

**Customer Code:** \_\_\_\_\_

# DATASHEET

**DAPU P/N: DPA3224M0000ED0ZEB0**

<b>DAPU</b>			<b>Customer Approval</b>
Drew	Audited	Approved	
Jieshu ZHENG	Jianhua LIN	Gangtao FENG	
Date:	2024/11/27		

Stamp, please! Thanks!

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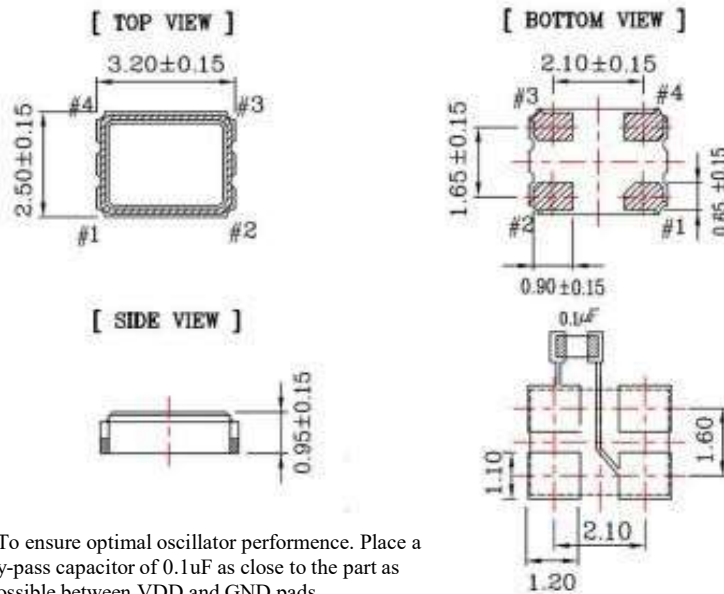


## 1、Electrical Parameter

MODEL :		DPA3224M0000ED0ZEB0					
No.	Parameters	SYM.	Electrical Spec.				Notes
			Min.	Typ.	Max.	Units	
1	Nominal Frequency	FL	24.000			MHz	
2	Oscillation Mode	-	Fundamental				
3	Frequency Tolerance	-	-10		10	ppm	At 25°C
4	Frequency Stability	-	-20		20	ppm	-40°C~85°C (Reference 25°C)
5	Operating Temperature	Topr	-40		85	°C	
6	Storage Temperature	Tstg	-55		125	°C	
7	Supply Voltage	V <sub>DD</sub>	1.71	3.3	3.63	V	
8	Current Consumption	I <sub>cc</sub>		2	3	mA	
9	Output waveform	-	CMOS				
10	Output Load	CL	15			pF	
11	Output Voltage High	VOH	0.9			V <sub>DD</sub>	
12	Output Voltage Low	VOL			0.1	V <sub>DD</sub>	
13	Rise Time	Tr			5	ns	10% -90% V <sub>DD</sub> Level
14	Fall Time	Tf			5	ns	90% -10% V <sub>DD</sub> Level
15	Aging	-	-3		3	ppm	First Year at 25°C
16	Tri-State Output Enable	-	0.7			V <sub>DD</sub>	Pin 1, OE or ST
17	Tri-State Output Disable	-			0.3	V <sub>DD</sub>	Pin 1, OE or ST
18	Duty Cycle	-	45~55			%	
19	Start-Up Time	T <sub>start</sub>			3	ms	Measured from the time V <sub>DD</sub> reaches its rated minimum value.

## 2、 Mechanical Structure

### 2.1 Dimensions





\*To ensure optimal oscillator performance. Place a by-pass capacitor of 0.1uF as close to the part as possible between VDD and GND pads.

