

Travelling Merchant: \_\_\_\_\_

# DATASHEET

Standard:           **T53-S513-10.00MHz**          

P/N: \_\_\_\_\_

Plot			The Label
Drew	Audited	Approved	Stamp, please! Thanks!
Date: 2021.05.27			

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### Table of amendment

Version	Revision contents	Prepared by	Revised date
1.0	The first issued	<i>Amway</i>	2014.05.27
1.1	The “Mechanical Structure” changed	<i>Amway</i>	2021.05.27



## 1. Electrical Parameters

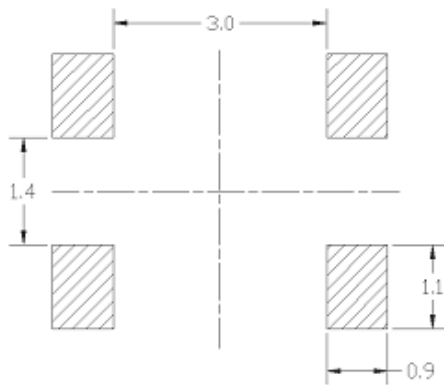
MODEL: T53-S513-10.00MHz						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency	10.00			MHz	
	Output Waveform	Clipped Sine Wave				
	Vp-p	0.8			V	
	Load	10KΩ//10pF				
Frequency Stabilities	Frequency Tolerance vs. Operating Temperature Range	-0.14		+0.14	$\times 10^{-6}$	$T_A$ varied from $-40^{\circ}\text{C}$ to $85^{\circ}\text{C}$ , measurement referenced to frequency observed with $f_{ref}=(f_{max}+f_{min})/2$ , $V_{cc}=3.3\text{V}$ , $V_c=1.5\text{V}$ , $O_{load}=10\text{K}\Omega//10\text{pF}$ , temperature variable speed less than $2^{\circ}\text{C}$ per minute.
	Nominal Frequency Tolerance	-0.5		+0.5	$\times 10^{-6}$	Measurement referenced to frequency observed with $T_A=25^{\circ}\text{C}$ , $V_{cc}=3.3\text{V}$ , $V_c=1.5\text{V}$ 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 3.13V to 3.47V, $V_c=1.5\text{V}$ and $O_{Load}=10\text{K}\Omega//10\text{pF}$ .
	Frequency Tolerance vs. Load	-0.2		+0.2	$\times 10^{-6}$	5% load change measurement referenced to frequency observed with $T_A=25^{\circ}\text{C}$ , $V_{cc}=3.3\text{V}$ , $V_c=1.5\text{V}$ and $O_{Load}=10\text{K}\Omega//10\text{pF}$ .
	Aging Tolerance Per Day	-0.02		+0.02	$\times 10^{-6}$	$T_A=25^{\circ}\text{C}$ , $V_{cc}=3.3\text{V}$ , $V_c=1.5\text{V}$ and after 1h of operation.
	Aging Tolerance 1 Year	-1		+1	$\times 10^{-6}$	
Power Supply	Operating Current			10	mA	@ $25^{\circ}\text{C}$ , $V_{cc}=3.3\text{V}$ , $V_c=1.5\text{V}$ , $O_{Load}=10\text{K}\Omega//10\text{pF}$ .
	Supply Voltage	3.13	3.3	3.47	V	



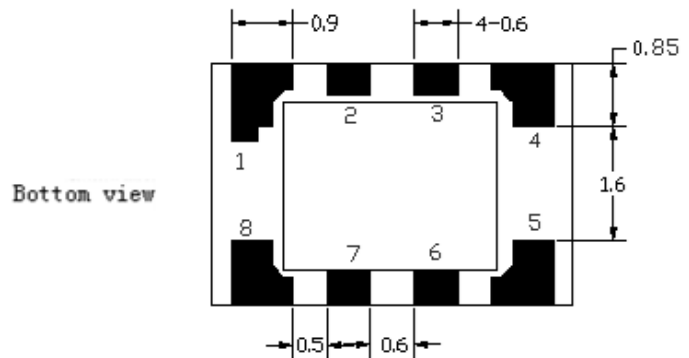
Voltage Control	Frequency tuning range	-15		-10	$\times 10^{-6}$	$V_c=0V$ . measurement referenced to $V_c=1.5V$ .
		-0.5		+0.5	$\times 10^{-6}$	$V_c=1.5V$ . measurement referenced to Exactly 10.00MHz.
		+10		+15	$\times 10^{-6}$	$V_c=3.0V$ . measurement referenced to $V_c=1.5V$ .
	Linearity			10	%	
	Slope	Positive				
Input Impedance	100				K $\Omega$	
Phase Noise	Phase Noise @25°C		-90	-85	dBc/Hz	10Hz
			-115	-110		100Hz
			-135	-130		1KHz
			-145	-140		10KHz
			-148	-143		100KHz
			-150	-145		1MHz
Environmental Conditions	Operable Temperature	-40		+85	°C	
	Storage Temperature	-55		+105	°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 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.					



