

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

# DATASHEET

DAPU P/N:     **T75B-0801-19.20MHz**    

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DAPU			Customer Approval
Drew	Audited	Approved	Stamp, please! Thanks!
Date: 2019.08.20			

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## 1. Electrical Parameters

MODEL: T75B-0801-19.20MHz						
Item	Parameters	Electrical Spec			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency	19.20			MHz	
	Output Waveform	LVCMOS				
	Output Low Voltage			0.4	V	$V_{cc}=3.3V, O_{load}=15\text{ pF}$
	Output High Voltage	2.8			V	$V_{cc}=3.3V, O_{load}=15\text{ pF}$
	Duty Cycle	45		55	%	@50%
	Rise / Fall Time (10%~90%)			5	ns	@25°C
	Load	15 ± 10%			pF	
	Sprious			-90	dBc	
	Output overshoot			10	%	
Frequency Stabilities	Frequency Tolerance vs. Operating Temperature Range	-0.25		+0.25	$\times 10^{-6}$	$T_A$ varied from -40°C to 105°C, measurement referenced to frequency observed with $f_{ref}=(f_{max}+f_{min})/2, V_{cc}=3.3V, O_{load}=15\text{ pF}$ , temperature variable speed less than 2°C per minute.
	Initial Frequency Tolerance	-1		+1	$\times 10^{-6}$	Measurement referenced to frequency observed with $T_A=25^\circ\text{C}, V_{cc}=3.3V$ within 30 days after ex-works.
	Frequency Tolerance vs. Supply Voltage	-0.1		+0.1	$\times 10^{-6}$	measurement referenced to frequency observed $T_A=25^\circ\text{C}, V_{cc}$ varied from 3.135V to 3.465V, and $O_{Load}=15\text{ pF}$ .
	Frequency Tolerance vs. Load	-0.1		+0.1	$\times 10^{-6}$	10% load change measurement referenced to frequency observed with $T_A=25^\circ\text{C}, V_{cc}=3.3V, O_{Load}=15\text{ pF}$ .
	Short-term Frequency stability			0.2	$\times 10^{-9}$	After power on 30 min, constant temperature.(Allen variance)
	Reflow shift	-1		+1	$\times 10^{-6}$	After 2X reflow,24 hour recovery at 25°C.
	Acceleration sensitivity			2	$\times 10^{-9}/g$	Gamma vector, 3-axes, 30-1500Hz, Typically less than.
	Holdover stability Variable temperature	-0.25		+0.25	$\times 10^{-6}$	Reference $(F_{MAX}+F_{MIN})/2$
	Holdover stability constant temperature	-0.05		+0.05	$\times 10^{-6}$	24 hours, $\leq \pm 2^\circ\text{C}$
	Slope over Temperature	-0.02		+0.02	$\times 10^{-6}/^\circ\text{C}$	$\Delta F/\Delta T, 0.5^\circ\text{C}/\text{min}$
	-0.1		+0.1	$\times 10^{-6}/^\circ\text{C}$	2°C/min	

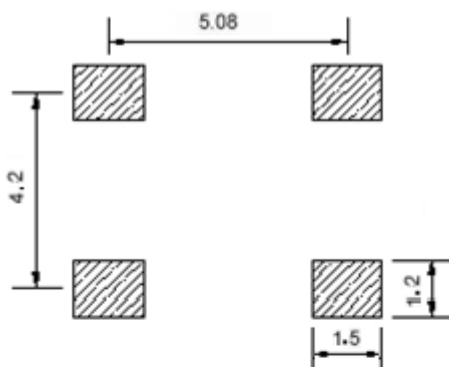


	Free-run accuracy	-4.6		+4.6	$\times 10^{-6}$	Inclusive of calibration tolerance at 25°C, temperature, supply voltage variation $\pm 5\%$ , load variation $\pm 5\text{pF}$ , reflow soldering and ageing 20 years reference to the nominal frequency.
	Micro jump	-0.01		+0.01	$\times 10^{-6}$	Continuous testing for 48 hours, temperature fluctuations $< 3^\circ\text{C}$ , one sampling/10S.
	Temper hysteresis effect	-0.02		+0.02	$\times 10^{-6}$	Over temperature range( $10^\circ\text{C}/\text{hour}$ )
	Jitter		0.9	1.8	ps	RMS jitter(10Hz-1MHz)
	Aging Tolerance Per day	-5		+5	$\times 10^{-9}$	$T_A=25^\circ\text{C}$ , $V_{cc}=3.3\text{V}$ , after 1h of operation.
	Aging Tolerance 1 Year	-1		+1	$\times 10^{-6}$	
	Aging Tolerance 10 Year	-3		+3	$\times 10^{-6}$	
	Aging Tolerance 20 Year	-4.6		+4.6	$\times 10^{-6}$	
Power Supply	Supply Voltage	3.135	3.3	3.465	V	
	Steady Consumption			15	mA	@25°C, $V_{cc}=3.3\text{V}$ , $O_{load}=15\text{pF}$ .
	Start-up time			10	mS	Time from power supply loading to TCXO output normal square wave
Phase Noise	Phase Noise @25°C		-65	-60	dBc/Hz	1Hz
			-90	-84		10Hz
			-120	-114		100Hz
			-140	-134		1KHz
			-145	-139		10KHz
			-150	-144		100KHz
			-155	-149		1MHz
Environmental Conditions	Operable Temperature	-40		+105	°C	
	Storage Temperature	-40		+105	°C	
	Operating environmental	5		85	%	
	ESD Level	Human Body Model, class2: 2000V to 4000V; ANSI/ESDA/JEDEC JS-001-2010.				
		Machine Model, class B: 200V to 400V; ANSI/ESDA/JEDEC JS-001-2010.				
Moisture Sensitivity Level	Level 3.					

