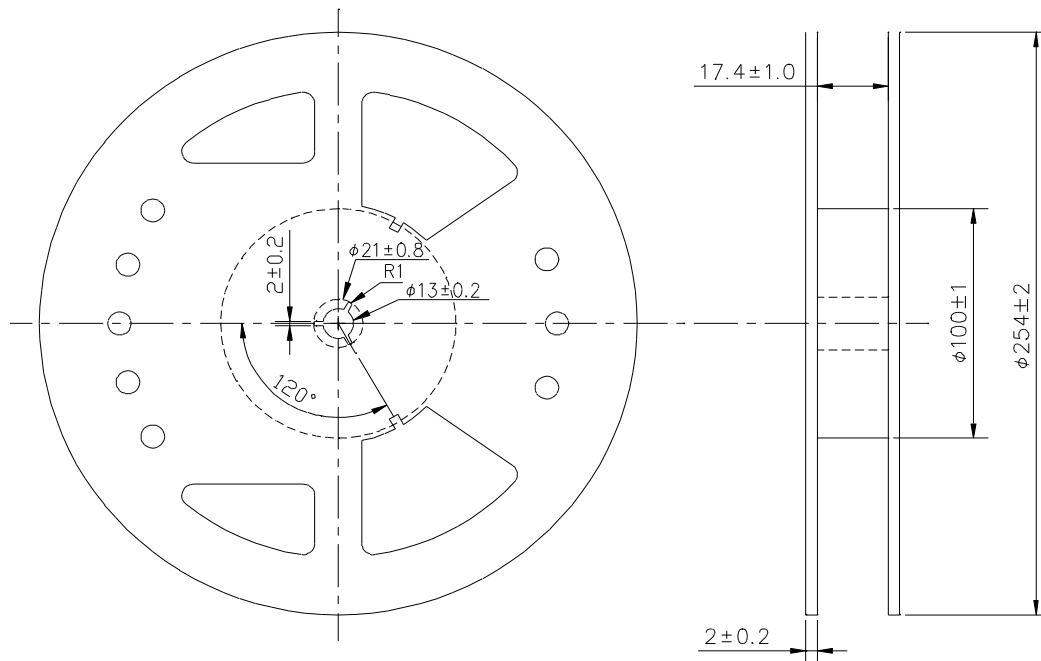


Symbol	A	B	C	D	E	F
Value	$\Phi 1.5$	4	8	9.25	16	2.3

## (2) Reel dimensions

Center material : PS

Material of the Reel : PS



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