



A Product Line of
Diodes Incorporated



SPECIFICATION FOR APPROVAL

CUSTOMER

NOMINAL FREQUENCY

24.000000 MHz

PRODUCT TYPE

TYPE JT 2.5X2.0 TEMPERATURE
COMPENSATED CRYSTAL OSCILLATOR

SPEC. NO. (P/N)

JT25240001

CUSTOMER P/N

ISSUE DATE

November 20, 2020

VERSION

A

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 JT 2.5X2.0 TEMPERATURE COMPENSATED CRYSTAL OSCILLATOR

JT25240001

VER. A 20-Nov-20

VERSION HISTORY

[illegible]

TYPE JT 2.5X2.0 TEMPERATURE COMPENSATED CRYSTAL OSCILLATOR

JT25240001

VER. A 20-Nov-20

ELECTRICAL SPECIFICATIONS

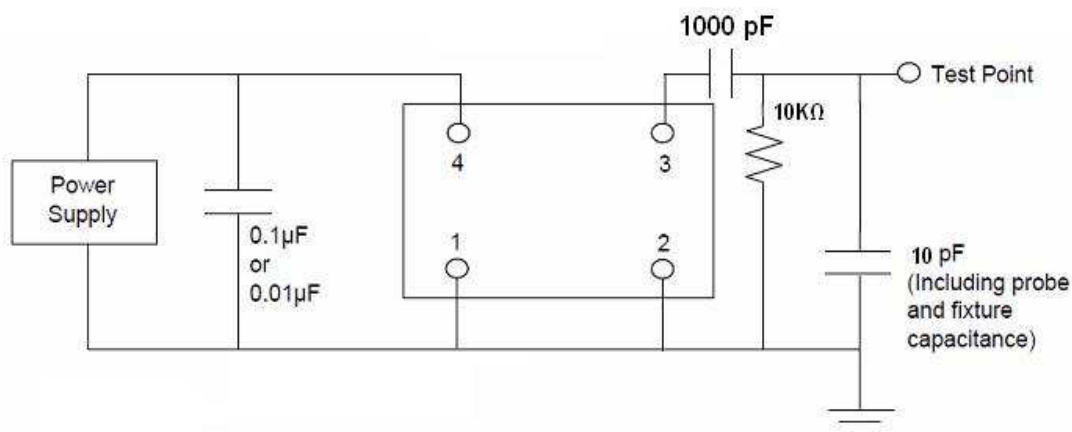
SRe Part Number : JT25240001

Item	Symbol	Specifications	Units	Notes
Nominal Frequency	Fo	24.000000	MHz	
Operating Temperature Range	TR	-40 to +85	°C	
Storage Temperature Range		-40 to +85	°C	
Supply Voltage	V _{DD}	+2.5 ± 5.0%	V	
Frequency Stability	FT	± 0.5	ppm	vs. Temperature (Refer to the mid-point between minimum and maximum frequency values over the specified temperature range)
Frequency Stability		± 0.2	ppm	vs. Load varied 10pF//10kΩ±10%
Frequency Stability		± 0.1	ppm	vs. Supply Voltage varied V _{dd} ±5% at 25°C
Frequency Tolerance		± 2.0	ppm	Max. After 2 times reflow (Refer to nominal frequency)
Static Temperature Hysteresis		± 0.6	ppm	Max.
Aging		±1.5	ppm	Max, the first 5 years at 25°C
Logic Type	LT	Clipped Sinewave		
Supply Current	I _{DD}	1.5	mA	Max. **See Note
Start Up Time v.s Output Level		2.0	msec	Max, 90% of specified output level
Output Voltage		0.8 to 1.4	Vp-p	
Output Load Resistance		10	KΩ	9KΩ Min / 11KΩ Max
Output Load Capacitance		10	pF	9pF Min / 11pF Max
Harmonics		-8	dBc	Max.
Phase Noise		-135	dBc/Hz	Typ., at 1kHz offset

※ 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).

