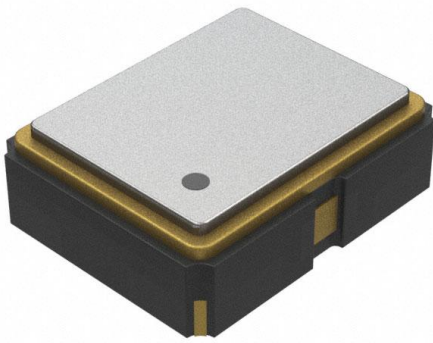


FJ5000024 Datasheet

www.digi-electronics.com



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

DiGi Electronics Part Number	FJ5000024-DG
Manufacturer	Diodes Incorporated
Manufacturer Product Number	FJ5000024
Description	XTAL OSC XO 50.0000MHZ CMOS SMD
Detailed Description	50 MHz XO (Standard) CMOS Oscillator 2.5V 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:

FJ5000024

Series:

SaRonix-eCera™ FJ

Base Resonator:

Crystal

Frequency:

50 MHz

Voltage - Supply:

2.5V

Operating Temperature:

-20°C ~ 70°C

Package / Case:

4-SMD, No Lead

Height - Seated (Max):

0.039" (1.00mm)

Manufacturer:

Diodes Incorporated

Product Status:

Active

Type:

XO (Standard)

Output:

CMOS

Absolute Pull Range (APR):

-

Mounting Type:

Surface Mount

Size / Dimension:

0.098" L x 0.079" W (2.50mm x 2.00mm)

Base Product Number:

FJ5000024

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



SPECIFICATION FOR APPROVAL

CUSTOMER	
NOMINAL FREQUENCY	50.000000 MHz
PRODUCT TYPE	TYPE FJ 2.5x2.0 SEAM SEALED CRYSTAL CLOCK OSCILLATOR
SPEC. NO. (P/N)	FJ5000024
CUSTOMER P/N	
ISSUE DATE	March 9, 2018
VERSION	B

APPROVED	PREPARED	QA

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

TYPE FJ 2.5x2.0 SEAM SEALED CRYSTAL CLOCK OSCILLATOR**FJ5000024**

VER. B 9-Mar-18

ELECTRICAL SPECIFICATIONS**SRe Part Number : FJ5000024**

Item	Symbol	Specifications	Units	Notes
Nominal Frequency	F _o	50.000000	MHz	
Frequency Stability	FT	± 20	ppm	**See note
Operating Temperature Range	TR	-20 to +70	°C	
Supply Voltage	V _{DD}	+1.6 to +3.6	V	at +2.5V Typ.
Logic Type	LT	LVC MOS		
Supply Current, Output Enabled	I _{DD} /OE	8	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	4	ns	Max. measured 20 / 80% of Waveform
Output Voltage "0" Level	V _{OL}	10% V _{DD}	V	Max
Output Voltage "1" Level	V _{OH}	90% V _{DD}	V	Min
Output Load	CL	15	pF	Max
Jitter, Phase	RMS	1	ps	Max. 12KHz ~ 20MHz Frequency Band
Jitter, Accumulated	RMS(1-σ)	5	ps	Typ. 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	

※ This product doesn't include harmful substance that stipulated by SONY SS-00259 Level 1 and S-AT2-001 Level 1 standard. RoHS Compliant (Pb - Free).

**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

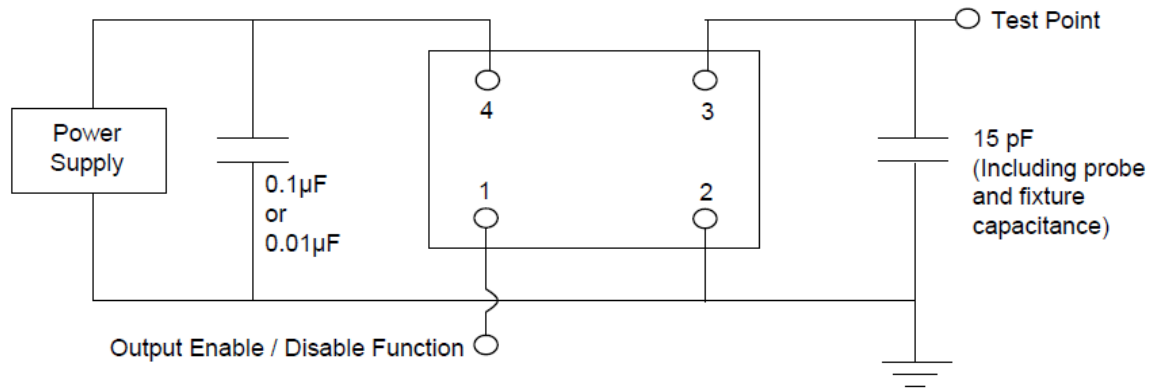
Parameter	Min.	Typ.	Max.	Units	Notes
Input Voltage (Pin1), Output Enable	0.7V _{DD}			V	Or Open
Input Voltage (Pin1), Output Disable (low power standby)			0.3V _{DD}	V	Output is Hi-Z
Internal Pullup Resistance	30			KΩ	
Output Disable Delay			50	ns	

