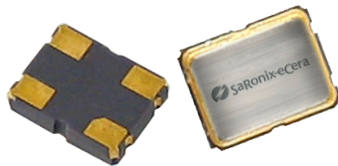


3.3V CMOS 32.768kHz

KKQ



3.2 x 2.5mm Ceramic SMD

Product Features

- AEC-Q200 Qualified
- 32.768 kHz
- 3.3V CMOS compatible logic levels
- Low power standby mode ($< 10\mu\text{A}$)
- Low power active mode ($< 0.3\text{mA typ.}$)
- Designed for standard reflow and washing techniques
- Pb-free and RoHS/Green compliant

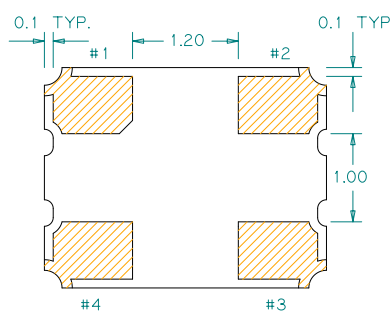
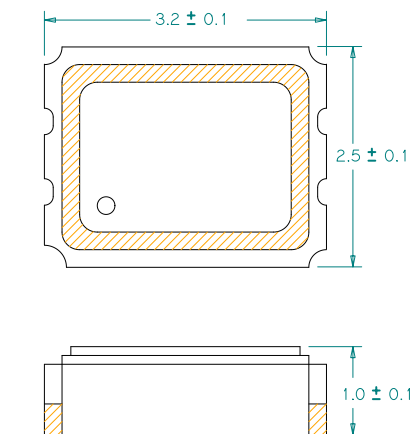
Product Description

The KKQ Series real time clock oscillator achieves superb stability over a broad range of operating conditions. The output clock signal is compatible with LVCMOS/LVTTL logic levels. The device, available on tape and reel, is contained in a 3.2 x 2.5mm surface-mount ceramic package.

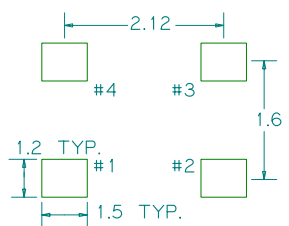
Applications

Real-Time Clock Oscillator

Package: (Dimensions are in mm)



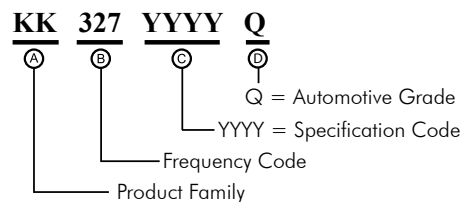
Recommended Land Pattern:



Pin Functions:

Pin	Function
1	OE Function
2	Ground
3	Clock Output
4	V _{DD}

Part Ordering Information:



Following the above format, SaRonix-eCera part numbers will be assigned upon confirmation of exact customer requirements.

Electrical Performance

Parameter	Min.	Typ.	Max.	Units	Notes
Output Frequency		32.768		kHz	
Supply Voltage	+2.97	+3.3	+3.63	V	
Supply Current, Output Enabled		0.3	0.5	mA	
Supply Current, Standby Mode			10	μA	
Frequency Stability			±20 to ±50	ppm	See Note 1 below
Operating Temperature Range	-40		+85	°C	AECQ Grade 3
Output Logic 0, V _{OL}			0.1 V _{DD}	V	
Output Logic 1, V _{OH}	0.9 V _{DD}			V	
Output Load			15	pF	See Note 2 below
Duty Cycle	45		55	%	measured 50% of V _{DD}
Rise and Fall Time			12	nsec	measured 20/80% of V _{DD}

Notes:

- As specified. Stability includes all combinations of operating temperature, load changes, rated input (supply) voltage changes, initial calibration tolerance (25°C), aging (1 year at 25°C average effective ambient temperature), shock and vibration.
- For specifications other than those listed, please contact sales.

Output Enable / Disable Function

Parameter	Min.	Typ.	Max.	Units	Notes
Input Voltage (pin 1), Output Enable	0.7 V _{DD}			V	or open
Input Voltage (pin 1), Output Disable (low power standby)			0.3 V _{DD}	V	Output is Hi-Z
Internal Pullup Resistance		470		kΩ	
Output Disable Delay			100	ns	
Output Enable Delay			10	ms	

Absolute Maximum Ratings

Parameter	Min.	Typ.	Max.	Units	Notes
Storage Temperature	-55		+125	°C	

For the latest product information visit: <http://www.pericom.com/products/timing/oscillators/KKQ+3.3V>

For test circuit go to: http://www.pericom.com/assets/sre/tc_cmos2.pdf

For soldering reflow profile and reliability test ratings go to: <http://www.pericom.com/pdf/sre/reflow.pdf>

For tape and reel information go to: http://www.pericom.com/pdf/sre/tr_3225_xo.pdf

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