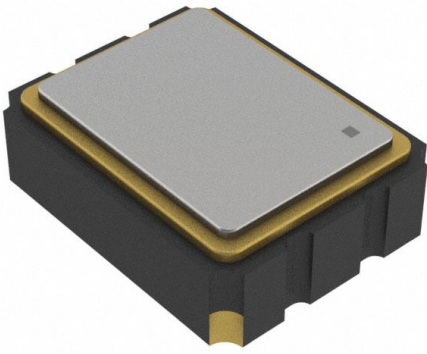


FK2500010 Datasheet

www.digi-electronics.com



<https://www.DiGi-Electronics.com>

DiGi Electronics Part Number	FK2500010-DG
Manufacturer	Diodes Incorporated
Manufacturer Product Number	FK2500010
Description	XTAL OSC XO 25.0000MHZ CMOS
Detailed Description	25 MHz XO (Standard) CMOS Oscillator 3.3V 4-SMD , No Lead



Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

DiGi is a global authorized distributor of electronic components.

Purchase and inquiry

Manufacturer Product Number:

FK2500010

Series:

SaRonix-eCera™ FK

Base Resonator:

Crystal

Frequency:

25 MHz

Voltage - Supply:

3.3V

Operating Temperature:

-40°C ~ 85°C

Size / Dimension:

0.126" L x 0.098" W (3.20mm x 2.50mm)

Manufacturer:

Diodes Incorporated

Product Status:

Active

Type:

XO (Standard)

Output:

CMOS

Absolute Pull Range (APR):

-

Package / Case:

4-SMD, No Lead

Height - Seated (Max):

0.045" (1.15mm)

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8542.39.0001

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99



A Product Line of
Diodes Incorporated



PRODUCT SPECIFICATION

NOMINAL FREQUENCY	25.000000 MHz
PRODUCT TYPE	TYPE FK 3.2x2.5 SEAM SEALED CRYSTAL CLOCK OSCILLATOR
SPEC. NO. (P/N)	FK2500010
ISSUE DATE	October 11, 2022
VERSION	D

Diodes Incorporated

No.2, Ziqiang 5th Rd., Zhongli Industrial Park,
Zhongli Dist., Taoyuan City 32063, Taiwan (R.O.C.)
TEL: 886-3-451-8888
FAX: 886-3-461-3865
<https://www.diodes.com>

*Pb-free
*RoHS Compliant
*HF-Halogen Free
*REACH Compliant
*MSL: Level 1

TYPE FK 3.2x2.5 SEAM SEALED CRYSTAL CLOCK OSCILLATOR

FK2500010

VER. D 11-Oct-22

VERSION HISTORY

Version No.	Version Date	Description	Notes
A	Jun.2,2008	Initial Release	
B	Jan.7,2015	1. Added Start up time: 10ms max 2. Updated marking, Suggested IR Reflow Profile & format	
C	May.15,2018	Updated Logo	
D	Oct.11,2022	1. Added Jitter, Phase:1ps max 2. Added Jitter, Accumulated: 5ps max & Jitter, Peak to Peak: 50ps max	



TYPE FK 3.2x2.5 SEAM SEALED CRYSTAL CLOCK OSCILLATOR**FK2500010**

VER. D 11-Oct-22

ELECTRICAL SPECIFICATIONS**SRe Part Number : FK2500010**

Item	Symbol	Specifications	Units	Notes
Nominal Frequency	F _o	25.000000	MHz	
Frequency Stability	FT	± 50	ppm	**See note
Operating Temperature Range	TR	-40 to +85	°C	
Supply Voltage	V _{DD}	+3.3 ± 5.0%	V	
Logic Type	LT	LVCMOS		
Supply Current, Output Enabled	I _{DD} /OE	10	mA	Max.
Supply Current, Output Disabled	I _{DD} /OD	10	µA	Max.
Duty Cycle (Symmetry)	DC/SY	45 / 55	%	Measured 50% of Waveform
Rise / Fall Time	T _R /T _F	5	ns	Max. measured 10/90% of Waveform
Output Voltage "0" Level	V _{OL}	10% V _{DD}	V	Max at I _{OL} = 4.0mA Min.
Output Voltage "1" Level	V _{OH}	90% V _{DD}	V	Min at I _{OH} = -4.0mA Max.
Output Load	CL	15	pF	Max.
Jitter, Phase	RMS	1	ps	Max. 12kHz ~ 5MHz Frequency Band
Jitter, Accumulated	RMS(1-σ)	5	ps	Max. 20,000 Consecutive Periods
Jitter, Peak to Peak	Pk-Pk	50	ps	Max. 100,000 Random Periods
Start Up Time		10	ms	Max.
Storage Temperature Range		-55 to +125	°C	

