

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

# DATASHEET

DAPU P/N:           **T53-F586-38.40MHz**          

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DAPU			Customer Approval
Drew	Audited	Approved	Stamp, please! Thanks!
Date: 2020.11.10			

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## 1. Electrical Parameters

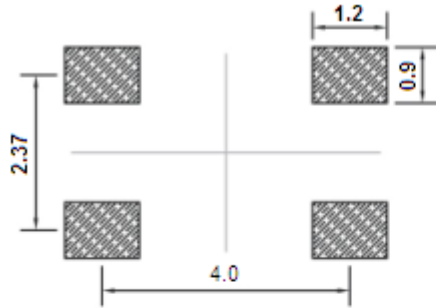
MODEL: T53-F586-38.40MHz						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency	38.40			MHz	
	Output Waveform	Clipped Sine Wave				
	Vp-p	0.8			V	
	Start-up Time			2	ms	Time taken for output to reach 90% of specified output level.
	Load	10KΩ//10pF				
Frequency Stabilities	Frequency Tolerance vs. Operating Temperature Range	-0.25		+0.25	$\times 10^{-6}$	$T_A$ varied from $-40^{\circ}\text{C}$ to $105^{\circ}\text{C}$ , measurement referenced to frequency observed with $f_{ref}=(f_{max}+f_{min})/2$ , $V_{cc}=2.85\text{V}$ , $V_c=1.5\text{V}$ , $O_{load}=10\text{K}\Omega//10\text{pF}$ , temperature variable speed less than $1^{\circ}\text{C}$ per minute.
	Initial Frequency Tolerance	-1		+1	$\times 10^{-6}$	Measurement referenced to frequency observed with $T_A=25^{\circ}\text{C}$ , $V_{cc}=2.85\text{V}$ , $V_c=1.5\text{V}$ within 30 days after ex-works.
	Reflow Shift	-1		+1	$\times 10^{-6}$	Two consecutive reflows as per attached profile after 2hours relaxation at $25^{\circ}\text{C}$ .
	Frequency slope	-0.1		+0.1	$\times 10^{-6}/^{\circ}\text{C}$	Minimum of one frequency reading every $2^{\circ}\text{C}$ over the operating temperature range.
	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 2.7V to 3.0V, $V_c=1.5\text{V}$ and $O_{Load}=10\text{K}\Omega//10\text{pF}$ .
	Frequency Tolerance vs. Load	-0.2		+0.2	$\times 10^{-6}$	10% load change measurement referenced to frequency observed with $T_A=25^{\circ}\text{C}$ , $V_{cc}=2.85\text{V}$ , $V_c=1.5\text{V}$ and $O_{Load}=10\text{K}\Omega//10\text{pF}$ .
	Aging Tolerance Per Day	-0.02		+0.02	$\times 10^{-6}$	$T_A=25^{\circ}\text{C}$ , $V_{cc}=2.85\text{V}$ , $V_c=1.5\text{V}$ and after 1h of operation.
	Aging Tolerance 1 Month	-0.2		+0.2	$\times 10^{-6}$	
	Aging Tolerance 1 Year	-1		+1	$\times 10^{-6}$	
Aging Tolerance 3 Year	-2		+2	$\times 10^{-6}$		
Power Supply	Operating Current			3.7	mA	@ $25^{\circ}\text{C}$ , $V_{cc}=2.85\text{V}$ , $V_c=1.5\text{V}$ , $O_{Load}=10\text{K}\Omega//10\text{pF}$ .
	Supply Voltage	2.7	2.85	3.0	V	



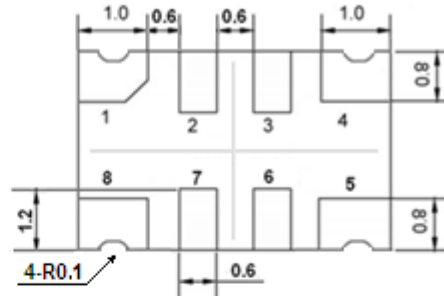
Voltage Control	Frequency tuning range	-10		-5	$\times 10^{-6}$	$V_c=0.5V$ . measurement referenced to $V_c=1.5V$ .
		-1		+1	$\times 10^{-6}$	$V_c=1.5V$ . measurement referenced to Exactly 38.40MHz.
		+5		+10	$\times 10^{-6}$	$V_c=2.5V$ . measurement referenced to $V_c=1.5V$ .
	Linearity			10	%	
	Slope	Positive				
Input Impedance	100				K $\Omega$	
Phase Noise	Phase Noise @25°C		-55		dBc/Hz	1Hz
			-84			10Hz
			-108			100Hz
			-130			1KHz
			-148			10KHz
			-153			100KHz
			-153			1MHz
RMS Phase Jitter		0.3		ps	12KHz to 5MHz	
Environmental Conditions	Operable Temperature	-40		+105	°C	
	Storage Temperature	-55		+125	°C	
	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 3.				
	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 (°C)	-10~35°C				



