

Travelling Merchant: _____

DATASHEET

Standard: **T53-F513-20.00MHz-A**

P/N: _____

Plot			The Label
Drew	Audited	Approved	Stamp, please! Thanks!
Date: 2019.05.20			

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1. Electrical Parameters

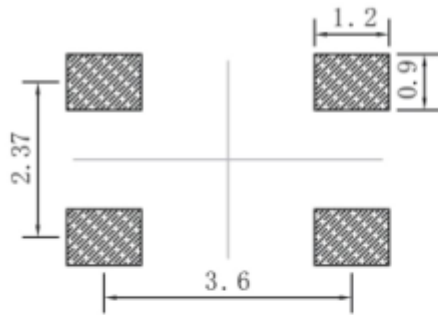
MODEL: T53-F513-20.00MHz-A						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency	20.00			MHz	
	Output Waveform	Clipped Sine Wave				
	Vp-p	0.8			V	
	Load	10KΩ//10pF				
Frequency Stabilities	Frequency Tolerance vs. Operating Temperature Range	-0.5		+0.5	$\times 10^{-6}$	T_A varied from -40°C to 85°C , measurement referenced to frequency observed with $f_{\text{ref}}=(f_{\text{max}}+f_{\text{min}})/2$, $V_{\text{cc}}=3.3\text{V}$, $V_c=1.5\text{V}$, $O_{\text{load}}=10\text{K}\Omega//10\text{pF}$, temperature variable speed less than 2°C per minute.
	Nominal Frequency Tolerance	-1		+1	$\times 10^{-6}$	Measurement referenced to frequency observed with $T_A=25^{\circ}\text{C}$, $V_{\text{cc}}=3.3\text{V}$, $V_c=1.5\text{V}$ within 30 days after ex-works.
	Frequency Tolerance vs. Supply Voltage	-0.2		+0.2	$\times 10^{-6}$	measurement referenced to frequency observed $T_A=25^{\circ}\text{C}$, V_{cc} varied from 3.13V to 3.47V, $V_c=1.5\text{V}$ and $O_{\text{Load}}=10\text{K}\Omega//10\text{pF}$.
	Frequency Tolerance vs. Load	-0.2		+0.2	$\times 10^{-6}$	5% load change measurement referenced to frequency observed with $T_A=25^{\circ}\text{C}$, $V_{\text{cc}}=3.3\text{V}$, $V_c=1.5\text{V}$ and $O_{\text{Load}}=10\text{K}\Omega//10\text{pF}$.
	Aging Tolerance 1 Year	-0.5		+0.5	$\times 10^{-6}$	$T_A=25^{\circ}\text{C}$, $V_{\text{cc}}=3.3\text{V}$, $V_c=1.5\text{V}$ and after 1h of operation.
	Aging Tolerance 10 Year	-3		+3	$\times 10^{-6}$	
Power Supply	Operating Current			10	mA	@ 25°C , $V_{\text{cc}}=3.3\text{V}$, $V_c=1.5\text{V}$, $O_{\text{Load}}=10\text{K}\Omega//10\text{pF}$.
	Supply Voltage	3.13	3.3	3.47	V	



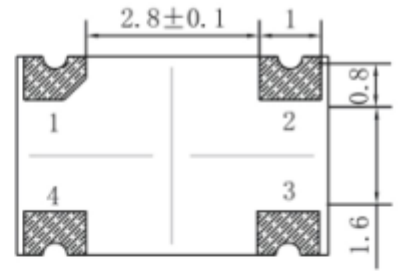
Voltage Control	Frequency tuning range	-15		-10	$\times 10^{-6}$	$V_c=0.5V$. measurement referenced to $V_c=1.5V$.
		-1		+1	$\times 10^{-6}$	$V_c=1.5V$. measurement referenced to Exactly 20.00MHz.
		+10		+15	$\times 10^{-6}$	$V_c=2.5V$. measurement referenced to $V_c=1.5V$.
	Linearity			10	%	
	Slope	Positive				
	Input Impedance	100				K Ω
Phase Noise	Phase Noise		-85	-80	dBc/Hz	10Hz
			-115	-108		100Hz
			-130	-125		1KHz
			-145	-140		10KHz
			-150	-145		100KHz
			-150	-145		1MHz
Environmental Conditions	Operable Temperature	-40		+85	$^{\circ}C$	
	Storage Temperature	-55		+105	$^{\circ}C$	
	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 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 ($^{\circ}C$)	-10~35 $^{\circ}C$				



