

Customer Code : \_\_\_\_\_

# DATASHEET

DAPU P/N: **079A-K313-20.00MHz-G258**

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DAPU			Customer Approval
Drew	Audited	Approved	Stamp, please! Thanks!
Date: 2022.05.07			

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## 1. Electrical Parameters

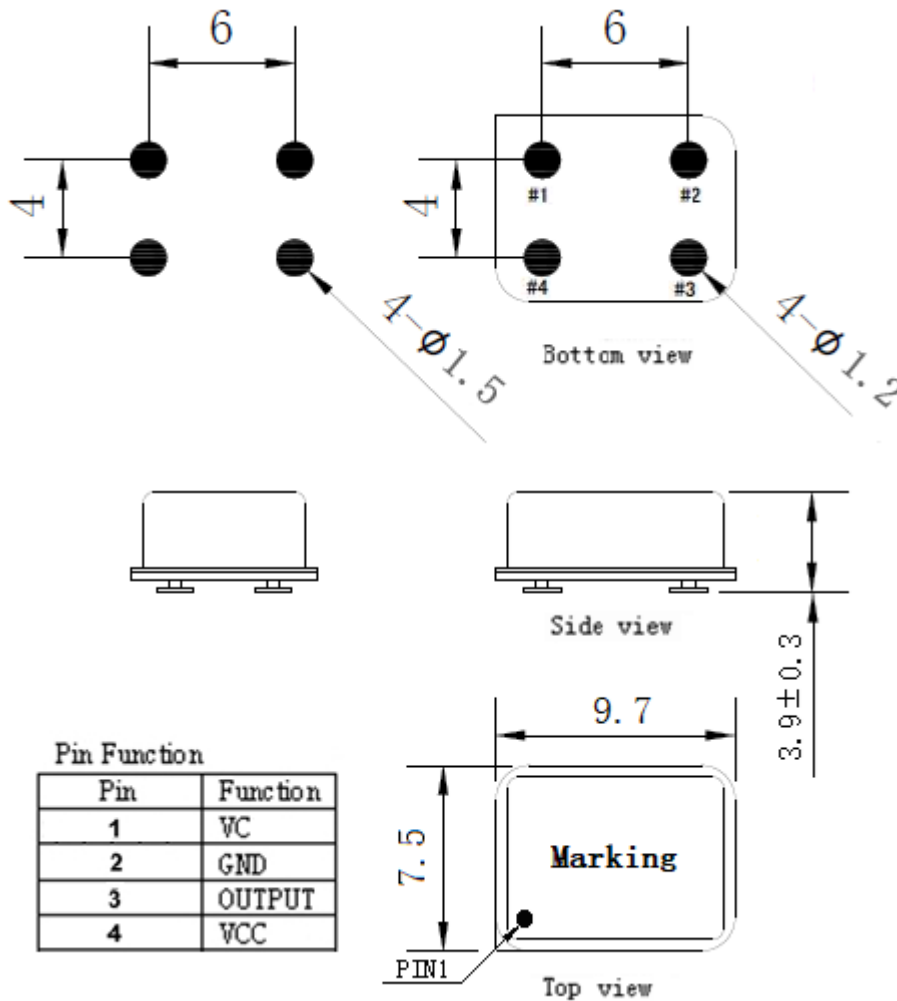
MODEL: O79A-K313-20.00MHz-G258						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency	20.00			MHz	
	Output Waveform	HCMOS				
	Output Low Voltage			0.4	V	$V_{cc}=3.3V, O_{load}=15\text{ pF}$
	Output High Voltage	2.4			V	$V_{cc}=3.3V, O_{load}=15\text{ pF}$
	Duty Cycle	45	50	55	%	@50%
	Rise / Fall Time (10%~90%)			6	ns	@25°C
	Startup time till valid waveform			50	ms	Time until RF output waveform is within output level, duty cycle and rise/fall time spec
	Load	15			pF	
Frequency Stabilities	Frequency Tolerance vs. Operating Temperature Range	-0.01		+0.01	$\times 10^{-6}$	$T_A$ varied from -40°C to 95°C, measurement referenced to frequency observed with $f_{ref}=(f_{max}+f_{min})/2, V_{cc}=3.3V, V_c=1.65V,$ $O_{load}=15\text{pF}$ , temperature variable speed less than 2°C per minute.
	Initial Frequency Tolerance	-0.5		+0.5	$\times 10^{-6}$	Measurement referenced to frequency observed with $T_A=25^\circ\text{C}, V_{cc}=3.3V, V_c=1.65V,$ 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 $T_A=25^\circ\text{C}, V_{cc}$ varied from 3.13V to 3.47V, $V_c=1.65V$ and $O_{load}=15\text{pF}$ .
	Frequency Tolerance vs. Load	-5		+5	$\times 10^{-9}$	10% load change measurement referenced to frequency observed with $T_A=25^\circ\text{C}, V_{cc}=3.3V,$ $V_c=1.65V,$ and $O_{load}=15\text{pF}$ .
	Frequency vs. Temperature Slope	-0.5		+0.5	$\times 10^{-9}/^\circ\text{C}$	$T_{amb}$ slope $\pm 1^\circ\text{C}/\text{min}$ with any temperature window over operating temperature range. Includes also hysteresis effects. Slope measurement for device qualification as described in the related note.
	G-Sensitivity		0.5	0.7	$\times 10^{-9}/\text{G}$	
	Root Allan Variance		0.03		$\times 10^{-9}$	$\tau = 1.0\text{s}$
	Aging Tolerance Per Day	-2		+2	$\times 10^{-9}$	$T_A=25^\circ\text{C}, V_{cc}=3.3V,$ and after 30 days of operation.
	Aging Tolerance 1 Year	-0.3		+0.3	$\times 10^{-6}$	



