

Voltage Controlled Crystal Oscillator (VCXO)

VG - 1230CA

Preliminary

- Reflowable and high density mounting type SMD.
- Using the heat-resisting type AT cut quartz crystal allows almost the same temperature soldering as universal SMD IC.
- Using C-MOS IC allows low current consumption.
- Operating supply voltage : 3.3V.
- Output enable function(OE) can be used for low current consumption applications.

■ Specifications

1. Absolute Maximum Ratings

Item	Symbol	Condition	MIN.	MAX.	Unit
Supply voltage	VDD	VDD-GND	-0.5	+7.0	V
Control voltage	VC	VC-GND	-0.5	VDD+0.3	V
Storage temperature	TSTG		-40	+85	°C
Soldering condition	TSOL	Under 240°C within 10 sec. × 2 times			

2. Operating Condition

Item	Symbol	Condition	MIN.	MAX.	Unit	
Supply voltage	VDD	VDD-GND	3.0	3.6	V	
Control voltage	VC	VC-GND	GND	VDD	V	
Operating temperature	TOPT		V	-20	+70	°C
			X	-40	+85	

3. Frequency Characteristics

Item	Symbol	Condition	Spec.	Unit	
Output Frequency	fo		1.000 ~ 41.000	MHz	
Frequency stability	$\Delta f/fo$	VC=1.8V	B	± 25 MAX.	ppm
			C	± 30 MAX.	
Aging	fa	Ta=25°C, 1st year	± 3 MAX.	ppm	

Note : Frequency stability is including calibration tolerance, reflow soldering drift, operating temperature range (Ta), operating voltage range and load change (CL).

4. Frequency Control

Item	Symbol	Condition	MIN.	MAX.	Unit
Input impedance	Zin	VC-GND (DC)	10		MΩ
Frequency adjustment range	Δf_{vc}	VC=0V to 3V	1M to 30M	K	ppm
			30M<	H	
Transfer function			Positive		

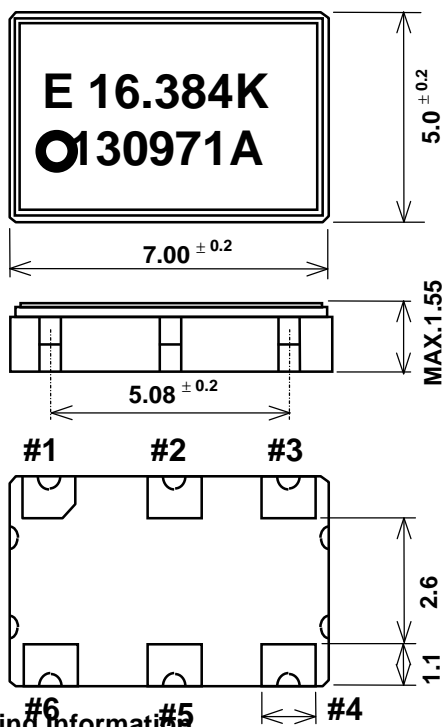
5. Electrical Characteristics

Item	Symbol	Condition	MIN.	MAX.	Unit
Supply current	IDD	VDD=3.3V, No load		10	mA
Start-up time	tOSC	VDD=3.0V to be 0 sec.		10	ms

6. Output Characteristics

Item	Symbol	Condition	MIN.	MAX.	Unit
Output load	CL	C-MOS level		15	pF
Duty	T _w /T	1/2V _{DD} level	40	60	%
High output voltage	V _{OH}	I _{OH} =-8mA	V _{DD} -0.4V		V
Low output voltage	V _{OL}	I _{OL} =8mA		0.4V	V
Output rise time	t _{TLH}	20%→80% V _{DD}		4	ns
Output fall time	t _{THL}	80%→20% V _{DD}		4	ns
Output disable current	IOE	OE=GND		7	mA
Output enable/disable input voltage	V _{IH}	OE terminal	0.7xV _{DD}		V
	V _{IL}			0.2xV _{DD}	V

External Dimensions



Marking layout

Symbol Mark Frequency

○ Product number

No.	Pin terminal
1	VC(Voltage Control)
2	NC
3	Gnd
4	Out
5	OE
6	VDD

Unit : mm

Numbering Information

E 16.384 K : (1)Symbol (2)Output Frequency (MHz) (3)Design Code

(1) (2) (3)

130 971A : (4)Parts Name(1 2 3 0) (5)Product number

(4) (5)

Design Code :

Freq.	Code	Δf/fo	T _{OPT}	Δf/fv
1M to 30M	B	B	V	K
	K	C	X	K
30M<	D	B	V	H
	M	C	X	H