2. Mechanical Structure(mm)



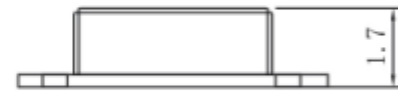
Solder pad layout



Bottom view



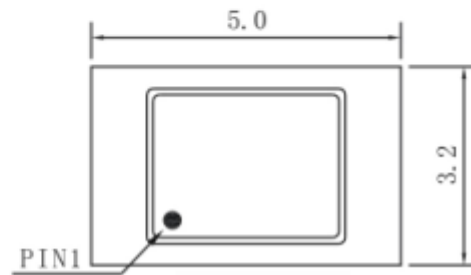
Right view



Side view

PIN FUNCTION

PIN	FUNCTION
1	VC
2	GND
3	OUTPUT
4	VCC



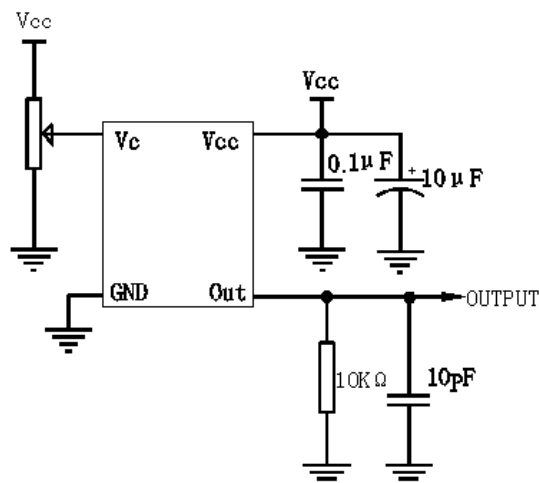
Top view

Note1: Tolerance $\pm 0.1\text{mm}$ without mark

Note2: Referential weight 0.05g

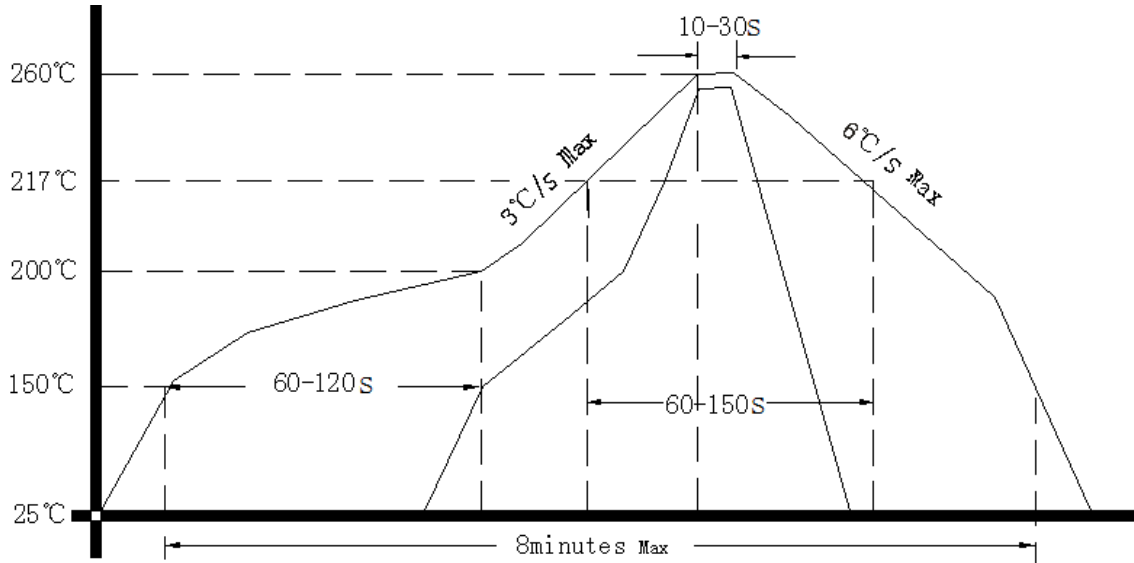
Note3: NC is not connect

3. Test Circuit





4. Reflow Soldering Curve (RoHS)



5. Package: Tape & Reel (mm)

