

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

# DATASHEET

Standard:     **T75B-V311-28.80MHz-A**    

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

Plot			The Label
Drew	Audited	Approved	Stamp, please! Thanks!
Date: 2020.12.21			

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### Table of amendment

Version	Revision contents	Prepared by	Revised date
1.0	The first issued	Amway	2020.09.29
1.1	The “Frequency Tolerance vs. Operating Temperature Range”changed	Amway	2020.11.02
1.2	The “Phase Noise”changed	Amway	2020.12.21



## 1. Electrical Parameters

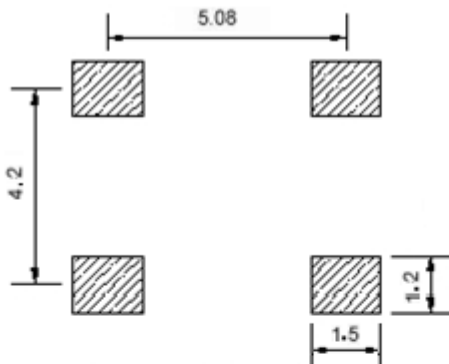
MODEL: T75B-V311-28.80MHz-A						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency	28.80			MHz	
	Output Waveform	HCMOS				
	Output Low Voltage			0.4	V	$V_{cc}=3.3V, O_{load}=15\text{ pF}$
	Output High Voltage	2.4			V	$V_{cc}=3.3V, O_{load}=15\text{ pF}$
	Duty Cycle	45	50	55	%	@50%
	Rise / Fall Time (10%~90%)			8	ns	@25°C
	Load	15			pF	
Frequency Stabilities	Frequency Tolerance vs. Operating Temperature Range	-0.1		+0.1	$\times 10^{-6}$	$T_A$ varied from -40°C to 100°C, measurement referenced to frequency observed with $f_{ref}=(f_{max}+f_{min})/2$ , $V_{cc}=3.3V, V_c=1.65V$ , temperature variable speed less than 2°C per minute.
	Initial Frequency Tolerance	-1		+1	$\times 10^{-6}$	Measurement referenced to frequency observed with $T_A=25^\circ\text{C}, V_{cc}=3.3V, V_c=1.65V$ within 30 days after ex-works.
	Frequency Tolerance vs. Supply Voltage	-0.05		+0.05	$\times 10^{-6}$	measurement referenced to frequency observed $T_A=25^\circ\text{C}, V_{cc}$ varied from 3.13V to 3.47V, $V_c=1.65V$ .
	Frequency Tolerance vs. Load	-0.05		+0.05	$\times 10^{-6}$	5% load change measurement referenced to frequency observed with $T_A=25^\circ\text{C}, V_{cc}=3.3V, V_c=1.65V, O_{Load}=15\text{ pF}$
	Short Term Stability			0.2	$\times 10^{-9}$	Temperature stability, no EMI/EMC or other interference, test after power for 1 hour ref. to 25°C;
	Aging Tolerance 1 Year	-0.8		+0.8	$\times 10^{-6}$	$T_A=25^\circ\text{C}, V_{cc}=3.3V, V_c=1.65V$ and after 1h of operation.
Power Supply	Current Consumption			10	mA	@25°C, $V_{cc}=3.3V, V_c=1.65V$ .
	Supply Voltage	3.13	3.3	3.47	V	



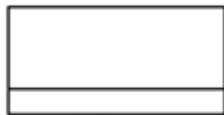
Voltage Control Characteristics	Frequency Tuning Range			-3	$\times 10^{-6}$	$V_c=0V$ . measurement referenced to $V_c=1.65V$
		-1		+1	$\times 10^{-6}$	$V_c=1.65V$ . measurement referenced to exactly 28.80MHz
		+3			$\times 10^{-6}$	$V_c=3.3V$ . measurement referenced to $V_c=1.65V$
	Linearity			10	%	
	Slope	Positive				
	Input Impedance	100				K $\Omega$
Phase Noise	Phase Noise		-90	-80	dBc/Hz	10Hz
			-115	-110		100Hz
			-140	-135		1KHz
			-150	-145		10KHz
			-155	-150		100KHz
Environmental Conditions	Operable Temperature	-40		+100	$^{\circ}C$	
	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;/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 ( $^{\circ}C$ )	-10~35 $^{\circ}C$				



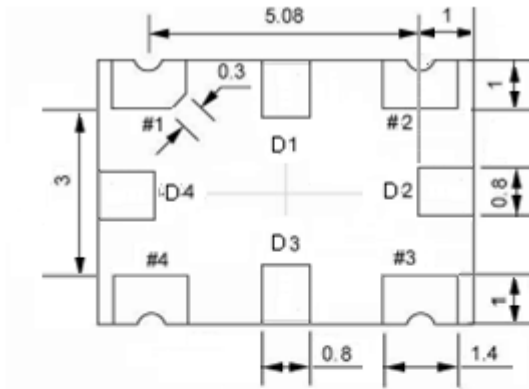
## 2. Mechanical Structure(mm)



Solder pad layout



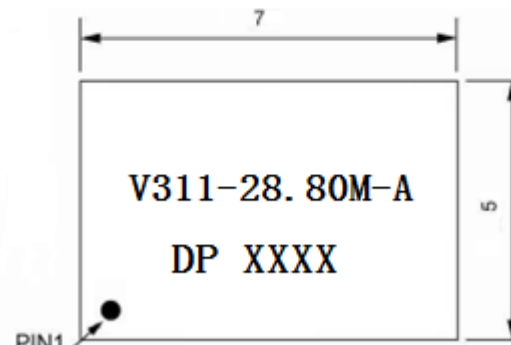
Right view



Bottom view



Side view



Top view

### PIN FUNCTION

PIN	NOTATION	FUNCTION
D1, D2, D3, D4	NC	Not Connect
1	VC	Control Voltage
2	GND	GND
3	OUTPUT	RF Output
4	VCC	Supply Voltage

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

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

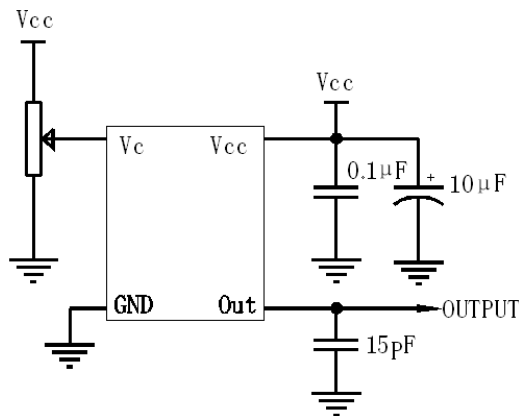
After two xx representative: year

**Note3:** Referential weight 0.2g

**Note4:** NC is not connect



### 3. Test circuit



### 4. Reflow Soldering Curve (RoHS)



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

