Customer Code : _____

DATASHEET

DAPU P/N : **T32-B513-19.20MHz-Y**

Customer P/N: _____

DAPU			Customer Approval
Drew	Audited	Approved	Stamp, please! Thanks!
Amway.wei	Carry.Wang	Jason Zhao	
Date: 2022.09.23			

Guangdong Dapu Telecom Technology Co.,Ltd

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Table of amendment

Version	Revision contents	Prepared by	Revised date
1.0	The first issued	Amway	2020.09.27
1.1	The “Reflow Soldering Curve” “Package” changed, Add “Start up Time” “Initial Frequency Tolerance” “Holdover” “Short Term” “Aging Tolerance 20 Years”	Amway	2022.09.23

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1. Electrical Parameters

MODEL： T32-B513-19.20MHz-Y						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency	19.20			MHz	
	Output Waveform	Clipped Sine Wave				
	Vp-p	0.8			V	
	Start up Time			3	ms	Stabilization time to +/-0.5ppm of final frequency.
	Load	10KΩ//10pF				
Frequency Stabilities	Overall Stability	-4.6		+4.6	$\times 10^{-6}$	Including frequency stability vs.temperature tolerance ex factory, aging over 20 years, supply&load variation.
	Frequency Tolerance vs. Operating Temperature Range	-0.28		+0.28	$\times 10^{-6}$	T_A varied from-40 to 85℃, measurement referenced to frequency observed with $f_{ref}=(f_{max}+f_{min})/2$, V_{cc}=3.3V, V_c=1.5V, O_{load}=10KΩ//10pF, temperature variable speed less than 2℃per minute.
	Initial Frequency Tolerance	-1		+1	$\times 10^{-6}$	Measurement referenced to frequency observed with T_A=25℃, V_{cc}=3.3V , V_c=1.5V, within 30 days after ex-works.
		-0.5		+0.5	$\times 10^{-6}$	Measurement referenced to frequency before reflow, tested with T_A=+25℃, V_{cc}=3.3V, V_c=1.5V, O_{load}=10KΩ//10pF . At least 4 hours of static placement at room temperature is necessary after completion of 2 times reflow.
	Frequency Tolerance vs. Supply Voltage	-0.1		+0.1	$\times 10^{-6}$	measurement referenced to frequency observed T_A=25℃, V_{cc} varied from 3.13V to 3.47V, and O_{Load}=10KΩ//10pF.
	Frequency Tolerance vs. Load	-0.1		+0.1	$\times 10^{-6}$	5% load change measurement referenced to frequency observed with T_A=25℃, V_{cc}=3.3V, V_c=1.5V, O_{Load}=10KΩ//10pF.
	Holdover	-0.37		+0.37	$\times 10^{-6}$	Including frequency stability over temp. and short term aging in 24h.
	Short Term		0.1	0.2	$\times 10^{-9}$	Allan Deviation (ADEV), tau=1 second, at constant temperature.

