Dynamic Engineers Inc.
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VCXO7500S_series
7.0x 5.0 mm SMD Voltage Controlled Oscillator

Features and Benefits

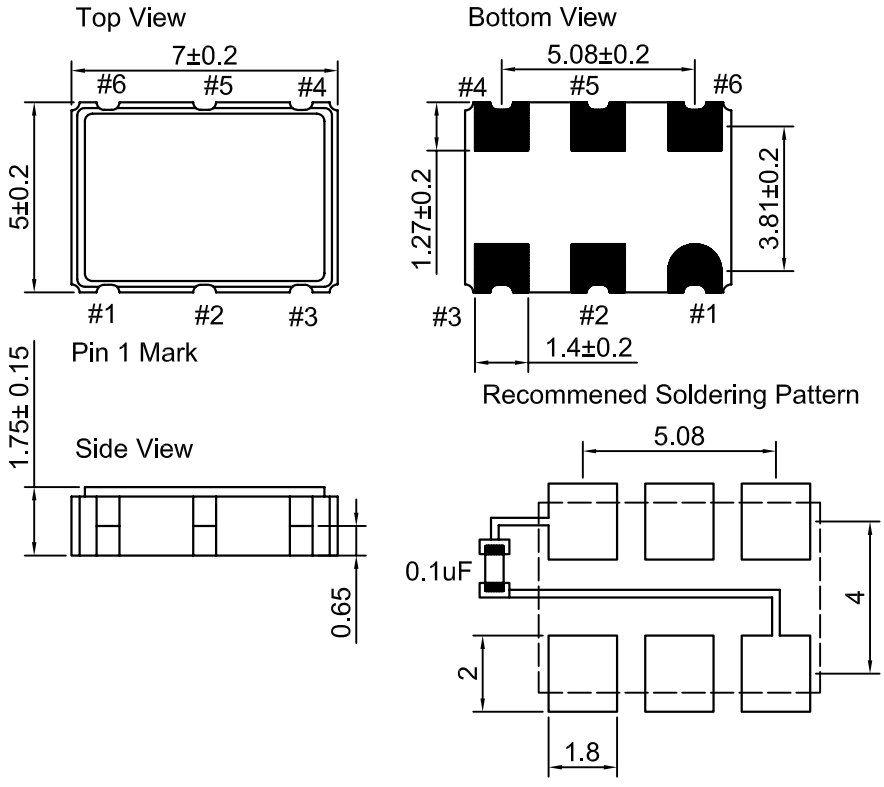
Typical 7.0x5.0x1.75 mm ceramic SMD package
Low jitter performance
Wide frequency control voltage
Complementary output
Tri state enable/disable

