FO3HK

(Former FK315, FK345, FK335 Series)

3.2mm x 2.5mm

HCMOS Oscillator

Features

- HCMOS Output
- Stabilities to ±20 PPM
- Temperature Ranges as wide as -20°C to +70°C
- Supply Voltages: 1.8V; 2.5V; 3.3V

1.8V ELECTRICAL CHARACTERISTICS	
PARAMETERS	**MAX (Unless otherwise noted)**
Frequency (F_O)	32.768 kHz
Storage Temperature Range (T_{STG})	-55°C ~ +125°C
Supply Voltage (V_{DD})	1.8V±10%
Input Current (I_{DD})	120 µA
Standby Current	10 µA
Output Symmetry (50% V_{DD})	45 % ~ 55 %
Rise/Fall Time (10%/90% V_{DD} Levels) (T_R/T_F)	50 nS
Output Voltage (V_{OL}) (V_{OH})	10 % V_{DD} 90 % V_{DD} Min
Output Load (HCMOS)	15 pF
Start-up Time (T_S)	2 mS
Output Disable Time [1]	1 µS
Output Enable Time [1]	2 mS

ENABLE / DISABLE FUNCTION	
Pin[1]	Output (pin 3)
OPEN [1]	Active
'1' Level $V_{IH} \geq 70\%V_{DD}$	Active
'0' Level $V_{IL} \leq 30\%V_{DD}$	High Z

Frequency Stability	Operating Temperature (°C)
±50PPM[2]	-20 ~ +70
±50PPM[2]	-40 ~ +85
±25PPM[2]	-20 ~ +70
±25PPM[3]	-40 ~ +70
±20PPM[3]	-10 ~ +60

[1] An internal pull-up resistor from pin 1 to pin 4 allows active output if pin 1 is left open

[2] Inclusive of 25°C tolerance, operating temperature range, input voltage change, load change, Vibration, reflow, and one-year aging, shock, and vibration.

[3] Inclusive of 25°C tolerance and operating temperature range.

Features

- HCMOS Output
- Stabilities to ±20 PPM
- Temperature Ranges as wide as -40°C to +85°C
- Supply Voltages: 1.8V; 2.5V; 3.3V

2.5V ELECTRICAL CHARACTERISTICS	
PARAMETERS	**MAX (Unless otherwise noted)**
Frequency (F_O)	32.768 KHz
Storage Temperature Range (T_{STG})	-55°C ~ +125°C
Supply Voltage (V_{DD})	2.5V±10%
Input Current (I_{DD})	126 µA
Standby Current	10 µA
Output Symmetry (50% V_{DD})	45 % ~ 55 %
Rise/Fall Time (10%/90% V_{DD} Levels) (T_R/T_F)	50 nS
Output Voltage (V_{OL}) (V_{OH})	90 % V_{DD} 10 % V_{DD} Min
Output Load (HCMOS)	15 pF
Start-up Time (T_S)	2 mS
Output Disable Time [1]	1 µS
Output Enable Time [1]	2 mS

ENABLE / DISABLE FUNCTION	
Pin[1]	Output (pin 3)
OPEN [1]	Active
'1' Level $V_{IH} \geq 70\%V_{DD}$	Active
'0' Level $V_{IL} \leq 30\%V_{DD}$	High Z

Frequency Stability	Operating Temperature (°C)
±50PPM[2]	-20 ~ +70
±50PPM[2]	-40 ~ +85
±25PPM[2]	-20 ~ +70
±25PPM[3]	-40 ~ +70
±20PPM[3]	-10 ~ +60

[1] An internal pull-up resistor from pin 1 to pin 4 allows active output if pin 1 is left open

[2] Inclusive of 25°C tolerance, operating temperature range, input voltage change, load change, Reflow, one-year aging, shock, and vibration.

[3] Inclusive of 25°C tolerance and operating temperature range.

Features

- HCMOS Output
- Stabilities to ±20 PPM
- Temperature Ranges as wide as -40°C to +85°C
- Supply Voltages: 1.8V; 2.5V; 3.3V

3.3V ELECTRICAL CHARACTERISTICS	
PARAMETERS	**MAX (Unless otherwise noted)**
Frequency (F_O)	32.768 KHz
Storage Temperature Range (T_{STG})	-55°C ~ +125°C
Supply Voltage (V_{DD})	3.3V±10%
Input Current (I_{DD})	130 µA
Standby Current	10 µA
Output Symmetry (50% V_{DD})	45 % ~ 55 %
Rise/Fall Time (10%/90% V_{DD} Levels) (T_R/T_F)	50 nS
Output Voltage (V_{OL}) (V_{OH})	10 % V_{DD} 90 % V_{DD} Min
Output Load (HCMOS)	15 pF
Start-up Time (T_S)	2 mS
Output Disable Time [1]	1 µS
Output Enable Time [1]	2 mS

ENABLE / DISABLE FUNCTION	
Pin[1]	Output (pin 3)
OPEN [1]	Active
'1' Level $V_{IH} \geq 70\%V_{DD}$	Active
'0' Level $V_{IL} \leq 30\%V_{DD}$	High Z

