



A Product Line of
Diodes Incorporated



SPECIFICATION FOR APPROVAL

CUSTOMER _____

NOMINAL FREQUENCY 24.576000 MHz

PRODUCT TYPE TYPE YK 3.2x2.5 SEAM SEALED VOLTAGE CONTROL CLOCK OSCILLATOR

SPEC. NO. (P/N) YK2450001

CUSTOMER P/N _____

ISSUE DATE November 8, 2018

VERSION B

APPROVED	PREPARED	QA
<i>Brenda</i>	<i>Kelly</i>	<i>Song Yang</i>

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 YK 3.2x2.5 SEAM SEALED VOLTAGE CONTROL CLOCK OSCILLATOR

YK2450001

VER. B 8-Nov-18

VERSION HISTORY

Version No.	Version Date	Description	Notes
A	Nov.27,2014	Initial Release	
B	Nov.8,2018	Updated logo	



TYPE YK 3.2x2.5 SEAM SEALED VOLTAGE CONTROL CLOCK OSCILLATOR

YK2450001

VER. B 8-Nov-18

ELECTRICAL SPECIFICATIONS

SRe Part Number : YK2450001

Item	Symbol	Specifications	Units	Notes
Nominal Frequency	Fo	24.576000	MHz	
Frequency Stability	FT	± 50	ppm	**See note
Operating Temperature Range	TR	-20 to +70	°C	
Supply Voltage	V _{DD}	+3.3 ± 5%	V	
Logic Type	LT	LVC MOS		
Supply Current, Output Enabled	I _{DD} /OE	10	mA	Max.
Duty Cycle (Symmetry)	DC/SY	45 / 55	%	Measured 50% of Waveform
Rise / Fall Time	T _R /T _F	4	ns	Max. measured 10/90% 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 ~ 5MHz Frequency Band
Jitter, Accumulated	RMS(1-σ)	7	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.

Frequency Modulation Function

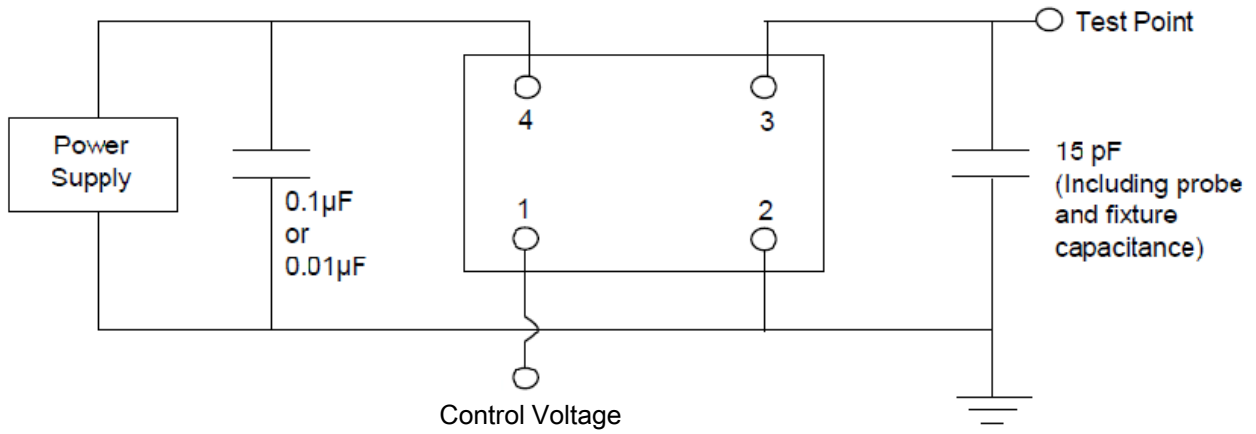
Parameter	Min.	Typ.	Max.	Units	Notes
Absolute Pull Range (APR)	± 100			ppm	
Control Voltage Range	0.3		3	V _{DC}	As rated
Center Control Voltage		1.65		V	For RMT center frequency
Monotonic Linearity			10	%	Positive transfer slope