Typical Applications

-Set-top Box, HDTV, WiMAX/WLAN,
-xDSL/VoIP, Cable Modem

Mechanical Drawing & Pin Connections

Drawing No: MD150035-1



Pin Functions

Pin	Function
#1	Vcon
#2	Tri-State
#3	GND
#4	Output
#5	Comp.Output/NC
#6	V_{DD}

Unit in mm
1mm = 0.0394 incheds

PIN#5 Note: N.C. for CMOS
Comp. Output for LVPEC/LVDS

CMOS Specifications

Specification	Conditon	3.3V		Unit
		Min.	Max.	
Supply Voltage Variation	V_{DD}±5%	3.135	3.465	V
Frequency Range		1.5	170	MHz
Standard Frequency	10, 20, 25, 27, 32.768, 35.328, 38.88, 61.44, 122.88, 153.6			MHz
Supply Current	1.5MHz≤Fo<20MHz	-	10	mA
	20MHz≤Fo<50MHz	-	20	
	50MHz≤Fo≤80MHz	-	30	
	80MHz<Fo<160MHz	-	40	
	160MHz≤Fo≤170MHz	-	50	
Control Voltage		0.3	3.0	V
Absolute Pulling Range		±50	-	ppm
Output Level(CMOS)	Output High	2.97	-	V
	Output Low	-	0.33	
Transition Rise/Fall Time*	1.5MHz≤Fo<20MHz	-	5	nSec
	20MHz≤Fo<50MHz		4	
	50MHz≤Fo≤80MHz	-	3	
	80MHz<Fo≤170MHz	-	2	
Start Time		-	5	mSec
Tri-State(Input to Pin2)	Enable (High voltage or floating)	2.31	-	V
	Disable (Low voltage or GND)	-	0.99	
Period Jitter(Pk-Pk)		-	40	pSec
RMS Phase Jitter	Integrated 12KHz to 20MHz	-	1	pSec
Linearity		-	10	%
Modulation Bandwidth	1.5MHz≤Fo≤170MHz	15	-	KHz
Input Impedance	1.5MHz≤Fo≤170MHz	10000	-	Kohm
Phase Noise@30.72MHz	100Hz	-115		dBc/Hz
	1KHz	-135		
	10KHz	-150		
Aging	@25°c 1st year	-	±3	ppm
Storage Temp. Range	-55°C to +125°C			

Note: *Transition times are measured between 10% and 90% of V_{DD} with an output load of 15pF

Frequency Stability vs. Temperature (CMOS)

	±25PPM	**±50PPM**
-10°C to +60°C	Available	Available
-20°C to +70°C	Available	Available
-40°C to +85°C	Conditional	Available

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LVPECL/LVDS Specifications

Specification	Conditon	LVPECL				LVDS				Unit
		3.3V		2.5V		3.3V		2.5V		
		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
Supply Voltage Variation	V_{DD}±5%	3.135	3.465	2.375	2.625	3.135	3.465	2.375	2.625	V
Frequency Range		1.5	200	65	200	1.5	200	65	200	MHz
Standard Frequency		77.76, 106.25, 122.88, 125,155.52, 156.25, 200								MHz
Control Voltage		0.3	3.0	0	2.5	0.3	3.0	0	2.5	V
Absolute Pulling Range		±50	-	±50	-	±50	-	±50	-	ppm
Supply Current	1.5MHz≤ Fo<65MHz	-	75	-	75	-	45	-	45	mA
	65MHz≤Fo≤ 200MHz	-	100	-	100	-	80	-	80	
Output Level	Output High	2.275	-	1.475	-	-	1.6	-	1.6	V
	Output Low	-	1.68	-	1.095	0.9	-	0.9	-	
Transition Rise/Fall Time*		-	1.0	-	1.0	-	1.0	-	1.0	nSec
Start Time		-	3	-	3	-	3	-	3	mSec
Tri-State(Input to Pin2, Enable High)	Enable (High voltage or floating)	2.31	-	1.75	-	2.31	-	1.75	-	V
	Disable (Low voltage or GND)	-	0.99	-	0.75	-	0.99	-	0.75	
Linearity		-	10	-	10	-	10	-	10	%
Modulation Bandwidth		15	-	15	-	15	-	15	-	KHz
Input Impedance		10000	-	10000	-	10000	-	10000	-	Kohm
RMS Phase Jitter (Integrated 12KHz to 20MHz)	Fo<100MHz	-	1	-	1	-	1	-	1	pSec
	100MHz≤ Fo<125MHz	-	0.7	-	0.7	-	0.7	-	0.7	
	125MHz≤ Fo<150MHz	-	0.5	-	0.5	-	0.5	-	0.5	
	150MHz≤Fo	-	0.3	-	0.3	-	0.3	-	0.3	
Phase Noise @153.6MHz	@100Hz	-85		-85		-85		-85		dBc/Hz
	@1KHz	-115		-115		-115		-115		
	@10KHz	-130		-130		-130		-130		
Aging	@25°c 1st year	-	±3	-	±3	-	±3	-	±3	ppm
Storage Temp. Range		-55°C to +125°C								°C

Note: *Transition times are measured between 20% and 80% of V_{DD}

Frequency Stability vs. Temperature (LVPECL/LVDS)

	±25PPM	±50PPM
-10°C to +60°C	Conditional	Available
-20°C to +70°C	Conditional	Available
-40°C to +85°C	Not Available	Available