

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

# DATASHEET

DAPU P/N:           **T53-A446-24.00MHz**          

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DAPU			Customer Approval
Drew	Audited	Approved	Stamp, please! Thanks!
Date: 2016.11.21			

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## 1. Electrical Parameters

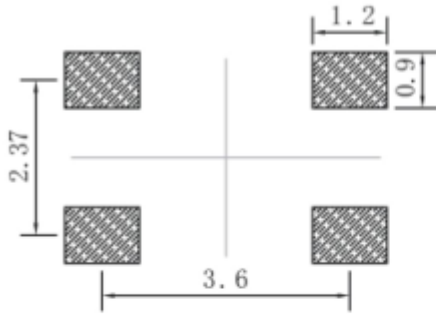
MODEL: T53-A446-24.00MHz						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency	24.00			MHz	
	Output Waveform	Clipped Sine Wave				
	Vp-p	0.8			V	
	Load	10KΩ//10pF				
Frequency Stabilities	Frequency Tolerance vs. Operating Temperature Range	-0.2		+0.2	$\times 10^{-6}$	$T_A$ varied from $-30^{\circ}\text{C}$ to $85^{\circ}\text{C}$ , measurement referenced to frequency observed with $f_{\text{ref}}=(f_{\text{max}}+f_{\text{min}})/2$ , $V_{\text{cc}}=3.0\text{V}$ , $V_c=1.5\text{V}$ , $O_{\text{load}}=10\text{K}\Omega//10\text{pF}$ , temperature variable speed less than $2^{\circ}\text{C}$ per minute.
	Initial Frequency Tolerance	-1.0		+1.0	$\times 10^{-6}$	Measurement referenced to frequency observed with $T_A=25^{\circ}\text{C}$ , $V_{\text{cc}}=3.0\text{V}$ , $V_c=1.5\text{V}$ within 30 days after ex-works.
	Frequency Tolerance vs. Supply Voltage	-0.05		+0.05	$\times 10^{-6}$	measurement referenced to frequency observed $T_A=25^{\circ}\text{C}$ , $V_{\text{cc}}$ varied from 2.85V to 3.15V, $V_c=1.5\text{V}$ and $O_{\text{Load}}=10\text{K}\Omega//10\text{pF}$ .
	Frequency Tolerance vs. Load	-0.05		+0.05	$\times 10^{-6}$	5% load change measurement referenced to frequency observed with $T_A=25^{\circ}\text{C}$ , $V_{\text{cc}}=3.0\text{V}$ , $V_c=1.5\text{V}$ and $O_{\text{Load}}=10\text{K}\Omega//10\text{pF}$ .
	Aging Tolerance Per Day	-0.02		+0.02	$\times 10^{-6}$	$T_A=25^{\circ}\text{C}$ , $V_{\text{cc}}=3.0\text{V}$ , $V_c=1.5\text{V}$ and after 1h of operation.
	Aging Tolerance 1 Year	-1.0		+1.0	$\times 10^{-6}$	
Power Supply	Operating Current			3	mA	@ $25^{\circ}\text{C}$ , $V_{\text{cc}}=3.0\text{V}$ , $V_c=1.5\text{V}$ , $O_{\text{Load}}=10\text{K}\Omega//10\text{pF}$ .
	Supply Voltage	2.85	3.0	3.15	V	



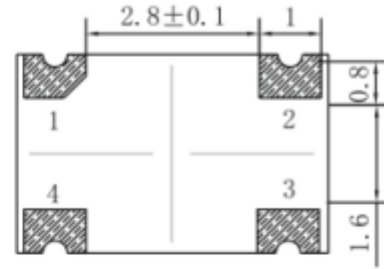
Voltage Control	Frequency tuning range			-5	$\times 10^{-6}$	$V_c=0.5V$ . measurement referenced to $V_c=1.5V$ .
		-1.0		+1.0	$\times 10^{-6}$	$V_c=1.5V$ . measurement referenced to Exactly 24.00MHz.
		+5			$\times 10^{-6}$	$V_c=2.5V$ . measurement referenced to $V_c=1.5V$ .
	Linearity			10	%	
	Slope	Positive				
Input Impedance	100				K $\Omega$	
Phase Noise	Phase Noise		-87	-82	dBc/Hz	10Hz
			-87	-82		100Hz
			-114	-109		1KHz
			-136	-131		10KHz
			-149	-144		100 KHz
			-151	-146		
Environmental Conditions	Operable Temperature	-30		+85	$^{\circ}C$	
	Storage Temperature	-55		+125	$^{\circ}C$	
	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 2.				
	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 ( $^{\circ}C$ )	-10~35 $^{\circ}C$				



## 2. Mechanical Structure(mm)



Solder pad layout



Bottom view



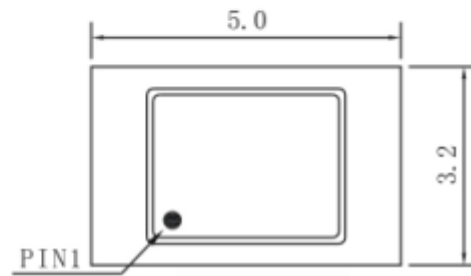
Right view



Side view

### PIN FUNCTION

PIN	NOTATION	FUNCTION
1	VC	Control Voltage
2	GND	GND
3	OUTPUT	RF Output
4	VCC	Supply Voltage

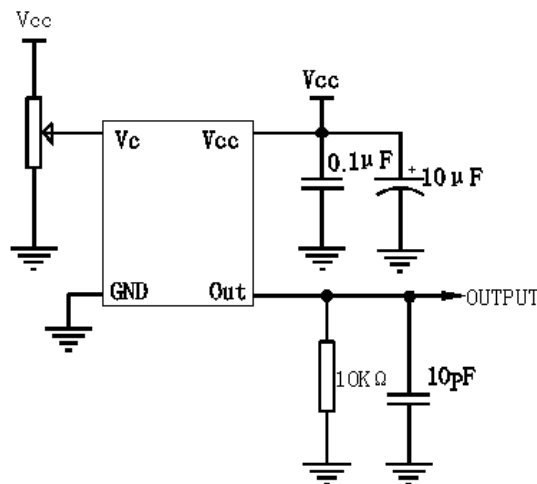


Top view

**Note1:** Tolerance  $\pm 0.2\text{mm}$  without mark

**Note2:** Referential Weight 0.05g

## 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)