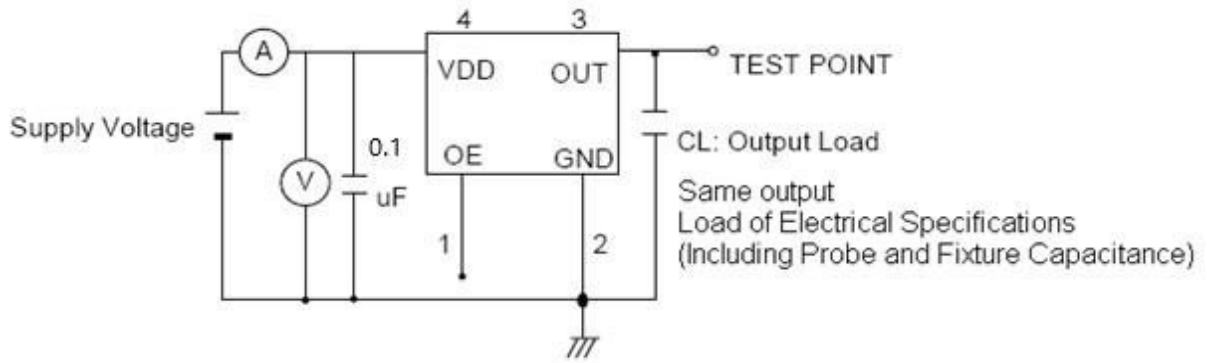
PIN1	Tri-state
PIN2	GND
PIN3	Output
PIN4	VDD

### 2.2 Marking



-  -----DAPU LOGO
- 24.000** -----Frequency
- YYWW** -----Manufactured day:   YY    WW  
   Year    Week
-  -----Pin 1

