

Travelling Merchant: _____

DATASHEET

Standard: T75B-V311-28.80MHz-A

P/N: _____

Plot			FOR 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	<i>Amway</i>	2020.09.29
1.1	The “Frequency Tolerance vs. Operating Temperature Range”changed	<i>Amway</i>	2020.11.02
1.2	The “Phase Noise”changed	<i>Amway</i>	2020.12.21



1. Electrical Parameters

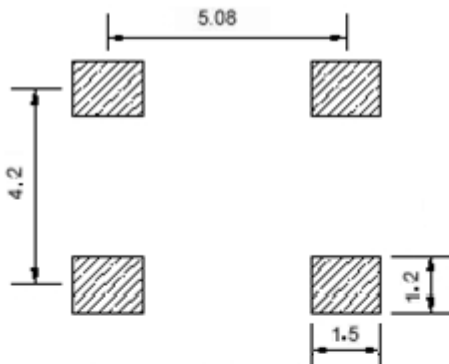
MODEL: T75B-V311-28.80MHz-A						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency	28.80			MHz	
	Output Waveform	HCMOS				
	Output Low Voltage			0.4	V	$V_{cc}=3.3V, O_{load}=15\text{ pF}$
	Output High Voltage	2.4			V	$V_{cc}=3.3V, O_{load}=15\text{ pF}$
	Duty Cycle	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	



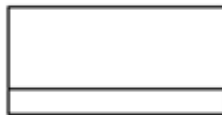
Voltage Control Characteristics	Frequency Tuning Range			-3	$\times 10^{-6}$	$V_c=0V$. measurement referenced to $V_c=1.65V$
		-1		+1	$\times 10^{-6}$	$V_c=1.65V$. measurement referenced to exactly 28.80MHz
		+3			$\times 10^{-6}$	$V_c=3.3V$. measurement referenced to $V_c=1.65V$
	Linearity			10	%	
	Slope	Positive				
	Input Impedance	100				K Ω
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)



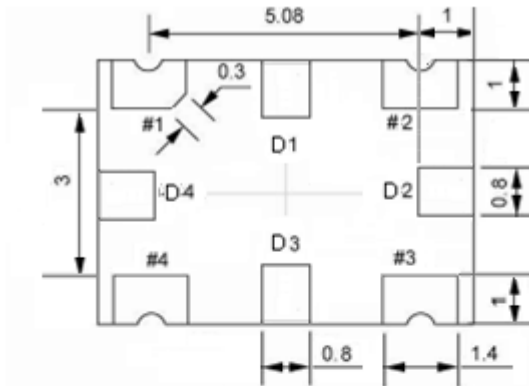
Solder pad layout



Right view

PIN FUNCTION

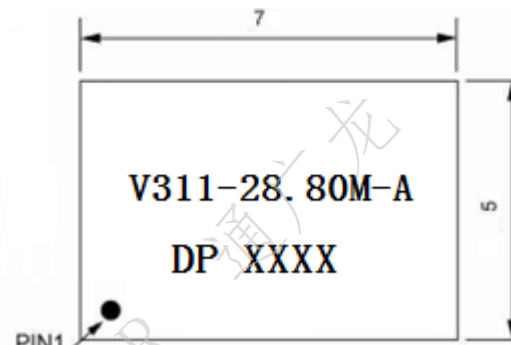
PIN	NOTATION	FUNCTION
D1, D2, D3, D4	NC	Not Connect
1	VC	Control Voltage
2	GND	GND
3	OUTPUT	RF Output
4	VCC	Supply Voltage



Bottom view



Side view



Top view

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

Note2: The first two xx representative: week

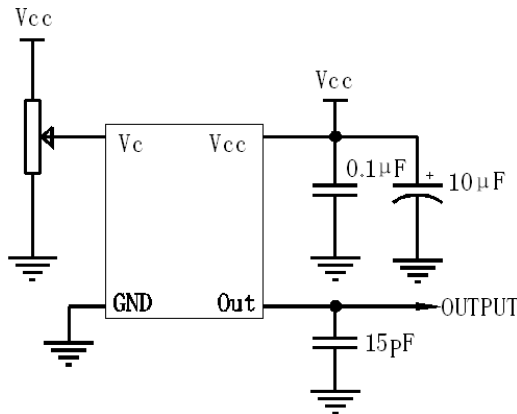
After two xx representative: year

Note3: Referential weight 0.2g

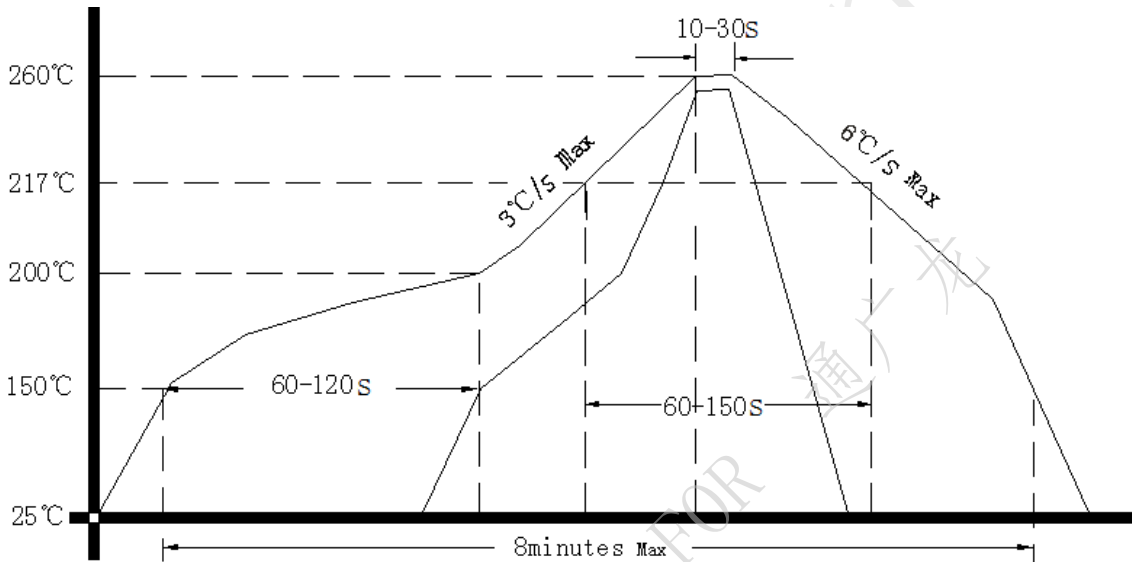
Note4: NC is not connect



3. Test circuit



4. Reflow Soldering Curve (RoHS)



5. Package: Tape & Reel (mm)