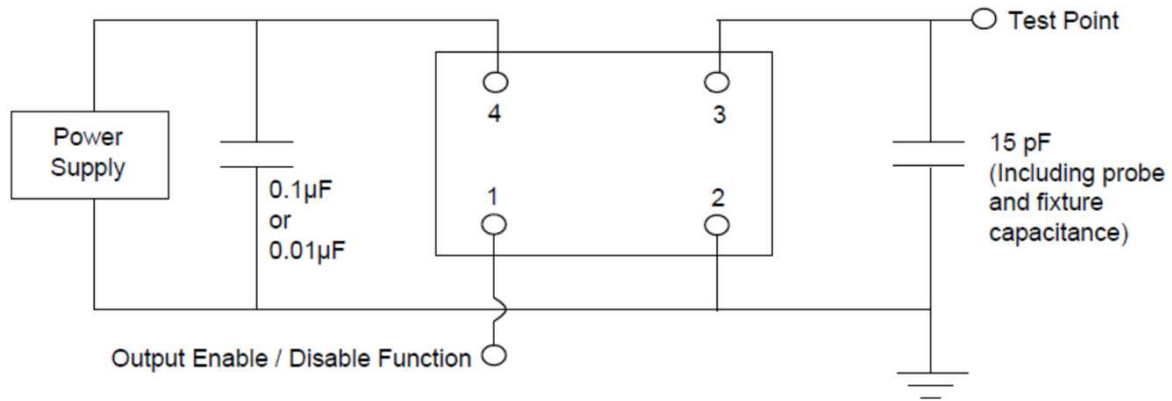
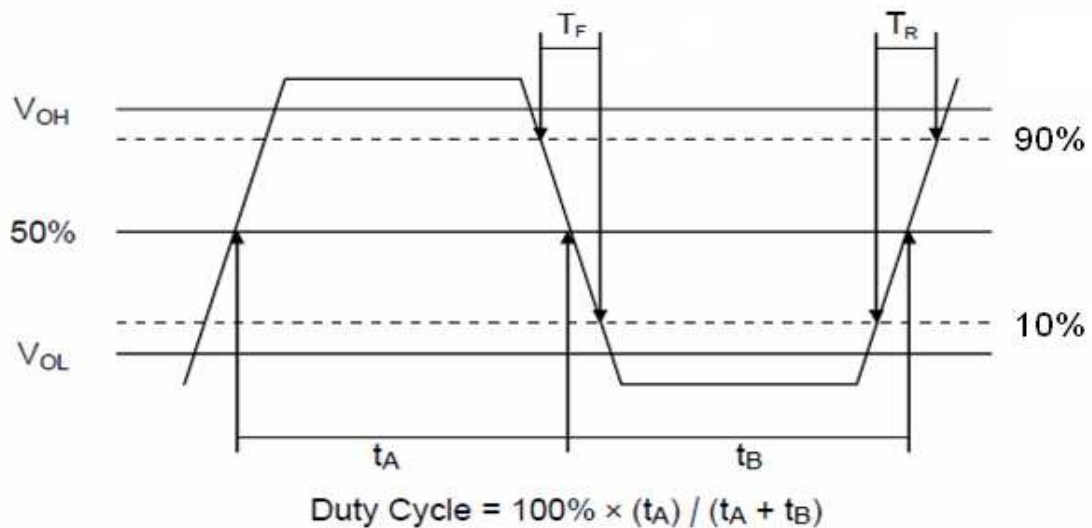
****Stability includes all combinations of Operating Temperature, Load changes, rated Input (Supply) Voltage changes, Initial Calibration Tolerance (25°C), Aging (1 year at 25°C Average Effective Ambient Temperature), Shock and Vibration.**

Output Enable / Disable Function

Parameter	Min.	Typ.	Max.	Units	Notes
Input Voltage (Pin1), Output Enable	0.7V _{DD}			V	Or Open
Input Voltage (Pin1), Output Disable (low power standby)			0.3V _{DD}	V	Output is Hi-Z
Internal Pullup Resistance	30			KΩ	
Output Disable Delay			50	ns	