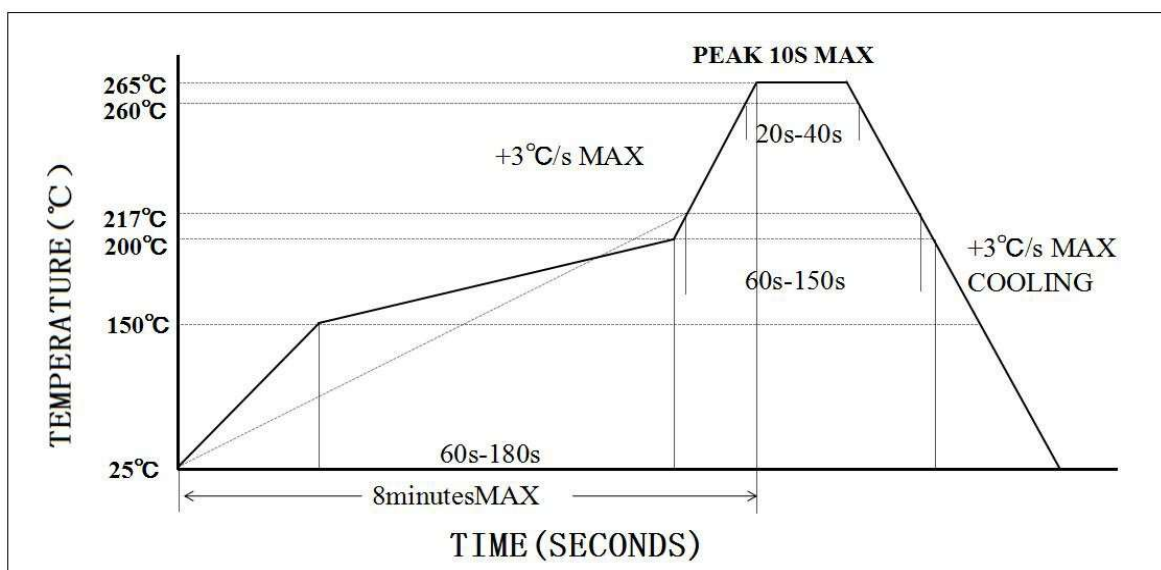
### 3、 Test Circuit



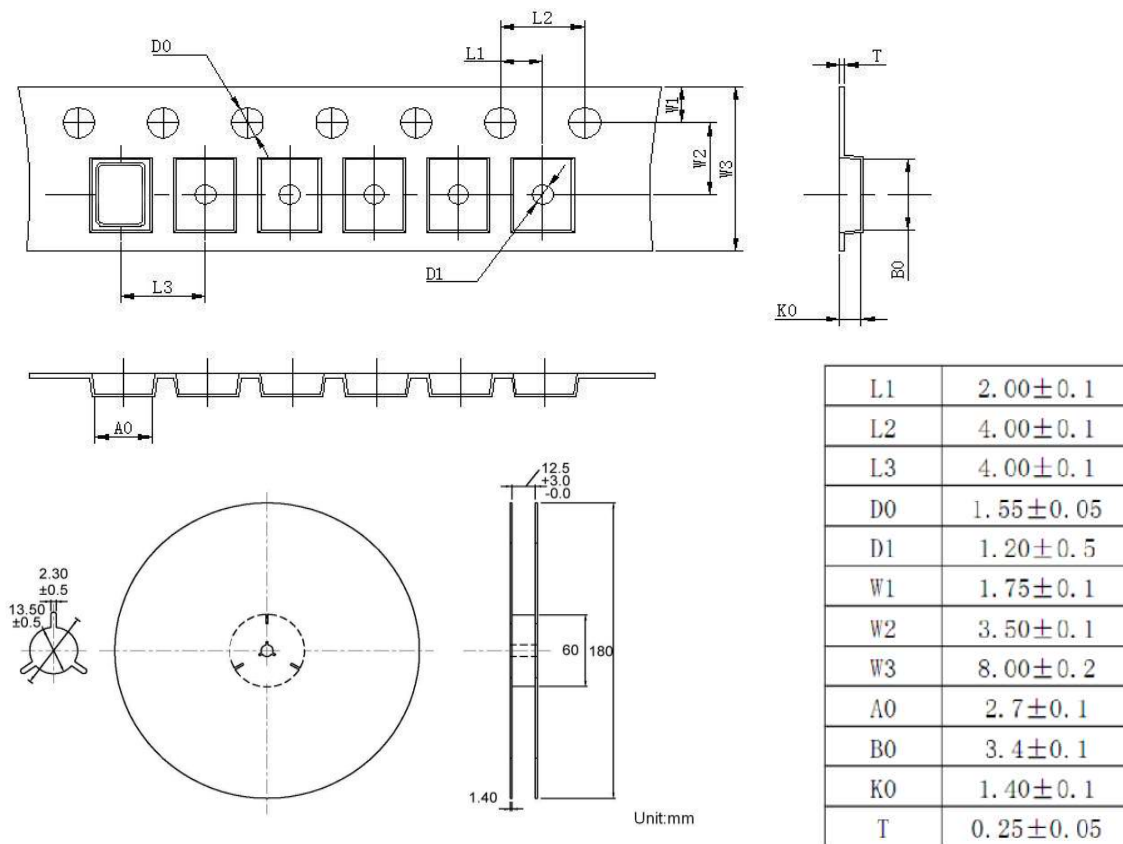
Control input (output enable/disable)

Tri-State Pin	Output Pin
Logic 1 or open on pad 1	Oscillator output
Logic 0 on pad 1	Disable output to high impedance

### 4、 Reflow Soldering Curve (RoHS)



## 5、 Package: Tape & Reel (mm)



## 6、 Reliability Test Specification

NO.	Test Items	Test Standard	Test Condition	Standard
1	Drop test	GB/T2423.8	Drop from 150cm height on 3cm hard wooden board for 3 times	A、 C
2	Mechanical shock	GB/T2423.5	Peak: 100g; Waveform: Half-sine; Velocity Change: 1000m/s <sup>2</sup> ; Duration: 0.5ms; 3 times/direction, Direction: +X, -X, +Y, -Y, +Z, -Z.	A、 C
3	Vibration	GB/T2423.10	Frequency: 10~2000Hz; Vibration:20min, 1.52mm; Direction: X, Y, Z; Duration: 2 hours/direction.	A、 C
4	Solderability	IEC60068-2-58	Soldering temperature:245°C±5°C Immersion time:5 seconds ± 0.5 seconds Flux:Rosin Resin Methanol Solvent ( 1 : 4 )	E

NO.	Test Items	Test Standard	Test Condition	Standard
5	Resistance to soldering heat	IEC60068-2-58	Reflow soldering: Solder temperature 260±5°C, Immersion time:10±1S	A、C、D
6	High temperature storage	GB/T2423.2	Temperature: 125°C±2°C; Duration: 500±12hours;	A、C、D
7	Low temperature storage	GB/T2423.1	Temperature: -40°C±2°C; Duration: 500±12hours;	A、C、D
8	Temperature Shock	GB/T2423.22	Do 10 cycles at the following temperature	A、C、D
			<p>The diagram illustrates a temperature shock cycle. The temperature starts at 25 °C, drops to -55 ± 3 °C, stays there for 30 minutes, then rises to +125 ± 3 °C, stays there for 30 minutes, and returns to 25 °C. The transition times are 10 minutes maximum. The entire sequence is labeled as '1 cycle'.</p>	
9	High temperature high humidity storage	GB/T2423.3	Temperature: 85°C±3°C; Humidity: 85%; Duration: 500hours;	A、C、D