



Table of amendment

Version	Revision contents	Prepared by	Revised date
1.0	The first issued	<i>Amway</i>	2019.09.02
1.1	The “ESD Level” “Moisture Sensitivity Level” “Mechanical Structure” changed	<i>Amway</i>	2020.03.16
1.2	The “Moisture Sensitivity Level” “Mechanical Structure” changed	<i>Amway</i>	2020.07.13
1.3	Add “G sensitivity”	<i>Amway</i>	2020.12.01
1.4	The “G sensitivity” and “Marking” changed	<i>Amway</i>	2020.12.10
1.5	Add “Duty Cycle”,The “Phase Noise”“Package: Tape & Reel”changed	<i>Amway</i>	2021.01.12
1.6	The “Mechanical Structure” “Reflow Soldering Curve (RoHS)” changed	<i>Amway</i>	2022.03.02



1. Electrical Parameters

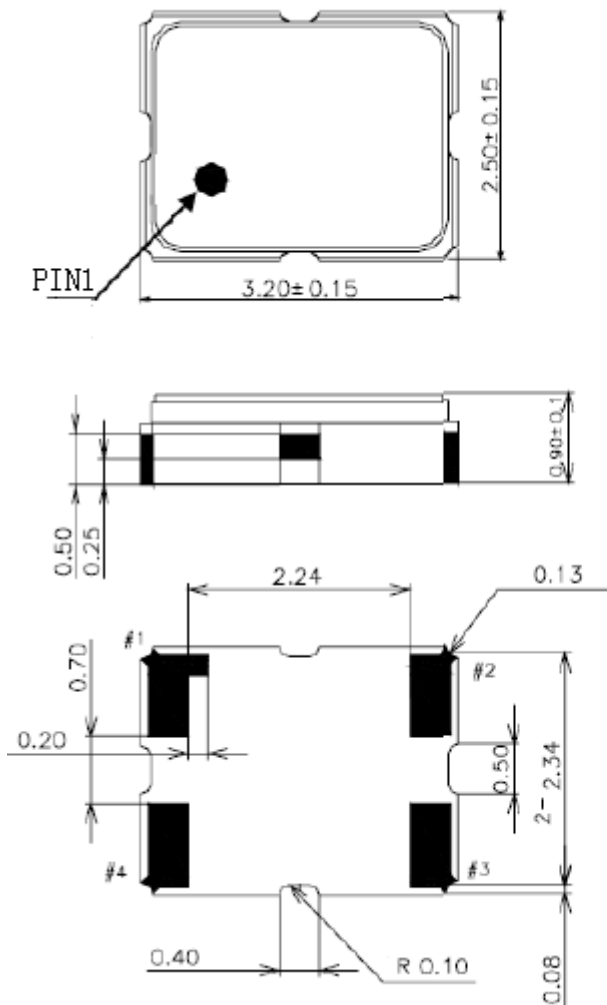
MODEL: T32-1801-20.00MHz						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency	20.00			MHz	
	Output Waveform	Chipped sine-wave				
	Output Waveform	0.8			V	
	Load	10KΩ//10pF				
	Duty Cycle	40		60	%	
	Start-up Time			5	ms	
	Spurious Suppression			5	dBc	
	Frequency 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 $f_{\text{ref}}=(f_{\text{max}}+f_{\text{min}})/2$, $V_{\text{cc}}=3.3\text{V}$, $O_{\text{load}}=10\text{K}\Omega//10\text{pF}$, temperature variable speed less than 2°C per minute.
	Initial Frequency Tolerance	-2		+2	$\times 10^{-6}$	Measurement referenced to frequency observed $T_A=25^{\circ}\text{C}$, sixty minutes, after reflow, $V_{\text{cc}}=3.3\text{V}$, $O_{\text{Load}}=10\text{K}\Omega//10\text{pF}$.
	Frequency Slope	-0.25		+0.25	$\times 10^{-6}/^{\circ}\text{C}$	Temperature variable speed 2°C per minute.
	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 3.135V to 3.465V, 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 $T_A=25^{\circ}\text{C}$, $V_{\text{cc}}=3.3\text{V}$, $O_{\text{Load}}=10\text{K}\Omega//10\text{pF}$.
	G sensitivity			2	$\times 10^{-9}/\text{g}$	Gamma vector of all three axes from 30Hz to 1500Hz
Aging Tolerance 1 Years	-1		+1	$\times 10^{-6}$	$T_A=25^{\circ}\text{C}$, $V_{\text{cc}}=3.3\text{V}$ and after 1h of operation.	
Aging Tolerance 10 Years	-5		+5	$\times 10^{-6}$		
Power Supply	Supply Current			5	mA	@ 25°C , $V_{\text{cc}}=3.3\text{V}$, $O_{\text{load}}=10\text{K}\Omega//10\text{pF}$.
	Supply Voltage	3.135	3.3	3.465	V	
	Short-Term Stability Allan Variance	-0.009		+0.009	$\times 10^{-6}$	Temperature stability, no EMI/EMC or other interference, test after power for 1hour ref. to 25°C ; 1s