TYPE FK 3.2×2.5 SEAM SEALED CRYSTAL CLOCK OSCILLATOR**FK2500010**

VER. D 11-Oct-22

TEST CIRCUIT**OUTPUT WAVEFORM**

TYPE FK 3.2×2.5 SEAM SEALED CRYSTAL CLOCK OSCILLATOR**FK2500010**

VER. D 11-Oct-22

RELIABILITY SPECIFICATIONS**ENVIRONMENTAL:**

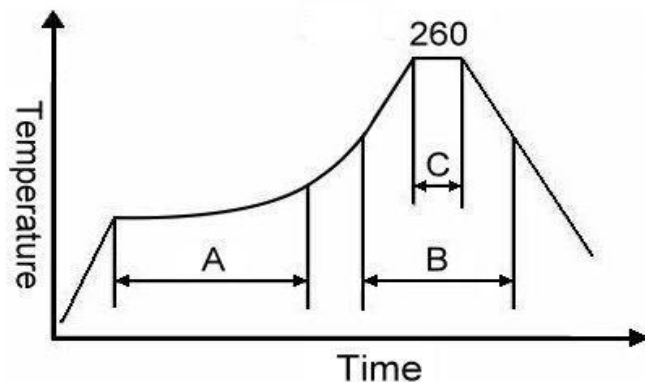
- a) THERMAL SHOCK: MIL-STD-883, Method 1011, Condition A
- b) MOISTURE RESISTANCE: MIL-STD-883, Method 1004
- c) VIBRATION: MIL-STD-883, Method 2007, Condition A
- d) RESISTANCE TO SOLDERING HEAT: J-STD-020D Table 5-2 Pb-free devices
(except 2 cycles max)
- e) HAZARDOUS SUBSTANCE: Pb - free and RoHS Compliant.
- f) ESD Testing: JESD22 A114 / JESD22 C101
- g) Latch up Testing: JESD78

MECHANICAL:

- a) SHOCK: MIL-STD-883, Method 2002, Condition B
- b) SOLDERABILITY: JESD22-B102-D Method 2 (Preconditioning E)
- c) TERMINAL STRENGTH: MIL-STD-883, Method 2004, Test Condition D
- d) GROSS LEAK: MIL-STD-883, Method 1014, Condition C
- e) FINE LEAK: MIL-STD-883, Method 1014, Condition A2, $R1=2 \times 10^{-8}$ atm cc/s
- f) SOLVENT RESISTANCE: MIL-STD-202, Method 215

SUGGESTED IR REFLOW PROFILE

*As per IPC-JEDEC J-STD-020D



Note:

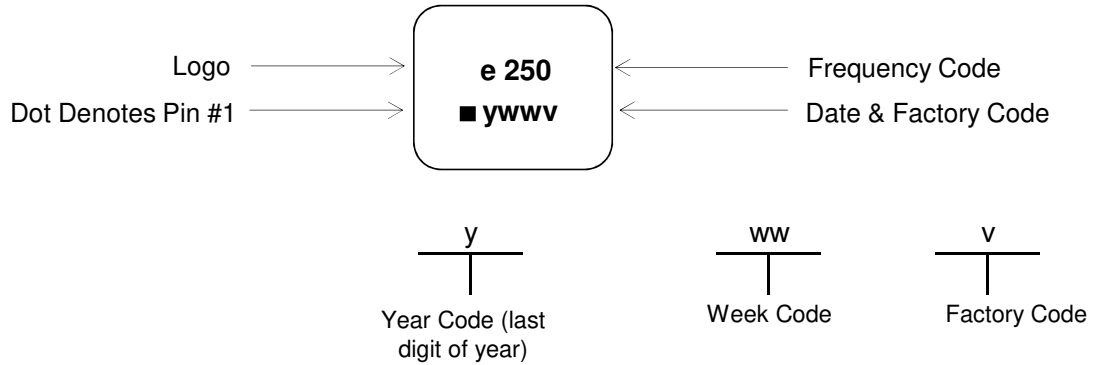
	Stage	Temperature	Time
A	Preheat	150~200°C	60~120 Sec
B	Primary Heat	217°C	60~150 Sec
C	Peak	260°C	10 Sec

