

# Ceramic SMD Crystal Oscillator SMD 5.0 x 3.2mm LVDS

MO5L series

MERITEK

## FEATURE

- Output Logic: LVDS
- Small SMD Ceramic Package
- Low Jitter Performance
- Applications: 10G-BIT, Ethernet, Fiber Channel, Storage Area Network, SONET, Enterprise Servers, Reference Clocks for ADC and DAC Telecom



## PART NUMBERING SYSTEM

MO5 L 33 J C 100M0  
(1) (2) (3) (4) (5) (6)

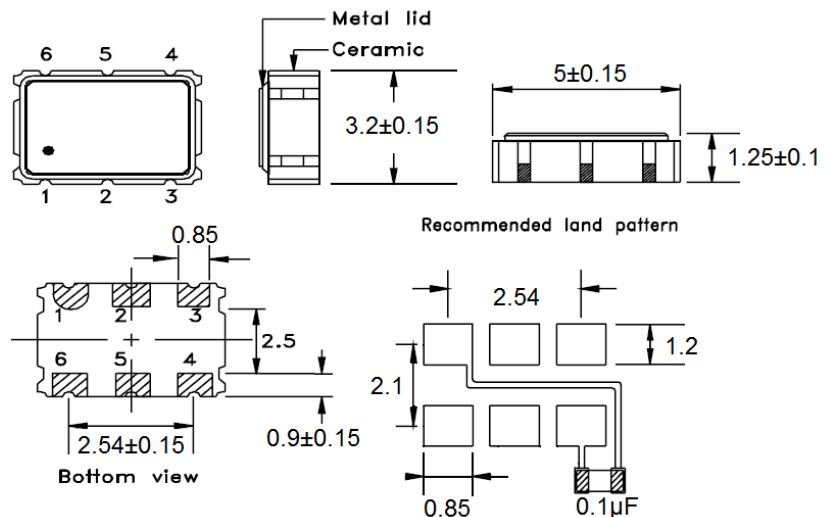


No	Item	Code	Description	Series Reference (options)
(1)	Meritek Series	MO5	Oscillator Unit	Ceramic SMD Crystal Oscillator 5.0x3.2mm 6 Pads
(2)	Logic	L	L: LVDS	L: LVDS
(3)	Supply Voltage	33	33: 3.3V	25: 2.5V
(4)	Frequency Stability	J	J: $\pm 50$ ppm	F: $\pm 20$ ppm, G: $\pm 25$ ppm, H: $\pm 30$ ppm (see options)
(5)	Operating Temp.	C	C: $-20\sim+70^{\circ}\text{C}$	A: $-10\sim+60^{\circ}\text{C}$ , B: $0\sim+70^{\circ}\text{C}$ , I: $-40\sim+85^{\circ}\text{C}$ (see options)
(6)	Frequency	100M0	100M0: 100.000MHz	80M0 ~ 320M0 (K and M denotes decimal point)
(7)	Pin 1	Blank	Blank: Tri-State on Pin 1, No connection on Pin 2	N: No connection on Pin 1, Tri-State on Pin 2

## DIMENSIONS AND RECOMMENDED PATTERN

Pin	Function
1	Tri-state / NC
2	NC / Tristate
3	GND
4	Q
5	Q Complimentary
6	V <sub>DD</sub>

(Unit:mm)



## AVAILABLE OPTIONS

Parameters	Part Number Options
Supply Voltage	25: 2.5V $\pm 10\%$ , 33: 3.3V $\pm 10\%$
Frequency Stability	F: $\pm 20$ ppm, G: $\pm 25$ ppm, H: $\pm 30$ ppm, J: $\pm 50$ ppm, K: $\pm 100$ ppm
Operating Temp.	A: $-10\sim+60^{\circ}\text{C}$ , B: $0\sim+70^{\circ}\text{C}$ , C: $-20\sim+70^{\circ}\text{C}$ , K: $-30\sim+85^{\circ}\text{C}$ , I: $-40\sim+85^{\circ}\text{C}$ , R: $-40\sim+105^{\circ}\text{C}$

Note: Custom options available. Contact Meritek for more information.

