



A Product Line of
Diodes Incorporated



SPECIFICATION FOR APPROVAL

CUSTOMER	_____
NOMINAL FREQUENCY	156.250000 MHz
PRODUCT TYPE	TYPE PD 5.0x3.2 SEAM SEALED CRYSTAL CLOCK OSCILLATOR
SPEC. NO. (P/N)	PDF620019Z
CUSTOMER P/N	_____
ISSUE DATE	April 9, 2018
VERSION	A

APPROVED	PREPARED	QA

Diodes Incorporated

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- *Pb-free
- *RoHS Compliant
- *HF-Halogen Free
- *REACH Compliant

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PDF620019Z

VER. A 9-Apr-18

ELECTRICAL SPECIFICATIONS

SRe Part Number : PDF620019Z

Item	Symbol	Specifications	Units	Notes
Nominal Frequency	F ₀	156.250000	MHz	
Frequency Stability	FT	± 50	ppm	**See note
Operating Temperature Range	TR	-40 to +100	°C	
Supply Voltage	V _{CC}	+3.3 ± 10.0%	V	
Logic Type	LT	LVPECL		
Supply Current, Output Enabled	I _{CC/OE}	70	mA	Max.
Supply Current, Output Disabled	I _{CC/OD}	10	uA	Max.
Duty Cycle (Symmetry)	DC/SY	45 / 55	%	Measured 50% of Waveform
Rise / Fall Time	T _R /T _F	0.6	ns	Max. measured 20/80% of Waveform
Output Voltage "0" Level	V _{OL}	V _{CC} -1.620V	V	Max.
Output Voltage "1" Level	V _{OH}	V _{CC} -1.025V	V	Min.
Output Load		50Ω to V _{CC} -2V		
Jitter, Phase	RMS	0.2 / 0.3	ps	Typ./Max. 12KHz-20MHz Frequency Band
Jitter, Accumulated	RMS(1-σ)	4	ps	Typ. 20,000 Consecutive Periods
Jitter, Peak to Peak	Pk-Pk	40	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 _{CC}			V	Or Open
Input Voltage (Pin1), Output Disable (low power standby)			0.3V _{CC}	V	Output is Hi-Z
Internal Pullup Resistance		50		KΩ	
Output Disable Delay			200	ns	
Output Enable Delay			2	ms	