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	Aging Tolerance Per Day	-0.02		+0.02	$\times 10^{-6}$	T_A=25℃, V_{cc}=3.3V, V_c=1.5V, and after 1h of operation.
	Aging Tolerance First Year	-1		+1	$\times 10^{-6}$	
	Aging Tolerance 20 Years	-3		+3	$\times 10^{-6}$	
Power Supply	Current Consumption			3	mA	@25℃, V_{cc}=3.3V, V_c=1.5V, O_{load}=10KΩ//10pF.
	Supply Voltage	3.13	3.3	3.47	V	
Voltage Control	Frequency tuning range	-15		-10	$\times 10^{-6}$	V_c=0.5V. measurement referenced to V_c=1.5V.
		-1		+1	$\times 10^{-6}$	V_c=1.5V. measurement referenced to Exactly 19.20MHz.
		+10		+15	$\times 10^{-6}$	V_c=2.5V. measurement referenced to V_c=1.5V.
	Linearity			10	%	
	Slope	Positive				
	Input Impedance	100			KΩ	
Phase Noise	Phase Noise		-90	-85	dBc/Hz	10Hz
			-120	-115		100Hz
			-140	-135		1KHz
			-145	-140		10KHz
			-148	-143		100KHz
Environmental Conditions	Operable Temperature	-40		+85	℃	
	Storage Temperature	-55		+105	℃	
	ESD Level	Human Body Model, class2: 2000V to 4000V; ANSI/ESDA/JEDEC JS-001-2010.				
		Machine Model, class B: 200V to 400V; JEDEC JESD22-A115C.				
	Moisture Sensitivity Level	Level 1.				
	Vibration	Test Condition: 0.75mm ;acceleration:10g;10Hz～2000Hz, one cycle per 30 min, test 2 hour. (3 times for each 3 directions X ,Y , Z) .IEC 68-2-06 Test Fc.				
	Shock	100g; 6ms; half sine wave (3 times for each 3 directions X ,Y, Z),IEC 68-2-27 Test Ea/Severity 50A.				
Full Package Storage	Relative humidity (%)	20%～70%				
	Temperature (℃)	-10~35℃				

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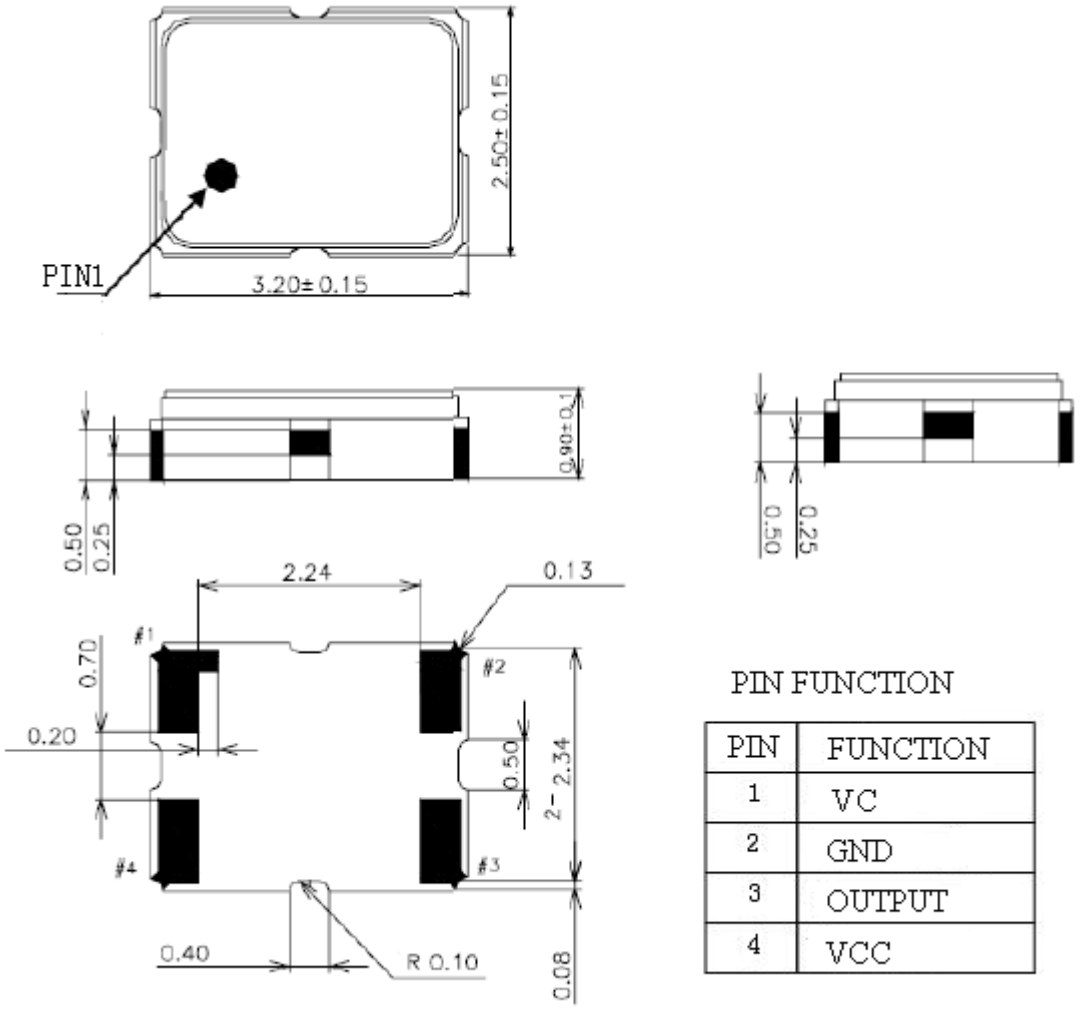
2. Mechanical Structure(mm)