TYPE FJ 2.5x2.0 SEAM SEALED CRYSTAL CLOCK OSCILLATOR

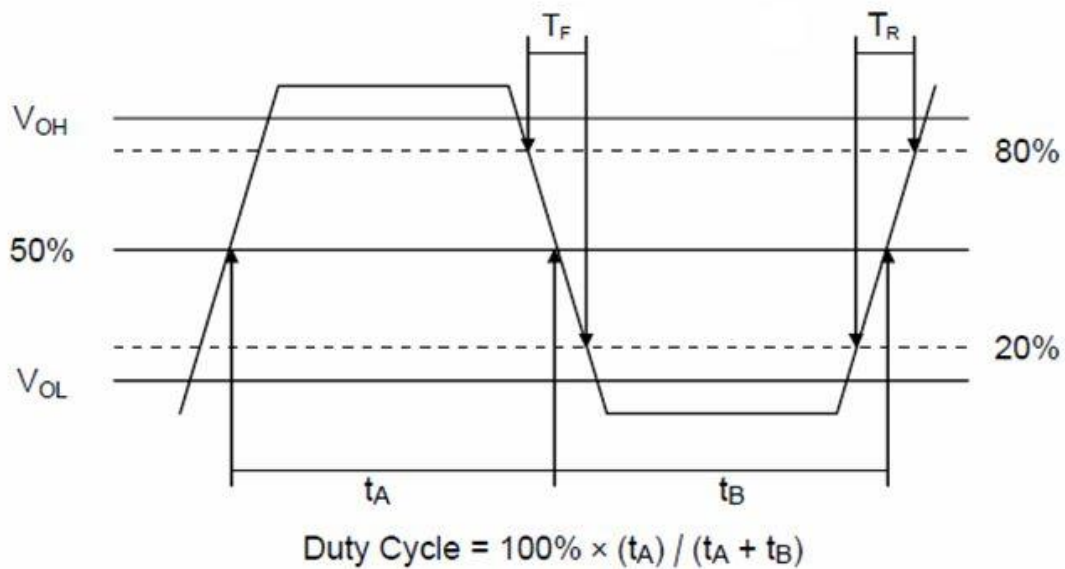
FJ5000024

VER. B 9-Mar-18

TEST CIRCUIT



OUTPUT WAVEFORM



TYPE FJ 2.5x2.0 SEAM SEALED CRYSTAL CLOCK OSCILLATOR**FJ5000024**

VER. B 9-Mar-18

RELIABILITY SPECIFICATIONS**ENVIRONMENTAL:**

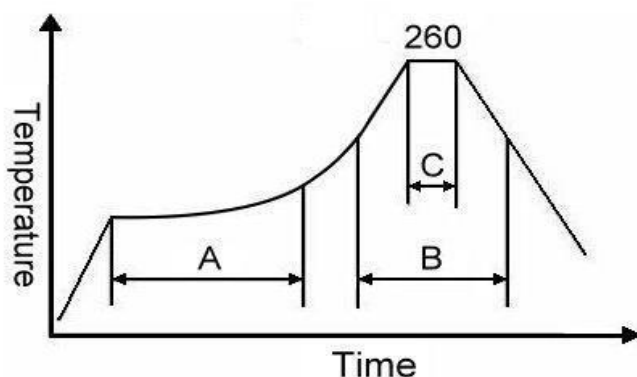
- a) THERMAL SHOCK: MIL-STD-883, Method 1011, Condition A
- b) MOISTURE RESISTANCE: MIL-STD-883, Method 1004
- c) VIBRATION: MIL-STD-883, Method 2007, Condition A
- d) RESISTANCE TO SOLDERING HEAT: J-STD-020D Table 5-2 Pb-free devices (except 2 cycles max)
- e) HAZARDOUS SUBSTANCE: Pb - free and RoHS/Green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

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:

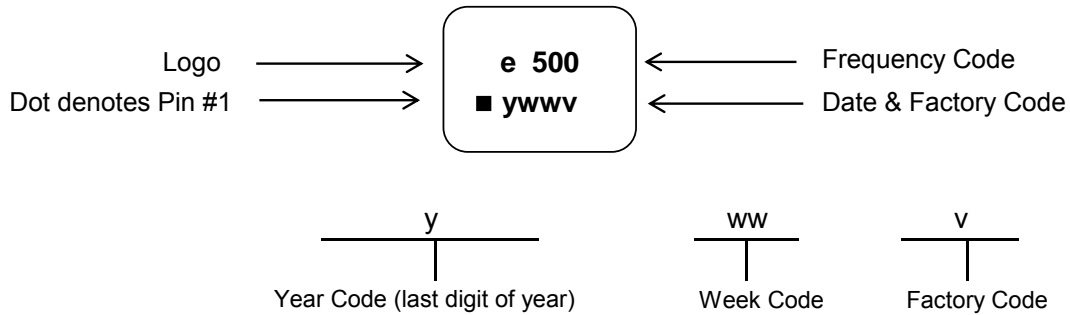
	Stage	Temperature	Time
A	Preheat	150~200°C	60~120 Sec
B	Primary Heat	217°C	60~150 Sec
C	Peak	260°C	10 Sec

TYPE FJ 2.5x2.0 SEAM SEALED CRYSTAL CLOCK OSCILLATOR

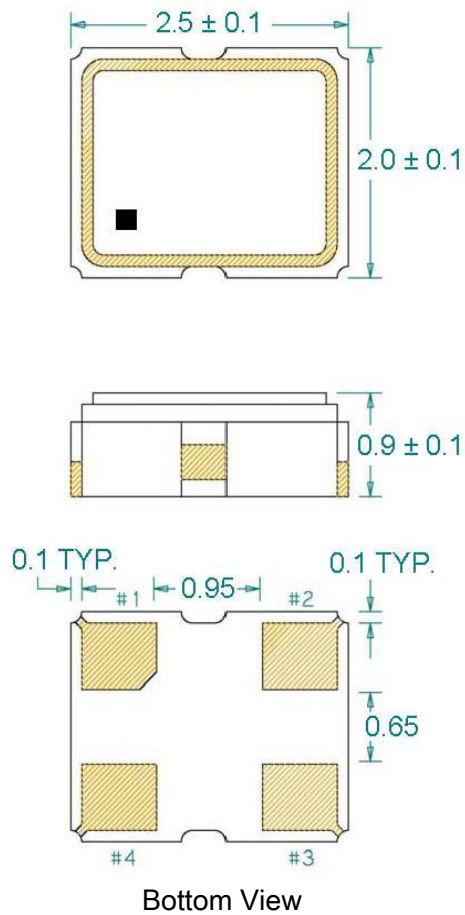
FJ5000024

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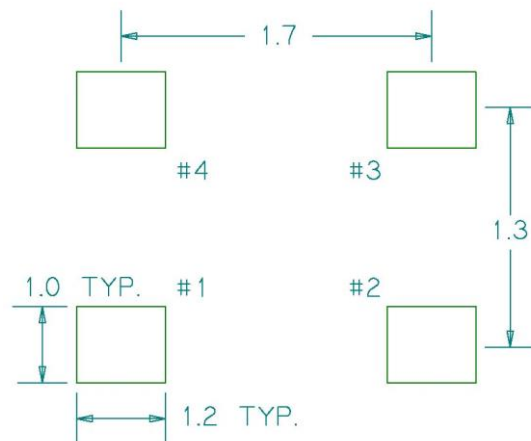
MARKING



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.

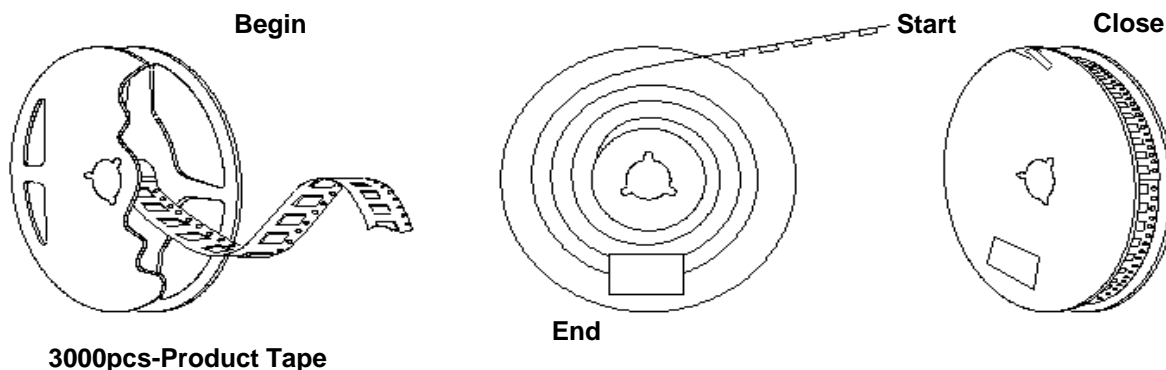
Pin	Function
1	OE
2	Ground
3	Clock Output
4	V _{DD}

