

Voltage Controlled Crystal Oscillator (VCXO)

VG - 1210CA

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 : 5.0V.
- 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	4.5	5.5	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	$\Delta f/f_0$	VC=2.5V	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=2.5V±2V	1M to 27M	N	±100	ppm
			1M to 41M	K	±75	
Transfer function			Positive			

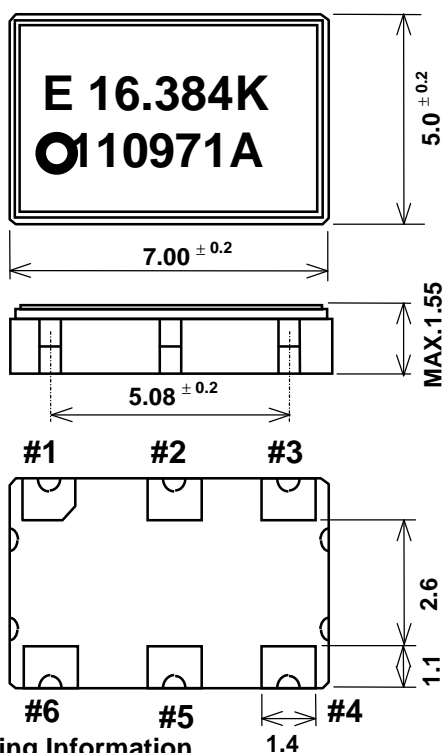
5. Electrical Characteristics

Item	Symbol	Condition	MIN.	MAX.	Unit
Supply current	IDD	VDD=5.0V, No load		20	mA
Start-up time	tOSC	VDD=4.5V to be 0 sec.		10	ms

6. Output Characteristics

Item	Symbol	Condition	MIN.	MAX.	Unit
Output load	CL	C-MOS level		15	pF
Duty	Tw/T	1/2VDD level	40	60	%
High output voltage	VOH	IOH=-16mA	VDD-0.4V		V
Low output voltage	VOL	IOL=16mA		0.4V	V
Output rise time	tTLH	20%→80% VDD		4	ns
Output fall time	tTHL	80%→20% VDD		4	ns
Output disable current	IOE	OE=GND		15	mA
Output enable/disable input voltage	VIH	OE terminal	2.0		V
	VIL				0.8

External Dimensions



Marking layout

Symbol	Mark	Frequency
O	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)
110 971A : (4)Parts Name(1 2 1 0) (5)Product number
 (4) (5)

Design Code :

Freq.	Code	$\Delta f/fo$	TOPT	Δfvc
1M to 27M	A	B	V	N
	J	C	X	N
1M to 41M	B	B	V	K
	K	C	X	K