

# TT5000LF

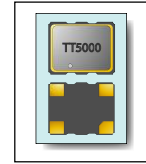
## Crystal Oscillator



**FEATURES:**

**32.768 kHz**  
**Ceramic Package**

**Low Current Draw**  
**3.28 x 2.58 x 1.3 mm**



Parameter	Unit	Min.	Max.
Nominal Frequency	<b>kHz</b>	32.768	
Operating Temperature Range	<b>°C</b>	-40	+85
Storage Temperature Range	<b>°C</b>	-55	+85
Frequency Tolerance at 25°C	<b>ppm</b>	-	±1.5
Frequency Stability			
vs. Temperature Range	<b>ppm</b>	-	±5.0
vs. Load (±10%) change	<b>ppm</b>	-	±0.2
vs. Supply Voltage (±5%) change	<b>ppm</b>	-	±1.0
Aging (per year)	<b>ppm</b>	-	±3.0
Voltage	<b>V</b>	1.8, 2.5, 3.0, 3.3, 5.0 ±5%	
Voltage Variation	<b>V</b>	-	0.25
Current Consumption	<b>uA</b>	2.05 typical for 5 V	
Output Waveform		CMOS	
Output Load	<b>pF</b>	15 typical	
“0” Level		0.4 V max; I <sub>OL</sub> = 0.1 mA	
“1” Level		0.4 V min; I <sub>OH</sub> = 0.1 mA	
Duty Cycle	<b>%</b>	40/60 typical	
Timing error over time			
per day	<b>sec/day</b>	-	±0.432
per month	<b>sec/month</b>	-	±12.96
per year	<b>min/year</b>	-	±2.628
Rise and Fall Time	<b>nSec</b>	-	100
Reflow	<b>ppm</b>	-	±1.0
Start-up Time @ 25°C	<b>mSec</b>	-	1
Start-up Time over Temperature Range	<b>mSec</b>	-	3
Tristate			
Enable		80% V <sub>DD</sub>	-
Disable		-	20% V <sub>DD</sub>

**TT5000LF Package**

Measurements: Inches (mm)  
 All tolerances: ±0.008 (±0.2)

IAD	Function	IAD	Function
1	Output Enable	2	GND
3	Output	4	V <sub>DD</sub>

Option 1: 0.035 (0.9)  
 Option 2: 0.046 (1.17)  
 Option 3: 0.051 (1.3)

**Environmental**

Terminal Material	W
Terminal Plating	Ni-Au
REACH Compliant	Yes
RoHS Compliant	Yes
RoHS Exemptions	No
Re-flow Temp. Max.	260°C
MSL	1

[Click To Quote](#)

**Example Part Number: TT5000LF-A-18-48-32M768**

TT5000LF -   -   -   -  

1
2
3
4

<b>Stability</b>	<b>Voltage</b>	<b>Temp. Range</b>	<b>Frequency</b>
A = ±5.0	50= 5.0 V 33= 3.3 V 30= 3.0V 25= 2.5V 18= 1.8V	48= -40 to 85°C	Frequency in kHz