## 2. Mechanical Structure(mm)



Solder pad layout



Bottom view



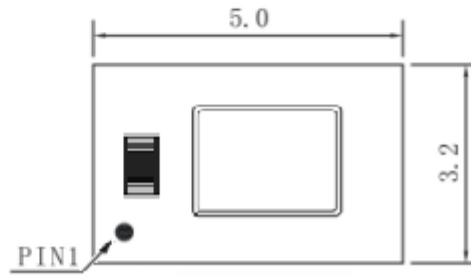
Right view



Side view

### PIN FUNCTION

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



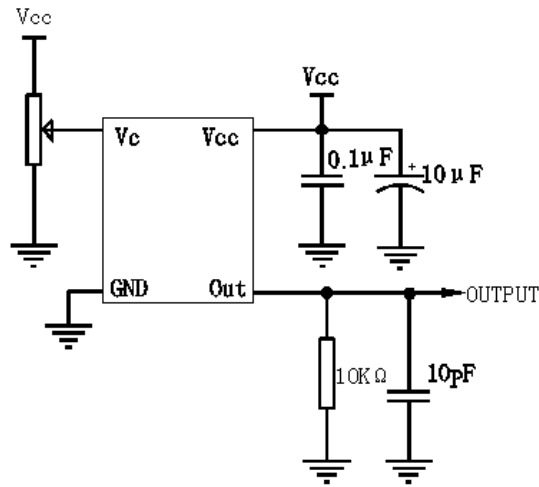
Top view

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

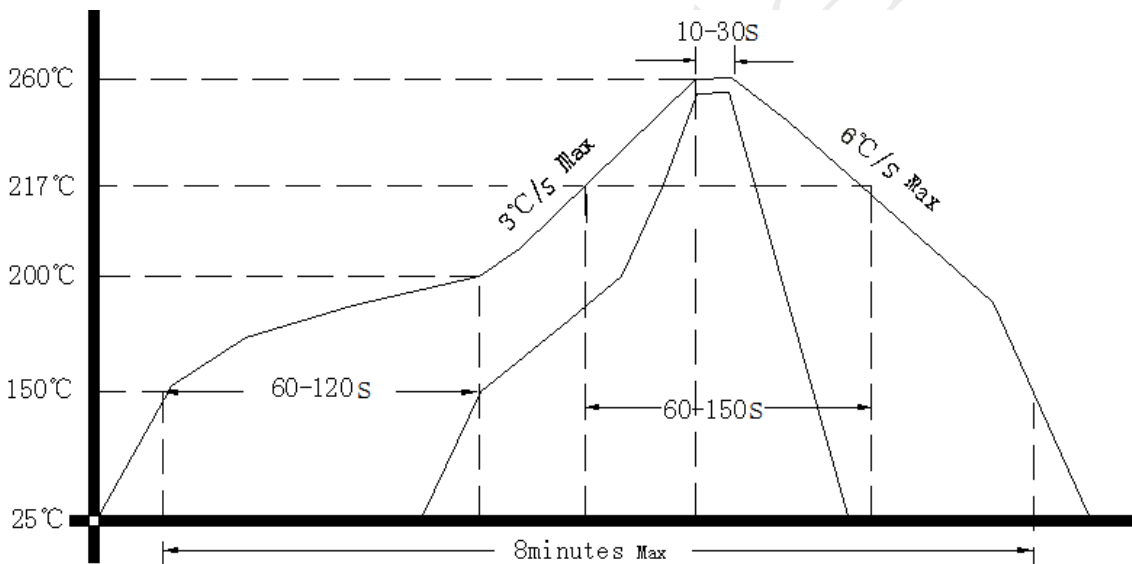
**Note2:** Referential weight 0.05g



### 3. Test Circuit



### 4. Reflow Soldering Curve (RoHS)



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