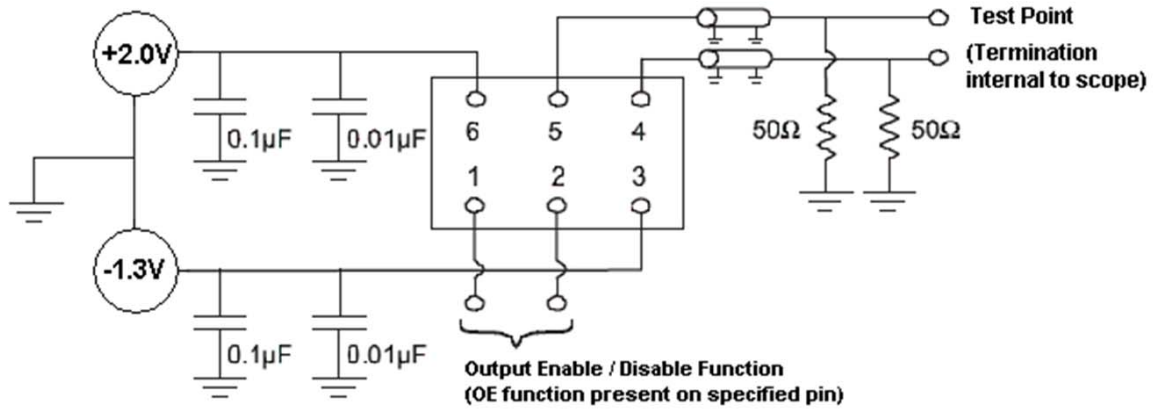


TYPE PD 5.0x3.2 SEAM SEALED CRYSTAL CLOCK OSCILLATOR

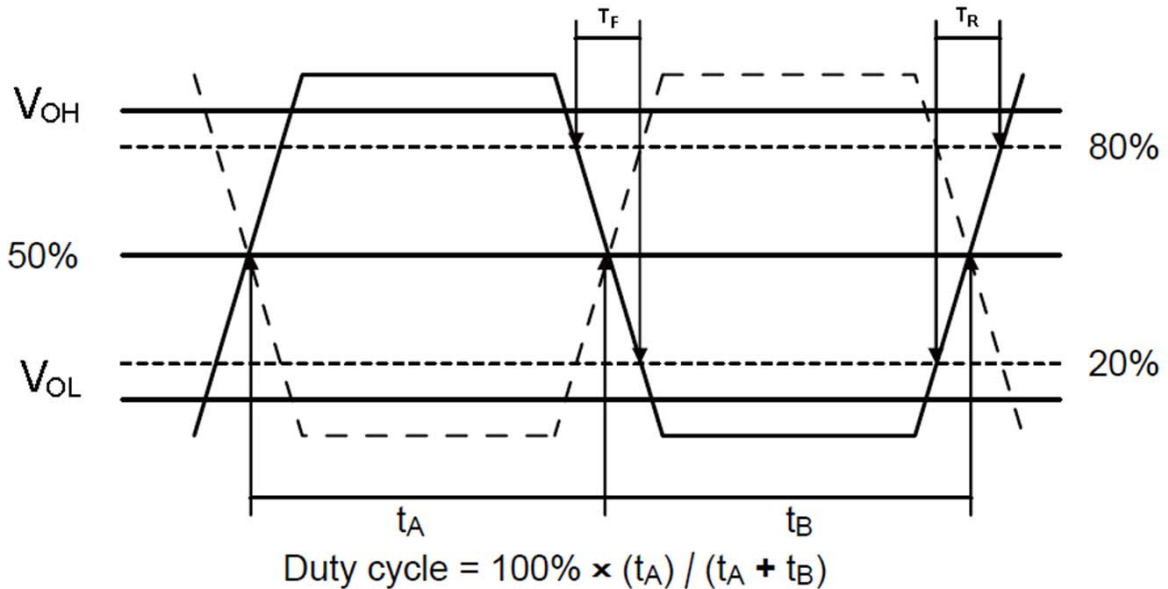
PDF620019Z

VER. A 9-Apr-18

TEST CIRCUIT



OUTPUT WAVEFORM



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PDF620019Z

VER. A 9-Apr-18

RELIABILITY SPECIFICATIONS

ENVIRONMENTAL:

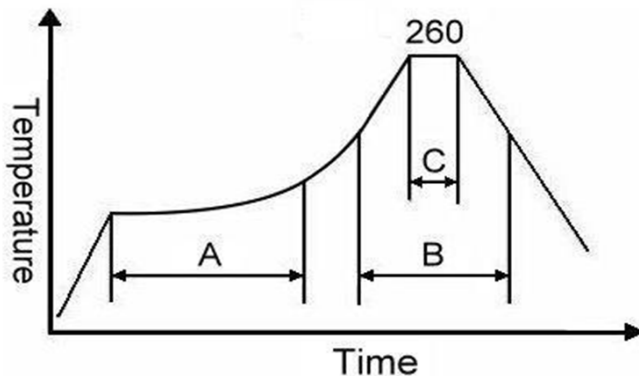
- a) THERMAL SHOCK: MIL-STD-883, Method 1011, Condition A
- b) MOISTURE RESISTANCE: MIL-STD-883, Method 1004
- c) VIBRATION: MIL-STD-883, Method 2007, Condition A
- d) RESISTANCE TO SOLDERING HEAT: J-STD-020D Table 5-2 Pb-free devices (except 2 cycles max)
- e) HAZARDOUS SUBSTANCE: Pb - free and RoHS/Green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

