

**Features**

- Frequencies between 1 MHz and 110 MHz accurate to 6 decimal places
- Operating temperature from -40°C to 125°C.
- Supply voltage of 1.8V or 2.5V to 3.3V
- Excellent total frequency stability as low as ±20 ppm
- Low power consumption of 3.5 mA typical at 1.8V
- LVCMOS/LVTTL compatible output
- Industry-standard packages: 2.0 x 1.6, 2.5 x 2.0, 3.2 x 2.5, 5.0 x 3.2, 7.0 x 5.0 mm x mm

**Applications**

- Industrial, medical, non AEC-Q100 automotive, avionics and other high temperature applications
- Industrial sensors, PLC, motor servo, outdoor networking equipment, medical video cam, asset tracking systems, etc.

**Electrical Specifications**

**Table 1. Electrical Characteristics**

All Min and Max limits are specified over temperature and rated operating voltage with 15 pF output load unless otherwise stated. Typical values are at 25°C and nominal supply voltage.

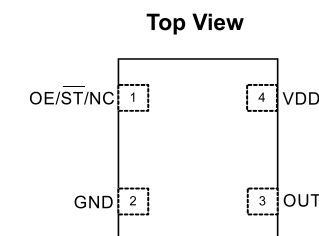
Parameters	Symbol	Min.	Typ.	Max.	Unit	Condition
<b>Frequency Range</b>						
Output Frequency Range	f	1	-	110	MHz	Refer to Table 7 for the exact list of supported frequencies list of supported frequencies
<b>Frequency Stability and Aging</b>						
Frequency Stability	F <sub>stab</sub>	-20	-	+20	ppm	Inclusive of Initial tolerance at 25°C, 1st year aging at 25°C, and variations over operating temperature, rated power supply voltage and load (15 pF ± 10%).
		-25	-	+25	ppm	
		-30	-	+30	ppm	
		-50	-	+50	ppm	
<b>Operating Temperature Range</b>						
Operating Temperature Range (ambient)	T <sub>use</sub>	-40	-	+105	°C	Extended Industrial
		-40	-	+125	°C	Automotive
<b>Supply Voltage and Current Consumption</b>						
Supply Voltage	V <sub>dd</sub>	1.62	1.8	1.98	V	
		2.25	2.5	2.75	V	
		2.52	2.8	3.08	V	
		2.7	3.0	3.3	V	
		2.97	3.3	3.63	V	
		2.25	-	3.63	V	
Current Consumption	I <sub>dd</sub>	-	3.8	4.7	mA	No load condition, f = 20 MHz, V <sub>dd</sub> = 2.8V, 3.0V or 3.3V
		-	3.6	4.5	mA	No load condition, f = 20 MHz, V <sub>dd</sub> = 2.5V
		-	3.5	4.5	mA	No load condition, f = 20 MHz, V <sub>dd</sub> = 1.8V
OE Disable Current	I <sub>od</sub>	-	-	4.5	mA	V <sub>dd</sub> = 2.5V to 3.3V, OE = Low, Output in high Z state.
		-	-	4.3	mA	V <sub>dd</sub> = 1.8V, OE = Low, Output in high Z state.
Standby Current	I <sub>std</sub>	-	2.6	8.5	µA	V <sub>dd</sub> = 2.8V to 3.3V, $\overline{ST}$ = Low, Output is weakly pulled down
		-	1.4	5.5	µA	V <sub>dd</sub> = 2.5V, $\overline{ST}$ = Low, Output is weakly pulled down
		-	0.6	4.0	µA	V <sub>dd</sub> = 1.8V, $\overline{ST}$ = Low, Output is weakly pulled down
<b>LVTTL Output Characteristics</b>						
Duty Cycle	DC	45	-	55	%	All V <sub>dds</sub>
Rise/Fall Time	Tr, Tf	-	1.0	2.0	ns	V <sub>dd</sub> = 2.5V, 2.8V, 3.0V or 3.3V, 20% - 80%
		-	1.3	2.5	ns	V <sub>dd</sub> = 1.8V, 20% - 80%
		-	1.0	3	ns	V <sub>dd</sub> = 2.25V - 3.63V, 20% - 80%
Output High Voltage	VOH	90%	-	-	V <sub>dd</sub>	IOH = -4 mA (V <sub>dd</sub> = 3.0V or 3.3V) IOH = -3 mA (V <sub>dd</sub> = 2.8V or 2.5V) IOH = -2 mA (V <sub>dd</sub> = 1.8V)
Output Low Voltage	VOL	-	-	10%	V <sub>dd</sub>	IOL = 4 mA (V <sub>dd</sub> = 3.0V or 3.3V) IOL = 3 mA (V <sub>dd</sub> = 2.8V or 2.5V) IOL = 2 mA (V <sub>dd</sub> = 1.8V)