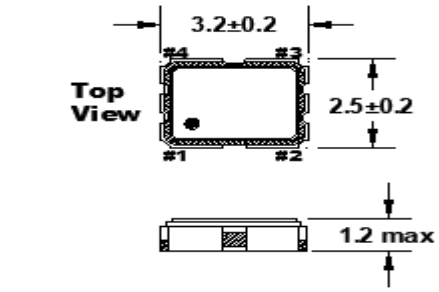
Frequency Stability	Operating Temperature (°C)
±50PPM[2]	-20 ~ +70
±50PPM[2]	-40 ~ +85
±25PPM[2]	-20 ~ +70
±25PPM[3]	-40 ~ +70
±20PPM[3]	-10 ~ +60

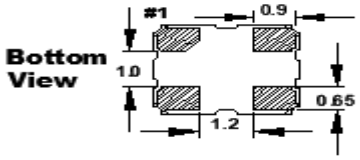
[1] An internal pull-up resistor from pin 1 to pin 4 allows active output if pin 1 is left open

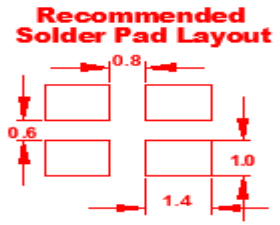
[2] Inclusive of 25°C tolerance, operating temperature range, input voltage change, load change, Reflow, one-year aging, shock, and vibration.

[3] Inclusive of 25°C tolerance, operating temperature range.

DIMENSIONS / MECHANICAL SPECIFICATIONS







Dimensions are in millimeters

Pin Connections

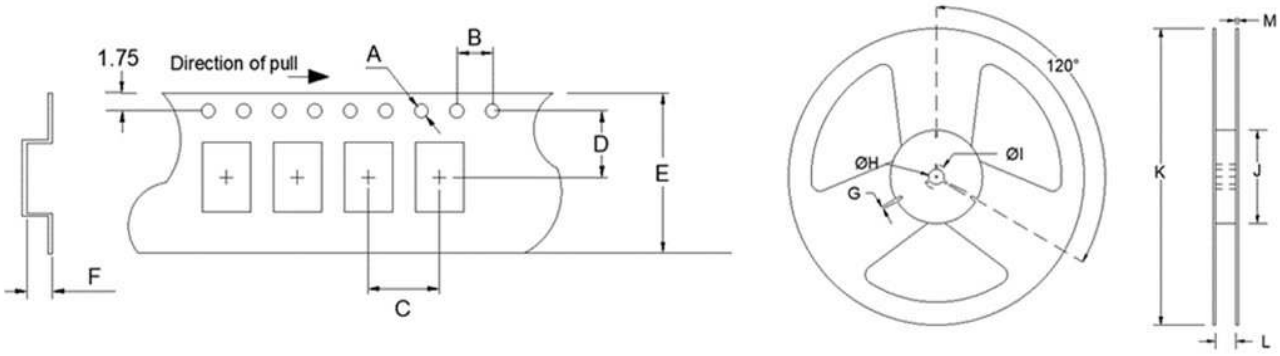
#1 E/D	#3 Output
#2 GND	#4 VDD

Note:
A 0.01µF capacitor should be placed between VDD (Pin 4) and GND (Pin2) to minimize power supply line noise.
Dimensional drawing is for reference to critical specifications defined by size measurements.
Certain non-critical visual attributes, such as side

STANDARD SPECIFICATIONS

PARAMETERS	MAX (Unless otherwise noted)
Maximum Soldering Temp / Time	260°C / 10 Seconds x 2
Moisture Sensitivity Level (MSL)	1
Termination Finish	Au (0.3~1µm) over Ni (1.27~8.89µm)
Seal Method	Seam
Lead (Pb) Free	Yes
ROHS/REACH Compliant	Yes

TAPE SPECIFICATIONS (mm)							REEL SPECIFICATIONS (mm)						
A	B	C	D	E	F	REEL QTY	G	H	I	J	K	L	M
ø1.5	4.0	4.0	3.5	8.0	1.4	-T1 = 1,000 -T2 = 2,000 **-T3 = 3,000**	2.5	Ø13	Ø22	Ø60	Ø178	8.0	1.2



Available Options & Part Identification for HCMOS Oscillator O3HK Sample PN: **FO3HKCBM0.032768-T3**						
F	**O3HK**	**C**	**B**	**M**	**0.032768**	**-T3**
Fox	**Model Number**	**Voltage** **C = 3.3V±10%** V = 2.5V to 10% W = 1.8V to 10%	**Stability** **B = ±50 PPM** D = ±25 PPM E = ±20 PPM	**Operating Temperature** D = -10 to +60°C F = -20 to +70°C **M = -40 to +85°C**	**Frequency (MHz)**	**Values Added Options** Blank = Bulk T1 = 1,000 pcs T2 = 2,000 pcs **T3 = 3,000 pcs**

Reliability Test Conditions
Please contact Abracon Quality Assurance department