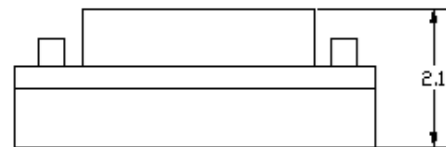
## 2. Mechanical Structure(mm)



Solder pad layout



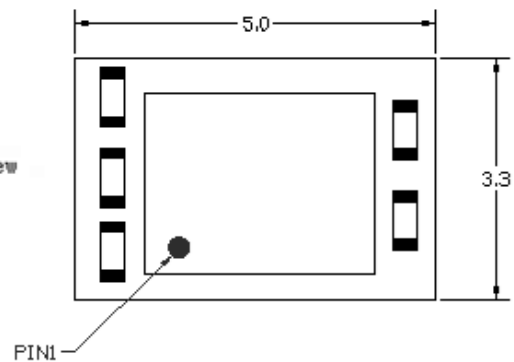
Side view



### PIN FUNCTION

PIN	NOTATION	FUNCTION
1	VC	Control Voltage
2, 3	NC	Not Connect
4	GND	GND
5	OUTPUT	RF Output
6, 7	NC	Not Connect
8	VCC	Supply Voltage

Top view



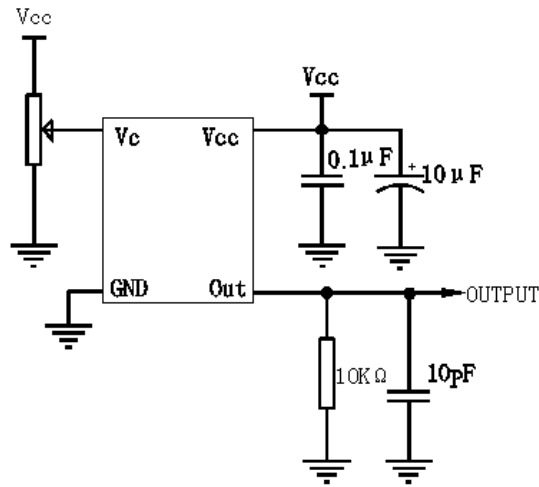
**Note1:** Tolerance  $\pm 0.2\text{mm}$  without mark

**Note2:** Referential Weight 0.05g

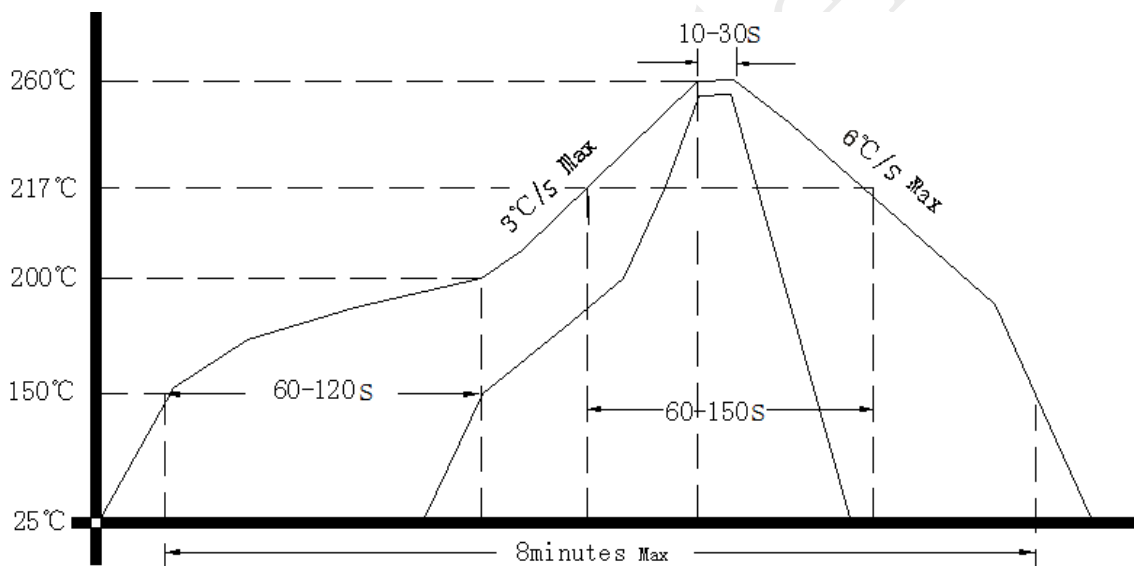
**Note3:** NC is not connect



### 3. Test Circuit



### 4. Reflow Soldering Curve (RoHS)



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