**Table 1. Electrical Characteristics (continued)**

Parameters	Symbol	Min.	Typ.	Max.	Unit	Condition
<b>Input Characteristics</b>						
Input High Voltage	VIH	70%	-	-	V <sub>dd</sub>	Pin 1, OE or $\overline{ST}$
Input Low Voltage	VIL	-	-	30%	V <sub>dd</sub>	Pin 1, OE or $\overline{ST}$
Input Pull-up Impedence	Z <sub>in</sub>	50	87	150	kΩ	Pin 1, OE logic high or logic low, or $\overline{ST}$ logic high
		2	-	-	MΩ	Pin 1, $\overline{ST}$ logic low
<b>Startup and Resume Timing</b>						
Startup Time	T <sub>start</sub>	-	-	5	ms	Measured from the time V <sub>dd</sub> reaches its rated minimum value
Enable/Disable Time	T <sub>oe</sub>	-	-	130	ns	f = 110 MHz. For other frequencies, T <sub>oe</sub> = 100 ns + 3 * clock periods
Resume Time	T <sub>resume</sub>	-	-	5	ms	Measured from the time ST pin crosses 50% threshold
<b>Jitter</b>						
RMS Period Jitter	T <sub>jitt</sub>	-	1.6	2.5	ps	f = 75MHz, V <sub>dd</sub> = 2.5V, 2.8V, 3.0V or 3.3V
		-	1.9	3	ps	f = 75MHz, V <sub>dd</sub> = 1.8V
Peak-to-peak Period Jitter	T <sub>pk</sub>	-	12	20	ps	f = 75MHz, V <sub>dd</sub> = 2.5V, 2.8V, 3.0V or 3.3V
		-	14	25	ps	f = 75MHz, V <sub>dd</sub> = 1.8V
RMS Phase Jitter (random)	T <sub>phj</sub>	-	0.5	0.8	ps	f = 75MHz, Integration bandwidth = 900 kHz to 7.5 MHz
		-	1.3	2	ps	f = 75MHz, Integration bandwidth = 12 kHz to 20 MHz

**Table 2. Pin Description**

Pin	Symbol	Functionality
1	OE/ $\overline{ST}$ /NC	Output Enable H <sup>[1]</sup> : specified frequency output L: output is high impedance. Only output driver is disabled.
		Standby H <sup>[1]</sup> : specified frequency output L: output is low (weak pull down). Device goes to sleep mode. Supply current reduces to I <sub>std</sub> .
		No Connect Any voltage between 0 and V <sub>dd</sub> or Open <sup>[1]</sup> : Specified frequency output. Pin 1 has no function.
2	GND	Power Electrical ground
3	OUT	Output Oscillator output
4	VDD	Power Power supply voltage <sup>[2]</sup>