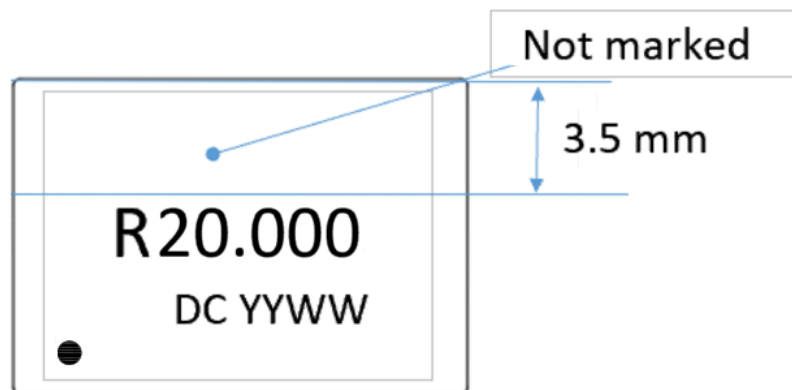
Power Supply	Warm up Time			60	s	@25°C
	Steady Consumption			230	mA	@25°C
	Warm up current			600	mA	
	Supply Voltage	3.135	3.3	3.465	V	
Phase Noise	Phase Noise @25°C		-80	-70	dBc/Hz	1Hz
			-115	-110		10Hz
			-146	-138		100Hz
			-160	-154		1KHz
			-164	-159		10KHz
			-164	-160		100KHz
			-165	-161		1MHz
Voltage Control Characteristics	Frequency Tuning Range			-2	$\times 10^{-6}$	$V_c=0V$ . measurement referenced to $V_c=1.65V$
		-0.5		+0.5	$\times 10^{-6}$	$V_c=1.65V$ . measurement referenced to Exactly 20.00MHz
		+2			$\times 10^{-6}$	$V_c=3.3V$ . measurement referenced to $V_c=1.65V$
	Linearity			10	%	
	Slope	Positive				
	Input Impedance	100			K $\Omega$	
Environmental Conditions	Operating Temperature	-40		+95	°C	
	Operable Temperature	-45		+105	°C	
	Storage Temperature	-55		+105	°C	
	Relative Humidity Range	5		95	%	
	Absolute Humidity Range	1		29	g/m <sup>3</sup>	
	Air Pressure Range	70		106	kPa	
	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	Test Condition: 0.75mm ;acceleration:10g;10Hz~500Hz, one cycle per 30 min, test 2 hour. (3 times for each 3 directions X , Y , Z), IEC 68-2-06 Test Fc.				
	Shock	50g; 11ms; 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 (°C)	-10~35°C				



## 2. Mechanical Structure(mm)



### Marking:



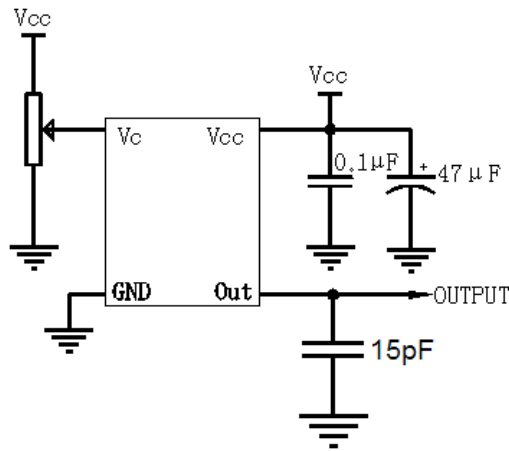
**Note1:** Tolerance  $\pm 0.30\text{mm}$  without mark

**Note2:** "YYWW" --- Data code is Year(YY)+Week(WW) format

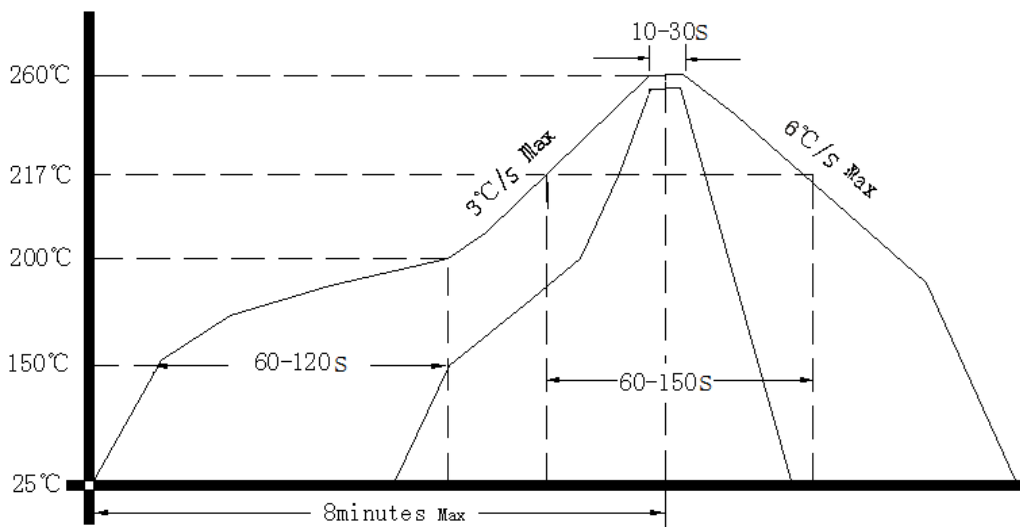
**Note3:** Referential weight 0.7g



### 3. Test Circuit



### 4. Reflow Soldering Curve (RoHS)



Note: Passing through reflow upside down is not supported

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