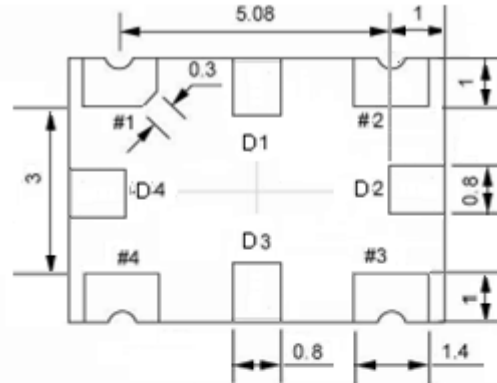


	Vibration	Test Condition: 0.75mm ;acceleration:10g;10Hz~2000Hz, one cycle per 30 min, test 2 hours. (3 times for each 3 directions X ,Y , Z) .IEC 68-2-06 Test Fc.
	Shock	100g; 6ms; half sine wave (3 times for each 3 directions X ,Y , Z ),IEC 68-2-27 Test Ea/Severity 50A.
Full Package Storage	Relative humidity (%)	20%~70%
	Temperature (°C)	-10~35°C

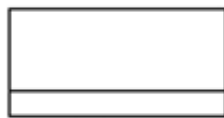
## 2. Mechanical Structure(mm)



Solder pad layout



Bottom view



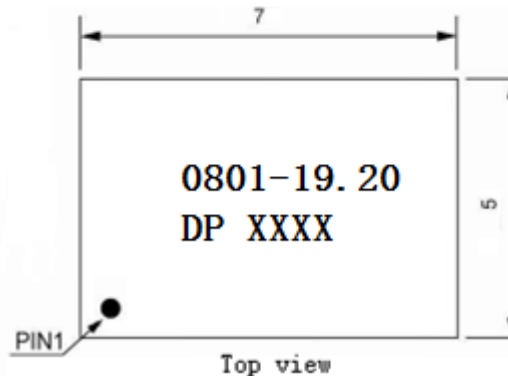
Right view



Side view

PIN FUNCTION

PIN	FUNCTION
D1,D2,D3,D4	NC
1	NC
2	GND
3	OUTPUT
4	VCC



Top view

**Note1:** Tolerance  $\pm 0.20\text{mm}$  without mark

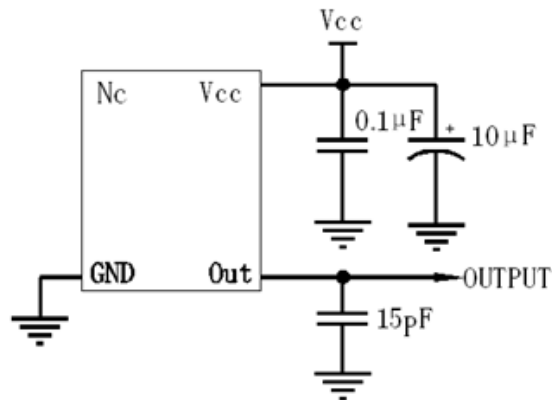
**Note2:** The first two xx representative: week  
After two xx representative: year

**Note3:** Referential Weight 0.2g

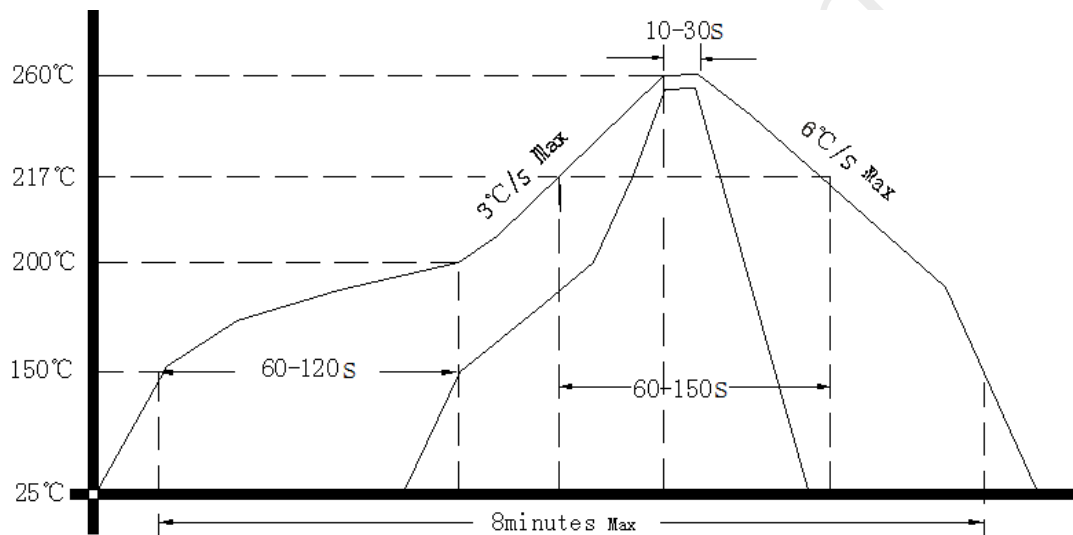
**Note4:** NC is not connect



### 3. Test circuit



### 4. Reflow Soldering Curve (RoHS)



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

### 5. Package: Tape & Reel (mm)