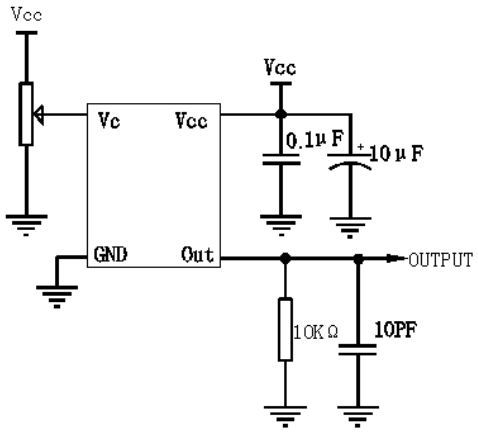
PIN FUNCTION

PIN	FUNCTION
1	VC
2	GND
3	OUTPUT
4	VCC

Note1: Tolerance ±0.1mm without mark

Note2: Referential weight 0.02g

3. Test circuit



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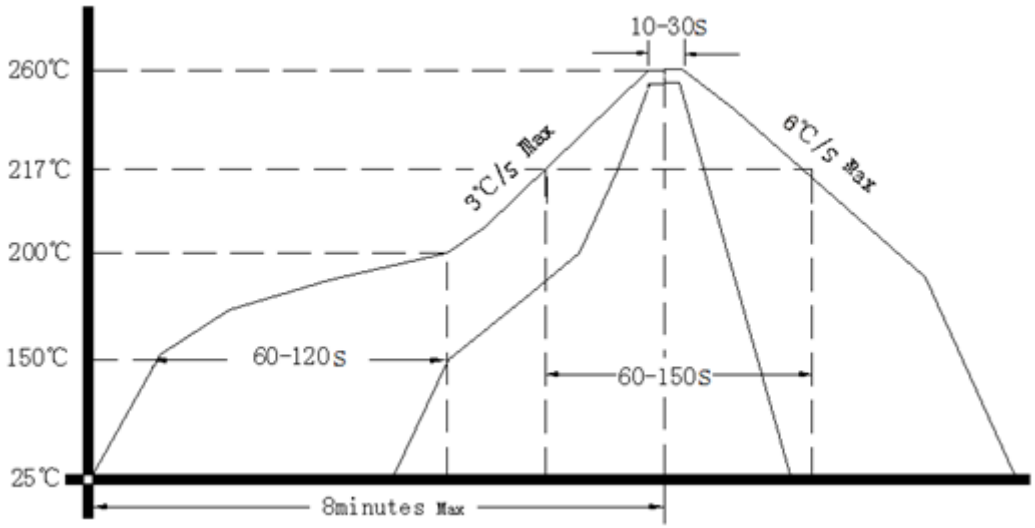
4. Reflow Soldering Curve (RoHS)



Note: If soldering with a hot air gun, ensure the temperature ＜320℃， soldering time ＜15 seconds.

5. Package: Tape & Reel (mm)