

Travelling Merchant: _____

DATASHEET

Standard: SAB-O22A-SBDV-14.40MHz

P/N: _____

Plot			The Label
Drew	Audited	Approved	Stamp, please! Thanks!
Date: 2024.08.02			

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Table of amendment

Version	Revision contents	Prepared by	Revised date
1.0	The first issued	<i>Amway</i>	2023.04.18
1.1	The “Frequency Tolerance vs. Operating Temperature Range” “Reference Voltage” “Warm up current” “Mechanical Structure” changed	<i>Amway</i>	2023.05.09
1.2	Revise “Mechanical Structure” typo	<i>Amway</i>	2024.08.02



1. Electrical Parameters

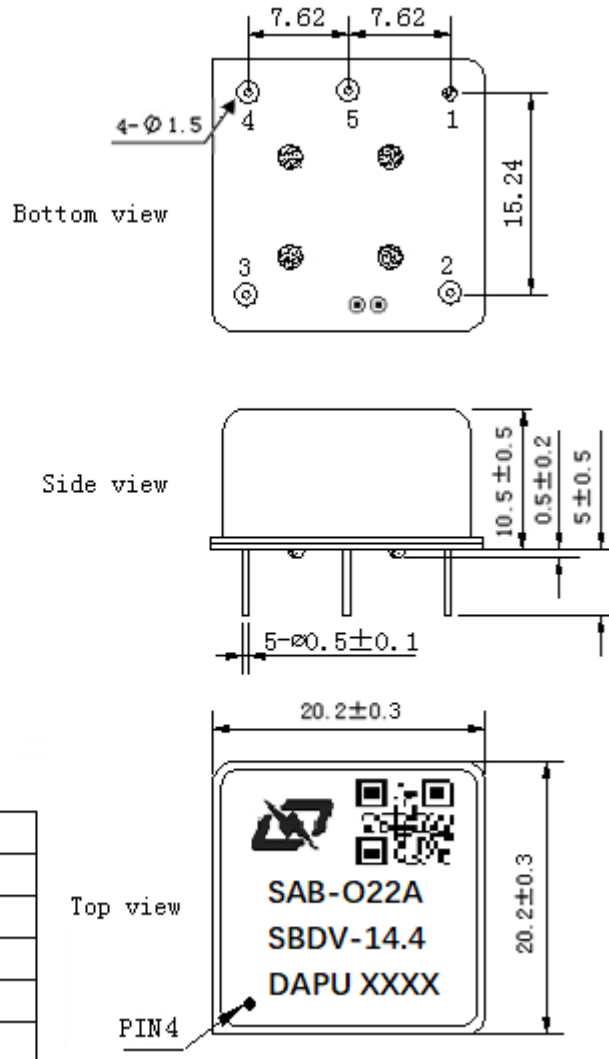
MODEL: SAB-O22A-SBDV-14.40MHz						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency	14.40			MHz	
	Output Waveform	HCMOS				
	Output Low Voltage			0.4	V	$V_{cc}=5.0V, O_{load}=15pF$
	Output High Voltage	3.9			V	$V_{cc}=5.0V, O_{load}=15pF$
	Duty Cycle	45		55	%	@50%
	Rise / Fall Time (10%~90%)			6	ns	
	Load	15			pF	
Frequency Stabilities	Frequency Tolerance vs. Operating Temperature Range	-0.02		+0.02	$\times 10^{-6}$	T_A varied from $-55^{\circ}C$ to $85^{\circ}C$, measurement referenced to frequency observed with $f_{ref}=(f_{max}+f_{min})/2, V_{cc}=5.0V, O_{load}=15pF$, temperature rise speed less than $2^{\circ}C$ per minute.
	Initial Frequency Tolerance	-0.2		+0.2	$\times 10^{-6}$	Measurement referenced to frequency observed with $T_A=25^{\circ}C, V_{cc}=5.0V, V_c=2.1V$, and after 15 minutes of operation, within 30 days after ex-works.
	Frequency Tolerance vs. Supply Voltage	-5		+5	$\times 10^{-9}$	measurement referenced to frequency observed $T_A=25^{\circ}C, V_{cc}$ varied from 4.75V to 5.25V, $V_c=2.1V$, and $O_{Load}=15pF$.
	Frequency Tolerance vs. Load	-5		+5	$\times 10^{-9}$	5% load change measurement referenced to frequency observed with $T_A=25^{\circ}C, V_{cc}=5.0V, V_c=2.1V$, and $O_{Load}=15pF$.
	Short-Term Stability Allan Variance			0.01	$\times 10^{-9}$	Temperature stability, no EMI\EMC or other interference, test after power for 1hour ref. to $25^{\circ}C$; 1s.
	Aging Tolerance Per Day	-0.5		+0.5	$\times 10^{-9}$	V_{cc}, T_A constant measurement referenced to frequency observed with $T_A=25^{\circ}C, V_{cc}=5.0V$, after 30 days of operation.
	Aging Tolerance 1 Year	-0.06		+0.06	$\times 10^{-6}$	



