

TX-D Type 32.768KHz

3.2 x 2.5 mm SMD CMOS

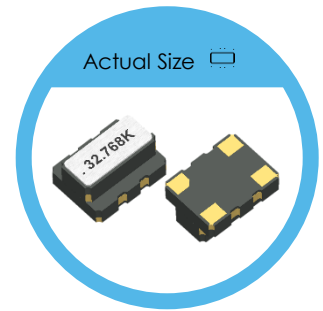
Temperature Compensated Crystal Oscillator

FEATURES

- Compact Ceramic SMD Package: 3.2 x 2.5 x 1.36 mm
- Multiple Power Options: 3.3V, 2.5V, 1.8V
- CMOS Clock Output
- Operating Temperature: -40°C to 105°C
- Low Current Consumption
- Tight Symmetry Range: 40-60%

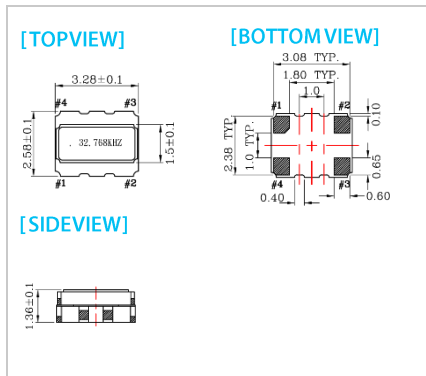
TYPICAL APPLICATION

- Real-Time Clocks, Mobile Phones
- Digital Cameras, Set-Top Boxes, HDTVs
- Car Navigation Systems

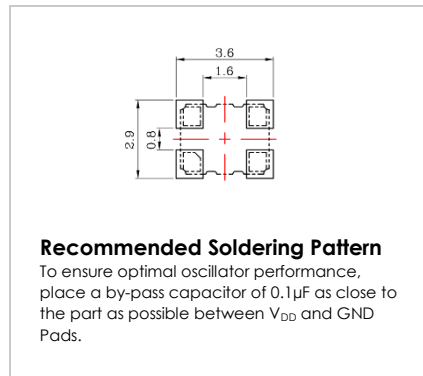


RoHS Compliant

DIMENSION (mm)



SOLDER PAD LAYOUT (mm)



PIN FUNCTION (mm)

PIN#	FUNCTION
1	Output Enable
2	Ground
3	Frequency Out
4	Supply Voltage

ELECTRICAL SPECIFICATION

Parameter			CMOS						Unit	Test Condition
			3.3V		2.5V		1.8V			
			Min.	Max.	Min.	Max.	Min.	Max.		
Supply Voltage Variation (V _{DD})			3.135	3.465	2.375	2.625	1.71	1.89	V	
Standard Frequency			32.768						KHz	
Initial Frequency Tolerance			-2.5	+2.5	-2.5	+2.5	-2.5	+2.5	ppm	
Supply Current @ No load			2		2		2		μA	
Standby Current @ No load			1.5		1.5		2		μA	
Duty Cycle			40	60	40	60	45	55	%	
Output Level	CMOS	Output High	2.9		2.1		1.4		V	
		Output Low		0.4		0.4		0.4	V	
Transition Time (10%-90%)	Rise Time			50		50		40	nSec	
	Fall Time			50		50		40	nSec	
Startup Time				0.5		0.5		0.5	Sec	
Tri-State Mode	Enable		2.64		2		1.44		V	
(Input to Pin 1)	Disable			0.66		0.5		0.36	V	
Aging (@25°C 1 st year)			-3	+3	-3	+3	-3	+3	ppm	
Operating Temp. Range			-40	+105	-40	+105	-40	+105	°C	
Storage Temp. Range			-40	+125	-40	+125	-40	+125	°C	

FREQ. STABILITY vs. TEMP. RANGE

Temp.(°C)	ppm	±5	±8
-40 ~ +85		○	○
-40 ~ +105		X	○

○: Available △: Conditional x: Not Available
 Inclusive of calibration @ 25°C ,operating temperature range,input Voltage variation,load variation,aging (1st year),shock,and vibration

Note: not all combination of options are available. Other specifications may be available upon request.



ES France - Département Composants & Modules
 127 rue de Buzenval BP 26 - 92380 Garches



Tél. 01 47 95 99 89
Fax. 01 47 01 16 22



e-mail : comp@es-france.com
Site Web : www.es-france.com

XO-0210