TYPE YK 3.2x2.5 SEAM SEALED VOLTAGE CONTROL CLOCK OSCILLATOR

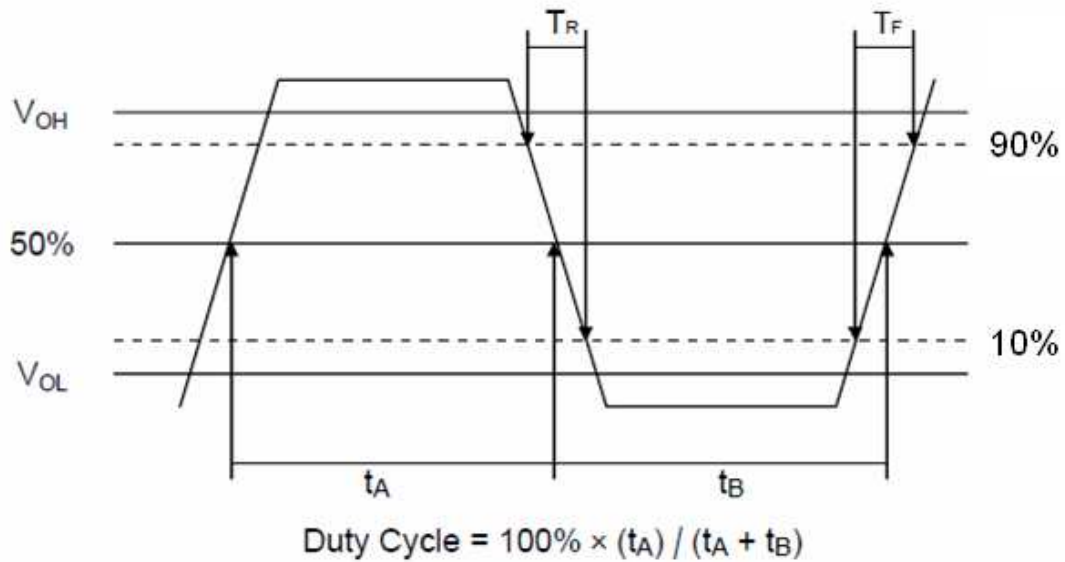
YK2450001

VER. B 8-Nov-18

TEST CIRCUIT



OUTPUT WAVEFORM



RELIABILITY SPECIFICATIONS

ENVIRONMENTAL:

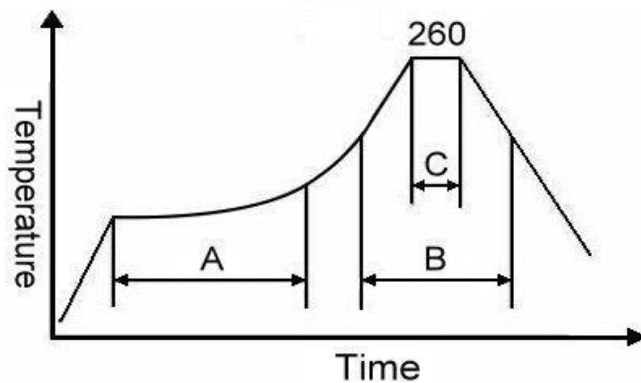
- a) THERMAL SHOCK: MIL-STD-883, Method 1011, Condition A
- b) MOISTURE RESISTANCE: MIL-STD-883, Method 1004
- c) VIBRATION: MIL-STD-883, Method 2007, Condition A
- d) RESISTANCE TO SOLDERING HEAT: J-STD-020D Table 5-2 Pb-free devices (except 2 cycles max)
- e) HAZARDOUS SUBSTANCE: Pb - free and RoHS/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

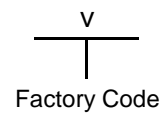
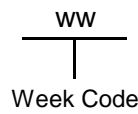
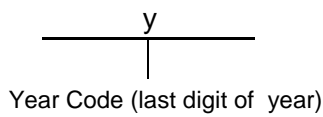
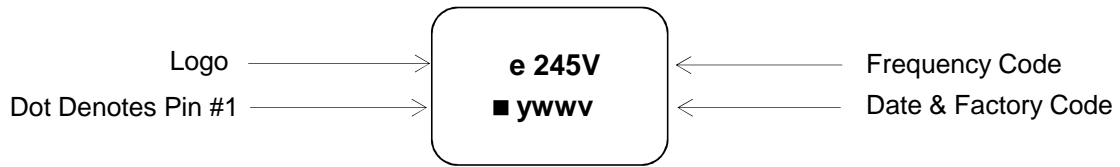
	Stage	Temperature	Time
A	Preheat	150~200°C	60~120 Sec
B	Primary Heat	217°C	60~150 Sec
C	Peak	260°C	10 Sec

TYPE YK 3.2x2.5 SEAM SEALED VOLTAGE CONTROL CLOCK OSCILLATOR

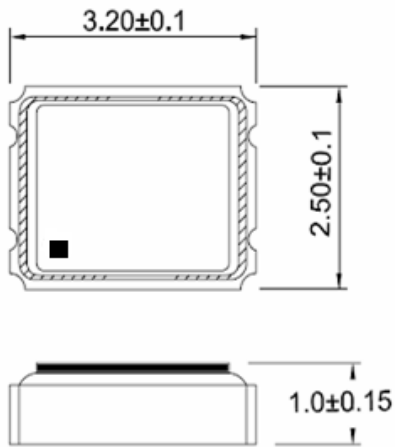
YK2450001

VER. B 8-Nov-18

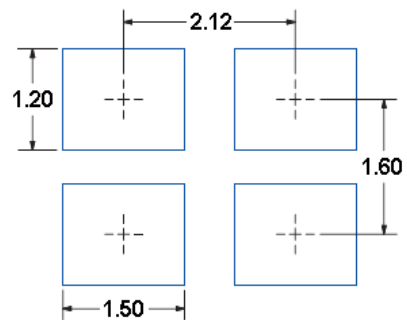
MARKING



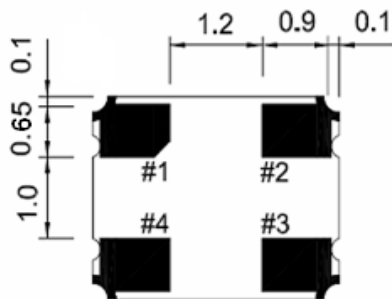
MECHANICAL DRAWINGS (Scale: None. Dimensions are in mm.)