Power Supply	Supply Voltage	4.75	5.0	5.25	V	
	Reference Voltage	4.1	4.2	4.41	V	
	Steady Consumption			200	mA	@25°C
	Warm up current			700	mA	
	Warm up Time			3	min	@25°C within $\pm 0.1 \times 10^{-6}$ of final frequency with reference after 1 hour on.
Voltage Control Characteristics	Frequency Tuning Range			-0.5	$\times 10^{-6}$	$V_c=0V$. measurement referenced to $V_c=2.1V$
		-0.2		+0.2	$\times 10^{-6}$	$V_c=2.1V$. measurement referenced to Exactly 14.40MHz
		+0.5			$\times 10^{-6}$	$V_c=4.2V$. measurement referenced to $V_c=2.1V$
	Linearity			10	%	
	Slope	Positive				
	Input Impedance	100			K Ω	
Phase Noise	Phase Noise		-120		dBc/Hz	10Hz
			-145			100Hz
			-155			1KHz
			-160			10KHz
			-165			100KHz
Environmental Conditions	Operable Temperature	-55		+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	Not humidity sensitive.				
	Vibration	In accordance with the regulations of GJB150.16A-2009, the typical Spectral type of the caterpillar car				
Shock	In accordance with the regulations of GJB150.18A-2009, ground equipment impact requirements					
Full Package Storage	Relative humidity (%)	20% ~70%				
	Temperature (°C)	-10~35°C				



2. Mechanical Structure (mm)



PIN FUNCTION

PIN	NOTATION	FUNCTION
1	GND	GND
2	OUTPUT	RF Output
3	WCC	Supply Voltage
4	WC	Control Voltage
5	VREF	VREF

Note1: Tolerance ± 0.20mm without mark

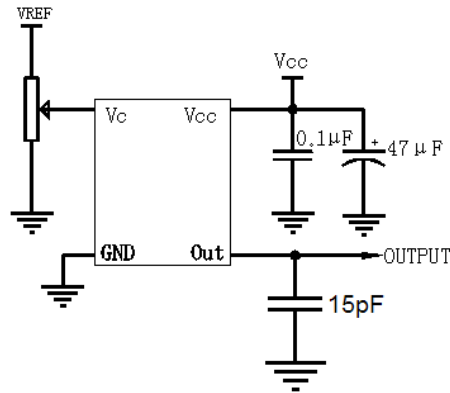
Note2: The first two xx representative: week
After two xx representative: year

Note3: Referential weight 8.0g

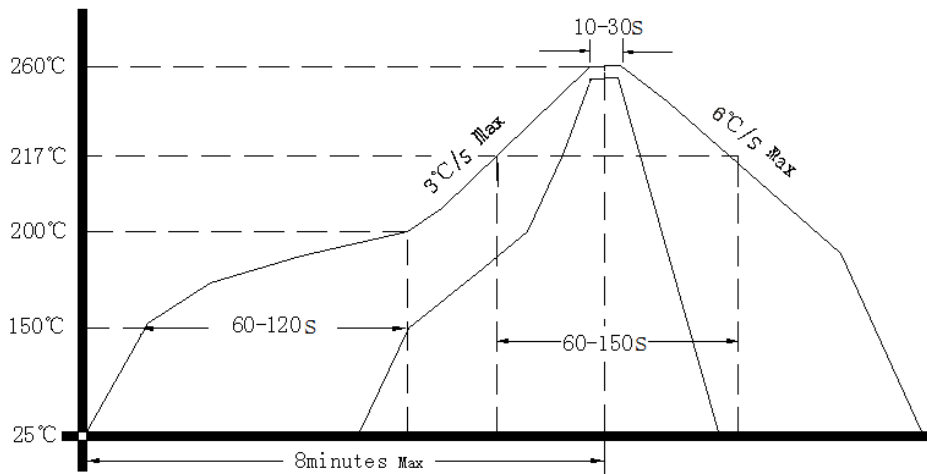
Note4: NC is not connect



4. Test Circuit



5. Reflow Soldering Curve (RoHS)



6. Package (mm)