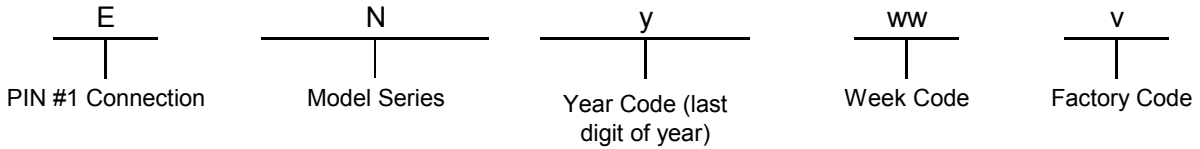
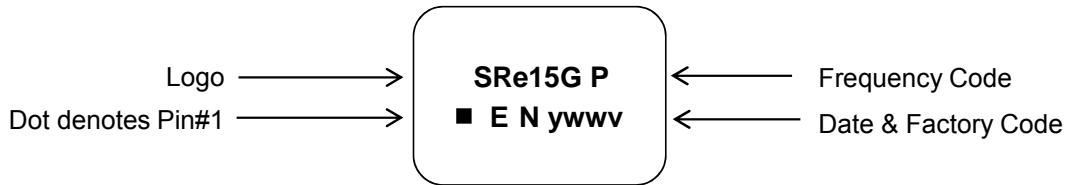
	Stage	Temperature	Time
A	Preheat	150~200°C	60~120 Sec
B	Primary Heat	217°C	60~150 Sec
C	Peak	260°C	10 Sec

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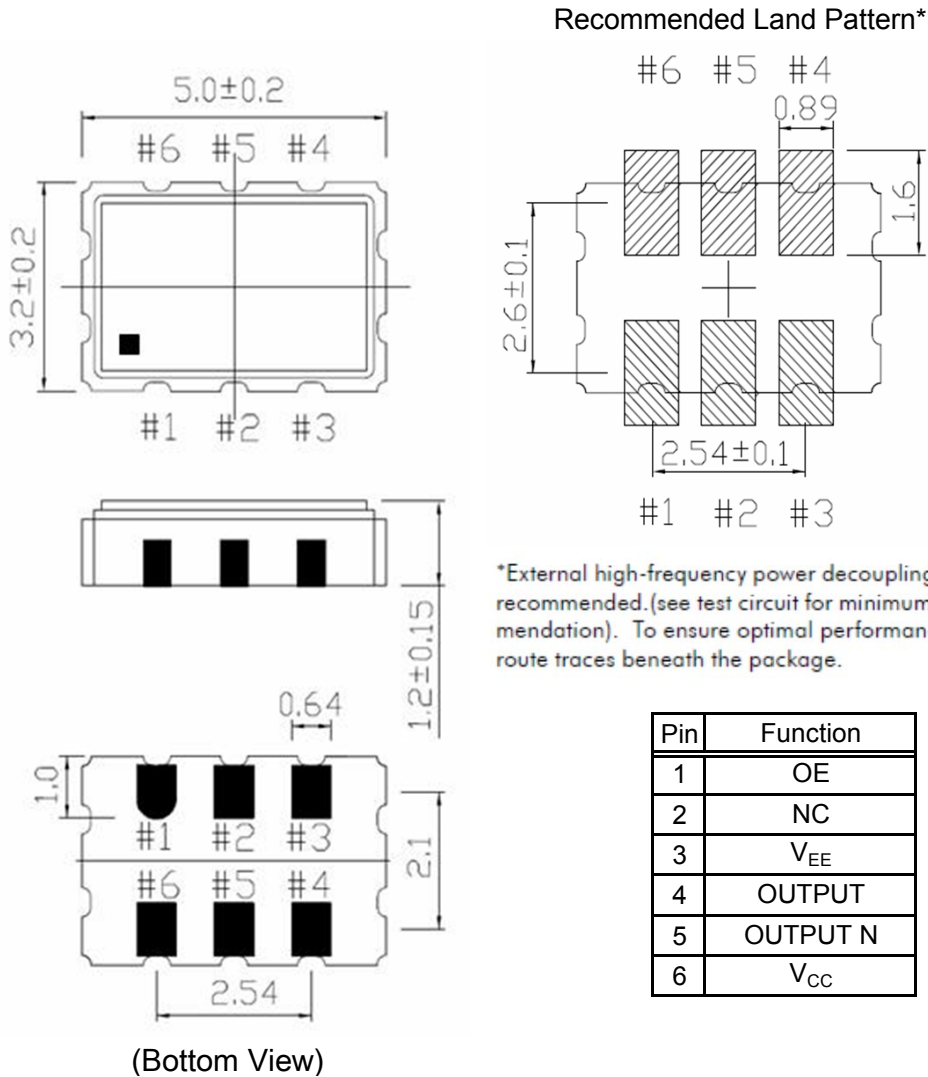
PDF620019Z