** Note: This is the static current and there is a transient current of 5mA max while V_{DD} startup.

TEST CIRCUIT



RELIABILITY SPECIFICATIONS

1. Initial

- 1.1 Physical Dimensions: Mil Std 883 M2016
- 1.2 Gross/Fine Leak: JESD22-A109, Mil Std 883 M1014
- 1.3 Electrical Characterization: Per Specification/Datasheet
- 1.4 Electrical Test: Per Specification/Datasheet

2. Mechanical

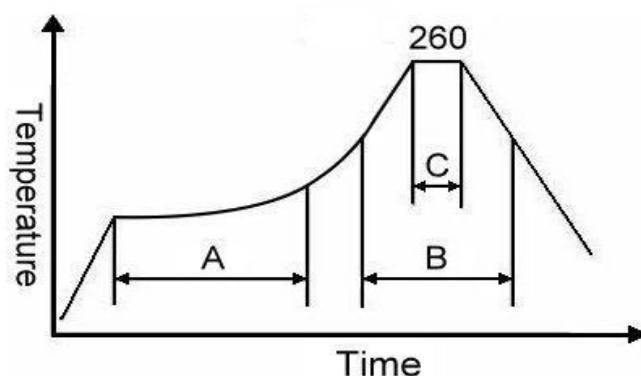
- 2.1 Mechanical Shock: JESD22-B104
- 2.2 Vibration Variable Frequency: JESD22-B103
- 2.3 Solderability: JESD22-B102-D

3.Environmental

- 3.1 Highly Accelerated Stress Testing: JESD22-A110/A118
- 3.2 Temp Cycle: JESD22-A104
- 3.3 Resistance to Solder Heat: J-STD-020C
- 3.4 Low Temperature Storage: JESD22-A108
- 3.5 High Temperature Storage Life / Bake: JESD22-A103
- 3.6 Temperature Bias and Operating Life: JESD22-A108
- 3.7 ESD Testing: JESD22-A114/A115/C101
- 3.8 Latch Up test: JESD78

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

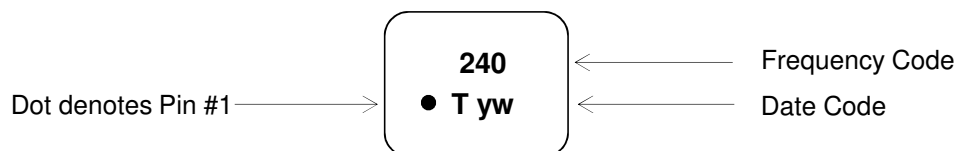
TYPE JT 2.5X2.0 TEMPERATURE COMPENSATED CRYSTAL OSCILLATOR

JT25240001

VER. A

20-Nov-20

MARKING



T
Model Series

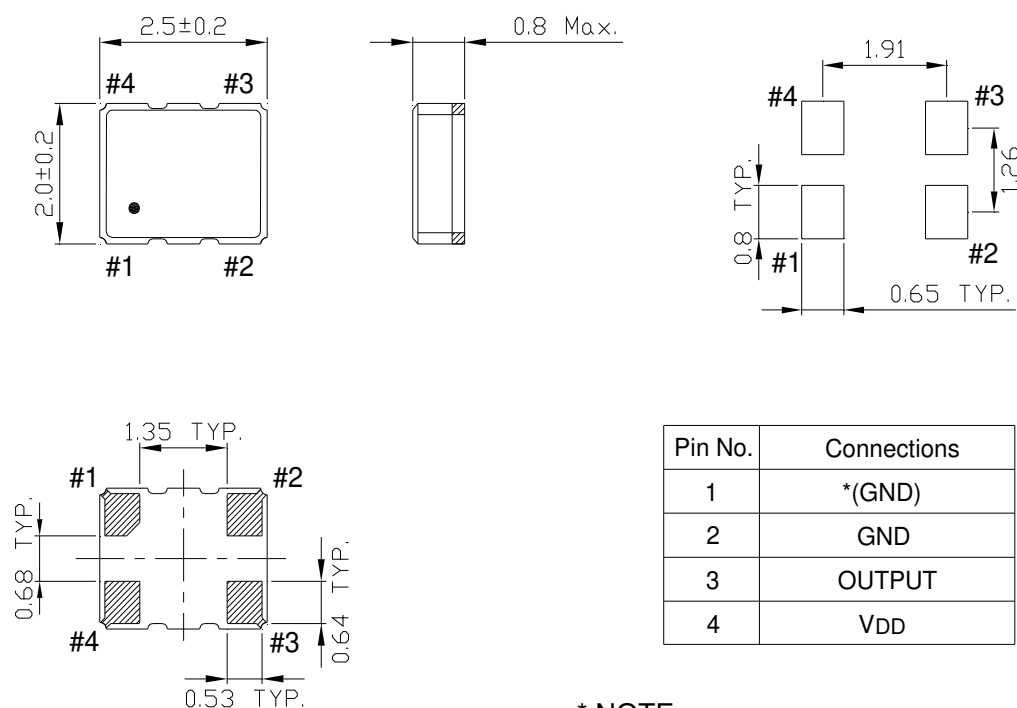
y
Year Code (last digit of year)

w
Week Code

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

Recommended Land Pattern

(TOP VIEW)



Pin No.	Connections
1	*(GND)
2	GND
3	OUTPUT
4	VDD

* NOTE

#1 pad. Must be connected to ground on your circuit, otherwise oscillation frequency will shift from the output frequency specified.