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)

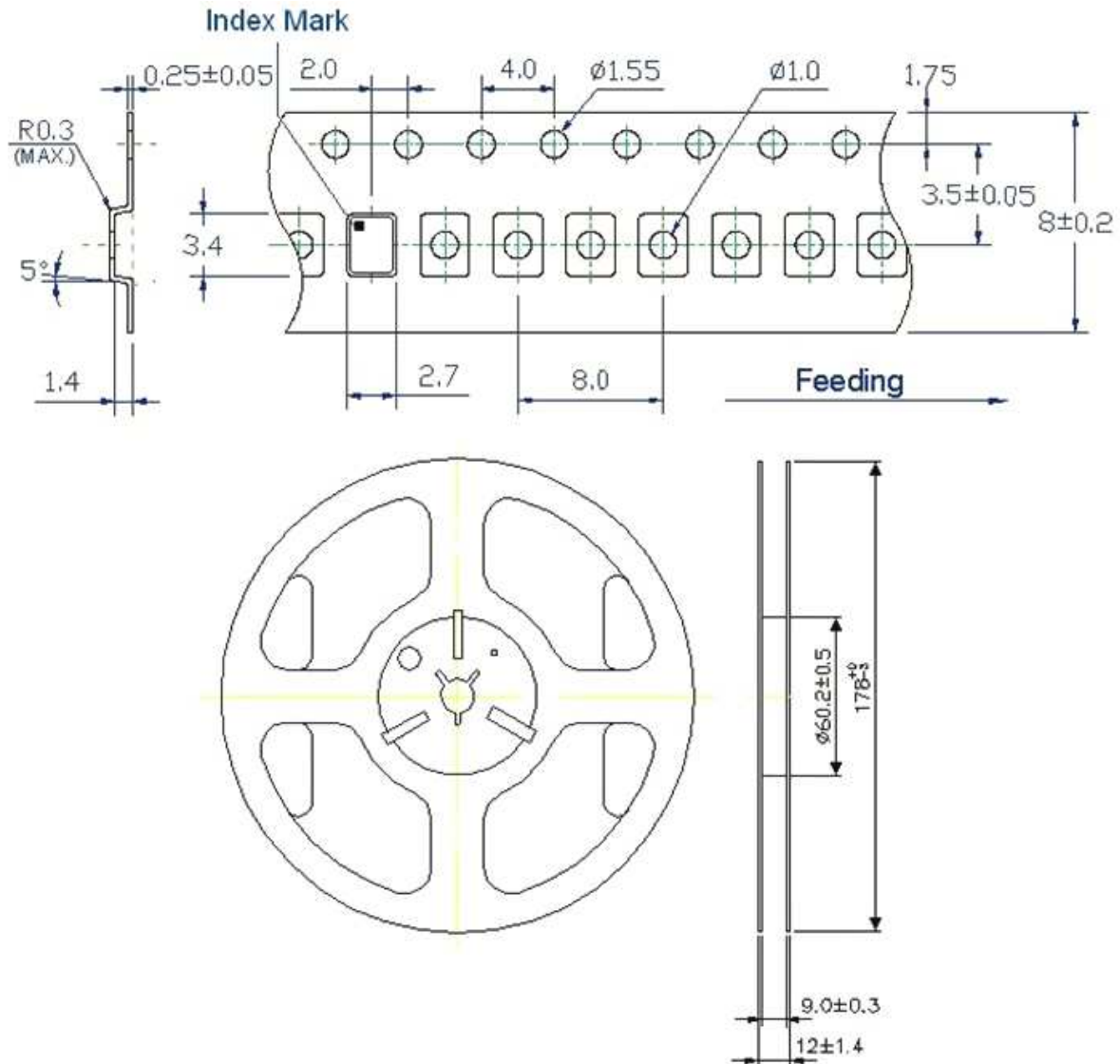
Pin	Function
1	Voltage Control
2	Ground
3	Clock Output
4	V _{DD}

TYPE YK 3.2x2.5 SEAM SEALED VOLTAGE CONTROL CLOCK OSCILLATOR

YK2450001

VER. B 8-Nov-18

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 YK 3.2x2.5 SEAM SEALED VOLTAGE CONTROL CLOCK OSCILLATOR

YK2450001

VER. B 8-Nov-18

PACKING