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## ELECTRICAL CHARACTERISTICS

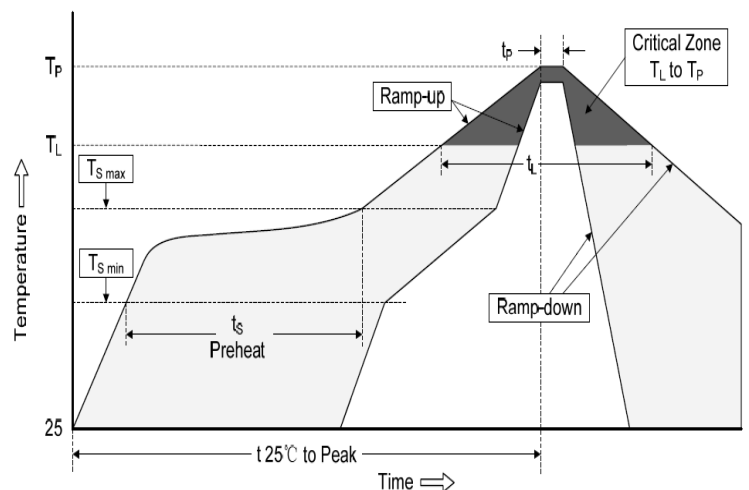
Parameters		Characteristic
Frequency Range		80.000 ~ 320.000 MHz
Logic		LVDS
Supply Voltage		3.3V ±10% (see options)
Frequency Stability		±50 ppm (see options)
Operating Temperature		-20 ~ +70°C (see options)
Storage Temperature		-55 ~ +125°C
Duty Cycle		50±5%
Aging @25°C (first year)		±3 ppm
Output Load		15pF max.
Output Level (LVDS)	High (Logic 1)	1.6V max.
	Low (Logic 0)	0.9V min.
Output Load (LVDS)		100 Ω
Supply Current		65mA max. (See Table 1)
Start Up Time		3mSec
Rise/ Fall Time (Tr/Tf)	80.00 MHz ~ 320.00 KHz	1nSec max.
Tri-State (Input Pin 1)	Enable High or Float	0.7 Vdd min.
	Disable Low or GND	0.3 Vdd max.
Differential Output Voltage		247 ~ 454mV (330mV Typ.)
Differential Output Error		50mV max.
Offset Voltage		1.125 ~ 1.375V (1.25V Typ.)
Offset Error		50mV max.
RMS Phase Jitter (12Khz~20MHz)	80.00 MHz ~ 124.99 MHz	0.9pSec max.
	125.00 MHz ~ 149.99 MHz	0.7pSec max.
	150.00 MHz ~ 199.99 MHz	0.5pSec max.
	≥200.00MHz	0.3pSec max.
Phase Noise	100 Hz	-70 dBc/Hz
	1 KHz	-100 dBc/Hz
	10 KHz	-125 dBc/Hz

**TABLE 1: SUPPLY CURRENT (mA max.)**

Frequency	3.3V	2.5V
80.00 MHz ~ 159.99 MHz	50	50
160.00 MHz ~ 249.99 MHz	50	50
250.00 MHz ~ 320.00 MHz	65	65

## RECOMMENDED SOLDERING PROFILES

Reflow Condition		
Pre Heat	Temp. Min $T_{s(min)}$	150°C
	Temp. Max $T_{s(max)}$	180°C
	Time (min. to max.) ( $t_s$ )	60~120 seconds
Average ramp up rate ( $T_L$ ) to peak		1°C/second max.
$T_{s(max)}$ to $T_L$ (Ramp-up rate)		3°C/second max.
Reflow	Temp. ( $T_L$ )	230°C
	Time (min. to max.) ( $t_L$ )	30~40 seconds
Peak Temperature ( $T_P$ )		260°C
Time within 5°C of actual peak Temperature ( $t_p$ )		10 seconds max.
Ramp-down Rate		6°C/second



\*Specifications subject to change without notice.