VER. A 9-Apr-18

MARKING



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



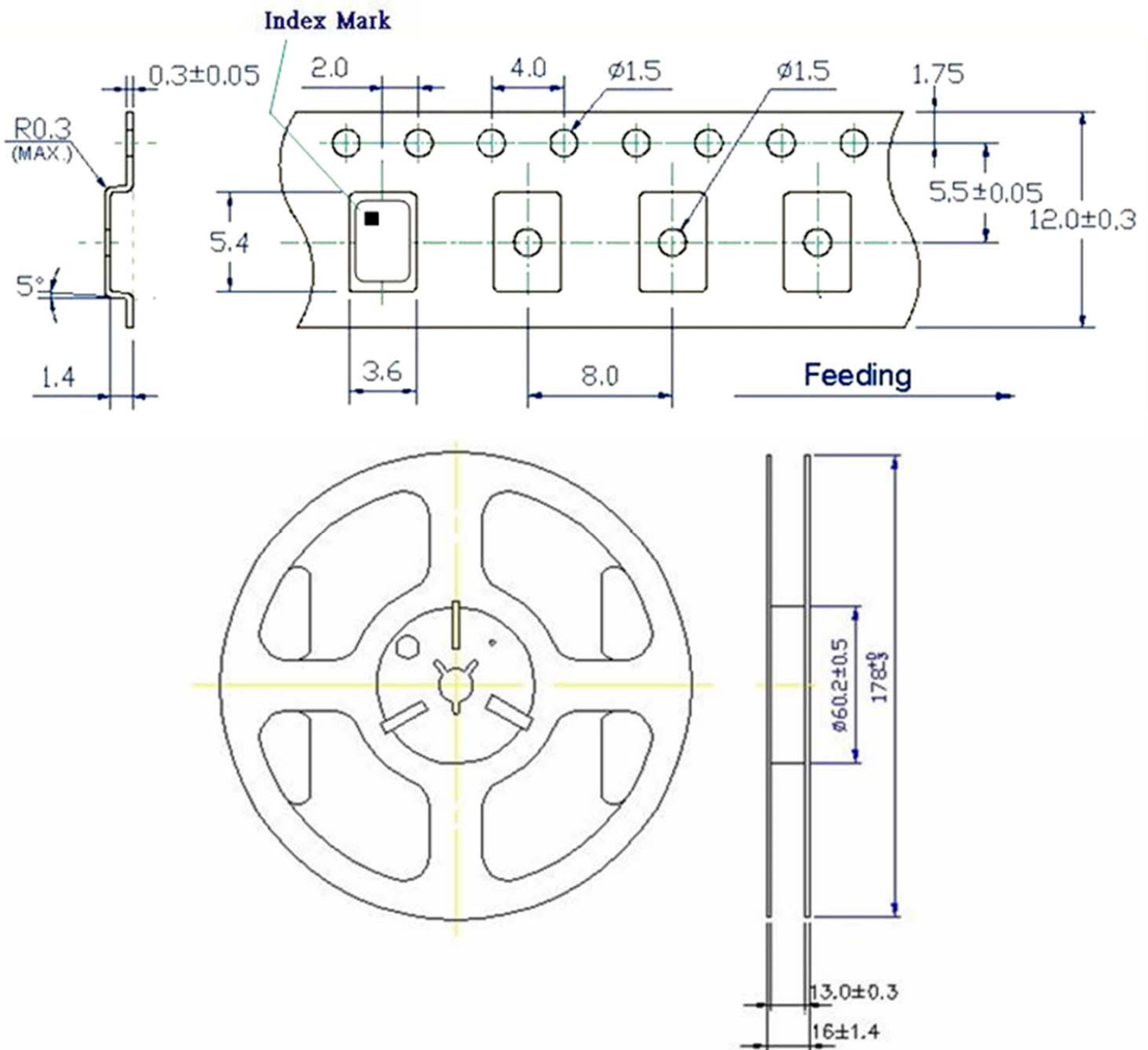
Pin	Function
1	OE
2	NC
3	V _{EE}
4	OUTPUT
5	OUTPUT N
6	V _{CC}

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VER. A 9-Apr-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.

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VER. A 9-Apr-18

PACKING