TYPE FK 3.2x2.5 SEAM SEALED CRYSTAL CLOCK OSCILLATOR

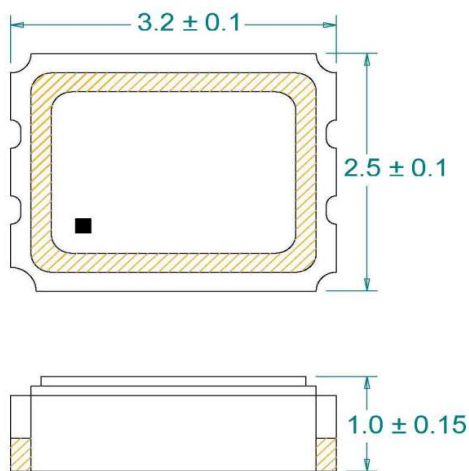
FK2500010

VER. D 11-Oct-22

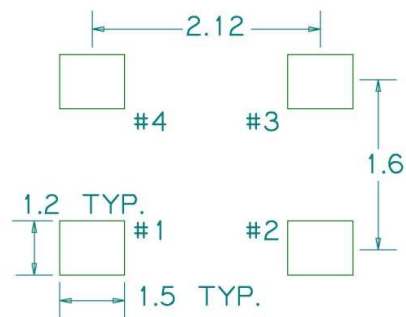
MARKING



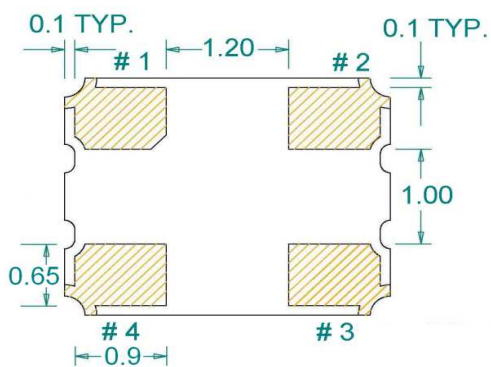
MECHANICAL DRAWINGS (Scale: None. Dimensions are in mm.)



Recommended Land Pattern*



*External high-frequency power decoupling is recommended. (see test circuit for minimum recommendation). To ensure optimal performance, do not route traces beneath the package.

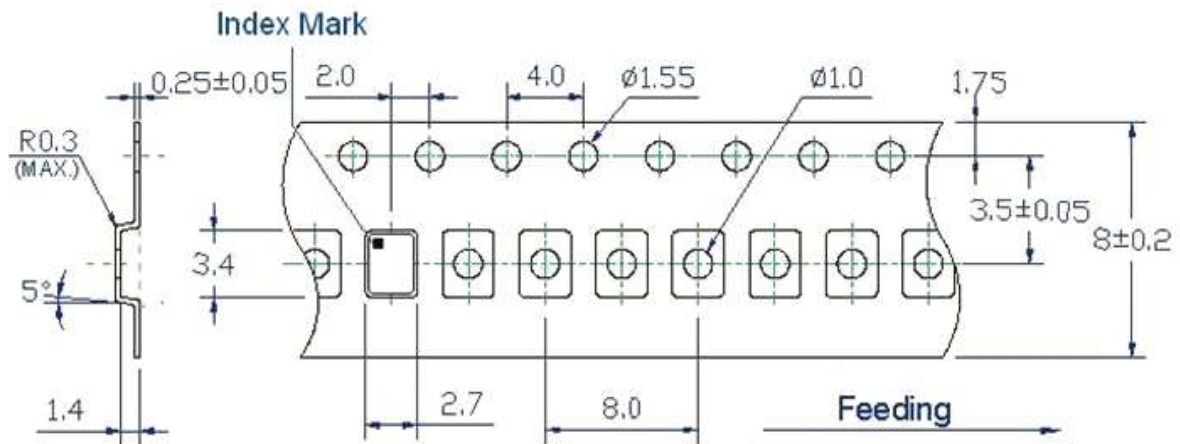


(Bottom View)

Pin	Function
1	OE
2	Ground
3	Clock Output
4	V _{DD}

TYPE FK 3.2x2.5 SEAM SEALED CRYSTAL CLOCK OSCILLATOR**FK2500010**

VER. D 11-Oct-22

TAPE&REEL

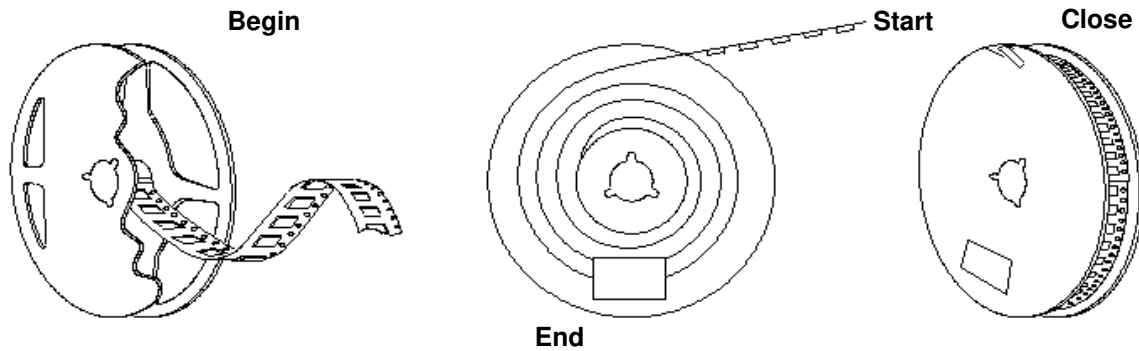
1. 230mm minimum leader which consist of carrier and/or tape followed by a minimum of 160mm of empty carrier tape sealed with cover tape.
2. 160mm minimum trailer of empty carrier tape sealed with cover tape.