TYPE FJ 2.5x2.0 SEAM SEALED CRYSTAL CLOCK OSCILLATOR

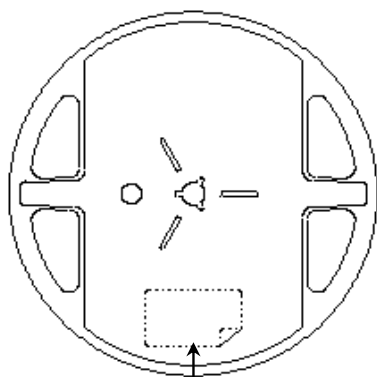
FJ5000024

VER. B 9-Mar-18

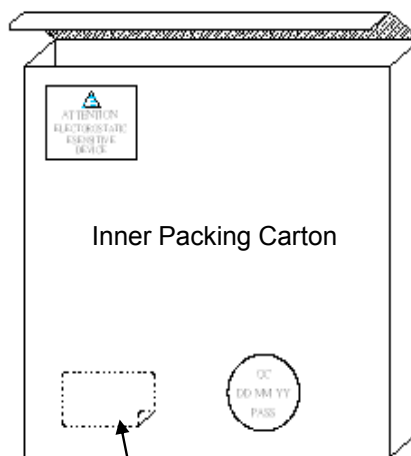
PACKING



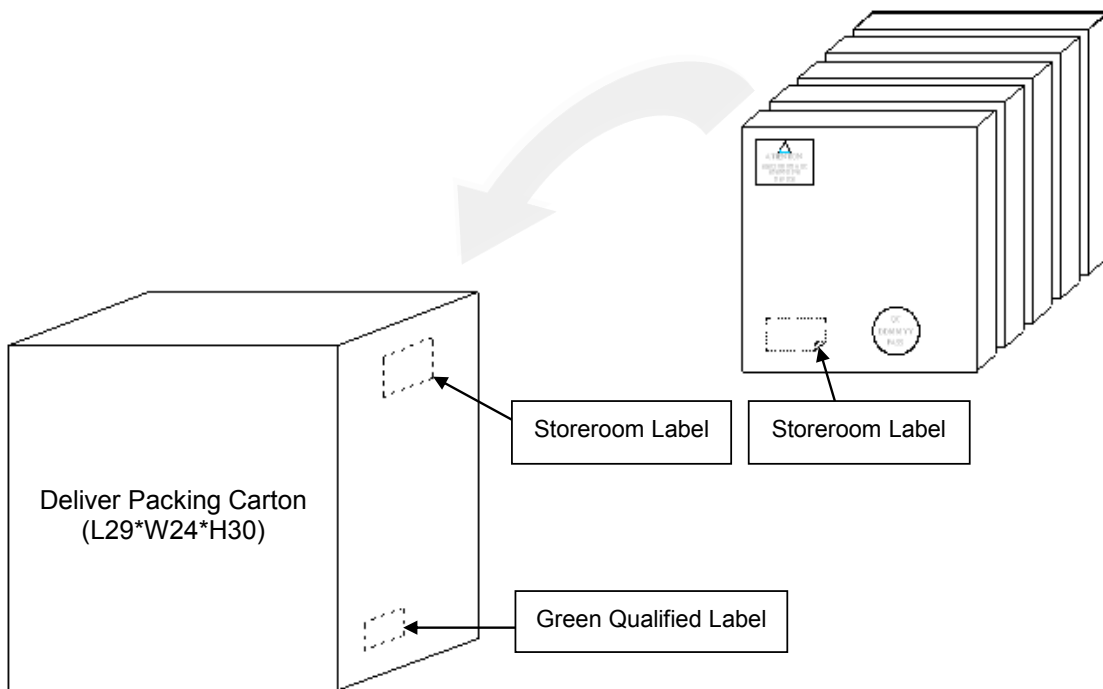
3000pcs-Product Tape



Blue Qualified Label



Storeroom Label



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