Bottom View

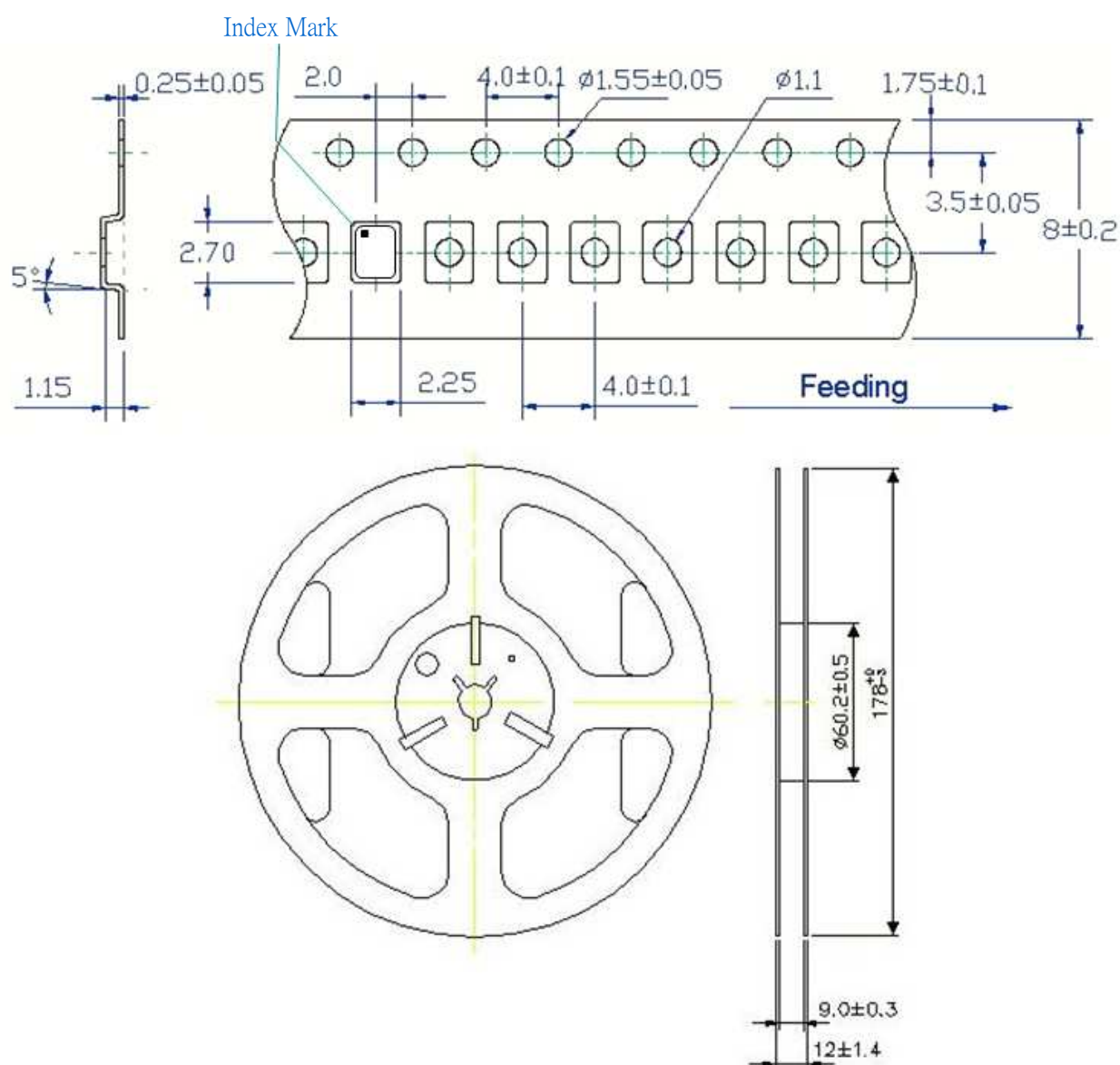
TYPE JT 2.5X2.0 TEMPERATURE COMPENSATED CRYSTAL OSCILLATOR

JT25240001

VER. A

20-Nov-20

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 JT 2.5X2.0 TEMPERATURE COMPENSATED CRYSTAL OSCILLATOR

JT25240001

VER. A

20-Nov-20

PACKING