TYPE FK 3.2x2.5 SEAM SEALED CRYSTAL CLOCK OSCILLATOR

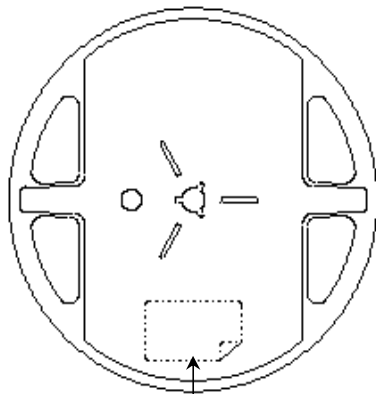
FK2500010

VER. D 11-Oct-22

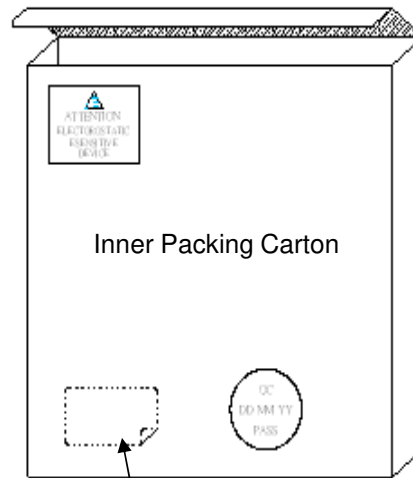
PACKING



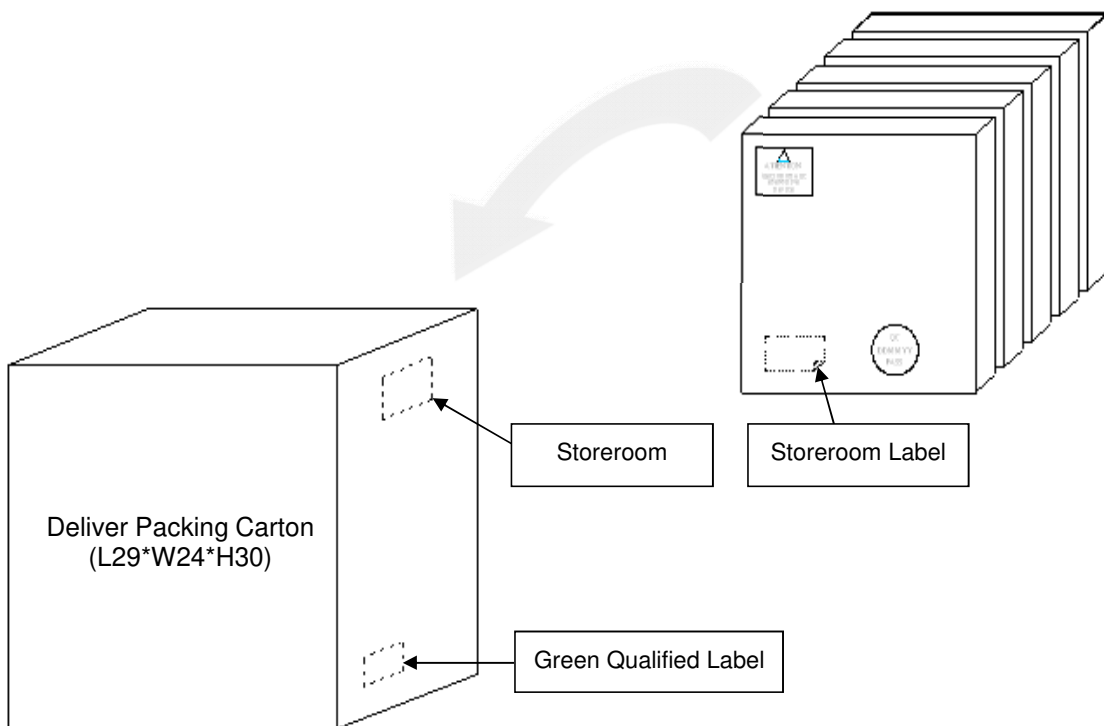
3000pcs-Product Tape



Blue Qualified Label



Storeroom Label



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