Phase Noise	Phase Noise		-65	-61	dBc/Hz	1Hz
			-91	-87		10Hz
			-118	-114		100Hz
			-138	-134		1KHz
			-147	-143		10KHz
			-147	-143		40KHz
			-147	-143		100KHz
			-153	-149		1MHz
Environmental Conditions	Operable Temperature	-40		+85	°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 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.				
Ultra Sonic Cleaning	Cleaning equipment frequency:40KHz;Cleaning solvent : Bromopropane ; Cleaning time: 15min. per each time, at least 3 times. Ultrasonic power:1200W					
Full Package Storage	Relative humidity (%)	20%~70%				
	Temperature (°C)	-10~35°C				



2. Mechanical Structure(mm)



PIN FUNCTION

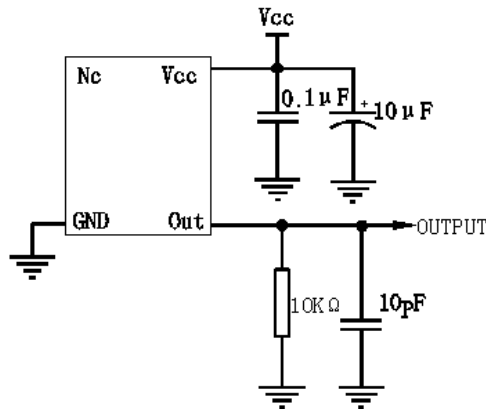
PIN	FUNCTION
1	NC
2	GND
3	OUTPUT
4	VCC

Note1: Tolerance ± 0.1 mm without mark

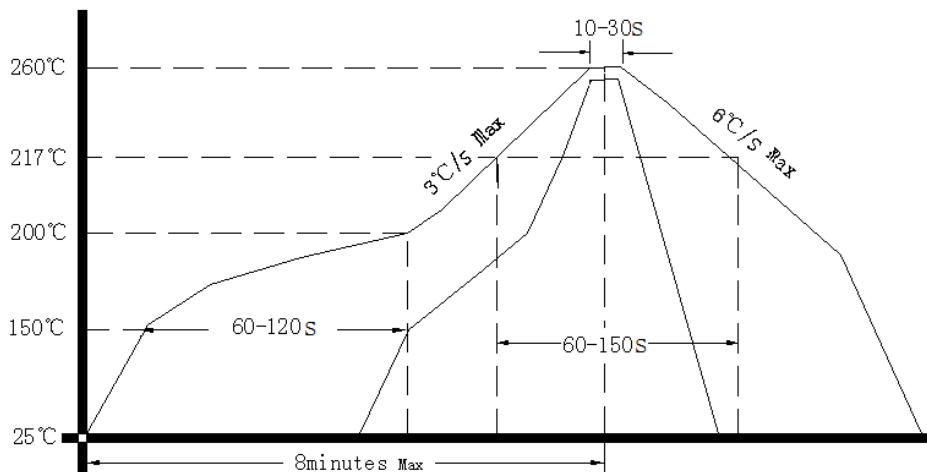
Note2: Referential weight 0.02g



3. Test circuit



4. Reflow Soldering Curve (RoHS)



5. Package: Tape & Reel (mm)