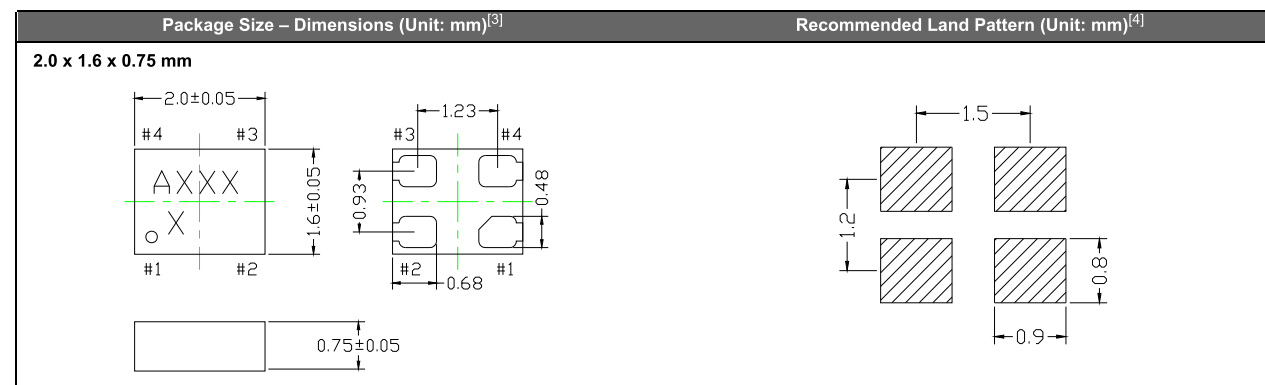


**Figure 1. Pin Assignments**

**Notes:**

1. In OE or  $\overline{ST}$  mode, a pull-up resistor of 10 kΩ or less is recommended if pin 1 is not externally driven. If pin 1 needs to be left floating, use the NC option.
2. A capacitor of value 0.1 µF or higher between V<sub>dd</sub> and GND is required.

**Dimensions and Patterns**



给您一颗快乐的“芯”！ YSO8918MR

军工级可编程振荡器  
+125°C High Temp Oscillators

Dimensions and Patterns

<p>2.5 x 2.0 x 0.75 mm</p>	
<p>3.2 x 2.5 x 0.75 mm</p>	
<p>5.0 x 3.2 x 0.75 mm</p>	
<p>7.0 x 5.0 x 0.90 mm</p>	

Notes:  
3. Top marking: Y denotes manufacturing origin and XXXX denote s manufacturing lot number. The value of "Y" will depend on the assembly location of the device.  
4. A capacitor of value 0.1 μF or higher between Vdd and GND is required.

PART Number Guide

Quartz Crystal Oscillator	Dimensions	Frequency (Hz)	Supply voltage (V)	Frequency Stability Overall (ppm)	Output	Pin	Material	Operating Temp. Range
O	7050	100M	E	D	H	4	M	A

给您一颗快乐的“芯”！ YSO8920MR

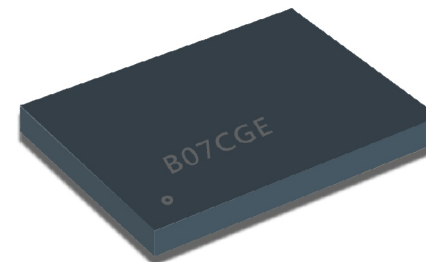
军工级可编程振荡器  
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Applications:

- Ruggedized equipment in harsh operating environment



Electrical Specifications

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Output Frequency Range	f	1	-	110	MHz	Refer to Table 2 for the exact list of supported frequencies list of supported frequencies
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Frequency Stability	F_stab	-20	-	+20	ppm	Inclusive of Initial tolerance at 25°C, 1st year aging at 25°C, and variations over operating temperature, rated power supply voltage and load (15 pF ± 10%).
		-25	-	+25	ppm	
		-30	-	+30	ppm	
		-50	-	+50	ppm	
<b>Operating Temperature Range</b>						
Operating Temperature Range	T_use	-55	-	+125	°C	
<b>Supply Voltage and Current Consumption</b>						
Supply Voltage	Vdd	1.62	1.8	1.98	V	
		2.25	2.5	2.75	V	
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<b>LVCMOS Output Characteristics</b>						
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