

Actual Size = 3.2 x 2.5mm



Product Features

- 32.768 KHz
- 1.8V/2.5V/3.3V/CMOS compatible logic levels
- Pin-compatible with standard 3.2x2.5mm packages
- Designed for standard reflow and washing techniques
- Low power standby mode
- Pb-free and RoHS/Green compliant

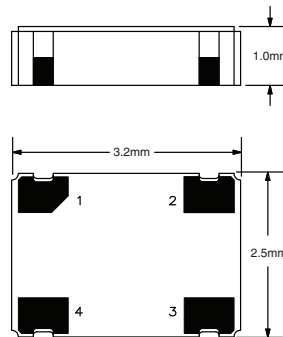
Product Description

The KK Series is a real time clock oscillator that 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 3.2x2.5mm surface-mount ceramic package.

Applications

- Real Time Clock Oscillator

Packaging Outline



Pin Functions

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

New Part Number Example

KK **327** **0001** A = Product Family
 B = Frequency Code
 (A) (B) (C) C = Specification Code

Note: After July 1, 2007, a Saronix - eCera part number following the above format will be assigned upon confirmation of exact customer requirements.

Electrical Performance

Parameter	Min.	Typ.	Max.	Units	Notes
Output frequency		32.768		kHz	As specified
Supply voltage		+3.3		V	1.8V, 2.5V, 3.3V Available
Supply current, output enabled			20	mA	3.3V
Supply current, standby mode			10	μA	Output Hi-Z
Frequency stability			±20 to ±50	ppM	See Note 1 below
Operating temperature	-10		+70	°C	As specified
Operating temperature (EXT)	-40		+85	°C	As specified
Output logic 0, VOL			10% V _{DD}	V	
Output logic 1, VOH	90% V _{DD}			V	
Output load	15 pF (max) or 10 LSTTL				
Duty cycle	45		55	%	measured 50%VDD
Rise and fall time			130	ns	measured 20/80% of waveform

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.

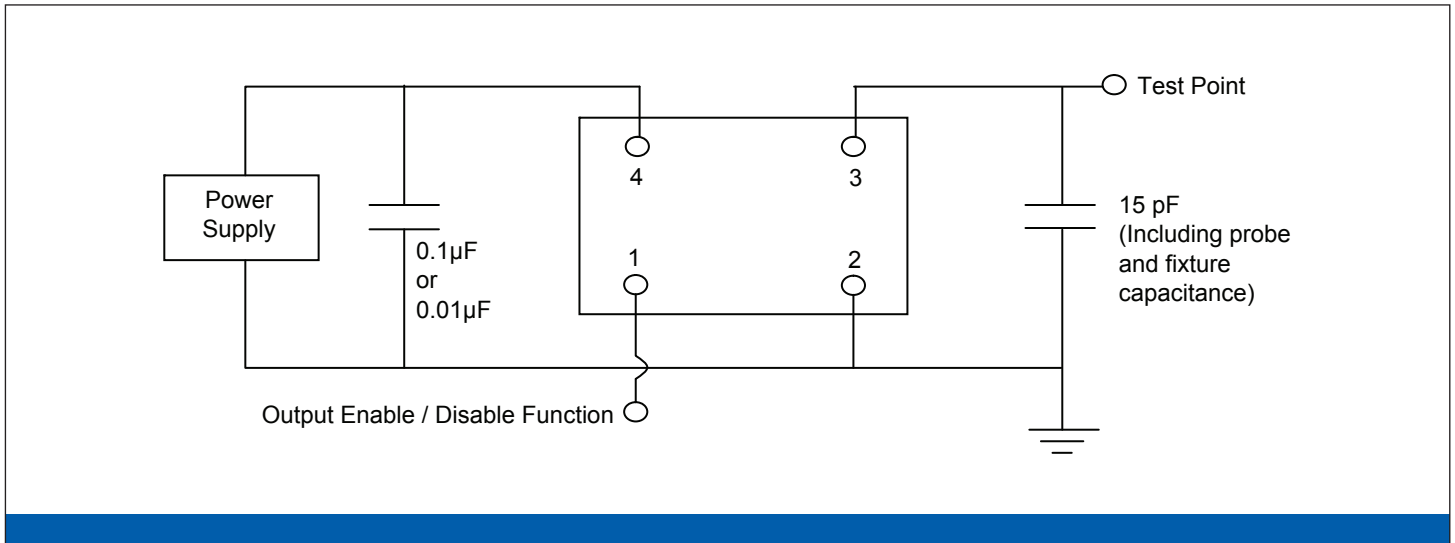
Output Enable / Disable Function

Parameter	Min.	Typ.	Max.	Units	Notes
Input Voltage (pin 1), Output Enable	0.7 V _{CC}			V	or open
Input voltage (pin 1), Output Disable (low power standby)			0.3 V _{CC}	V	Output is Hi-Z
Internal pullup resistance	50			kΩ	
Output disable delay			200	ns	
Output enable delay			10	ms	

Absolute Maximum Ratings

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

Test Circuit

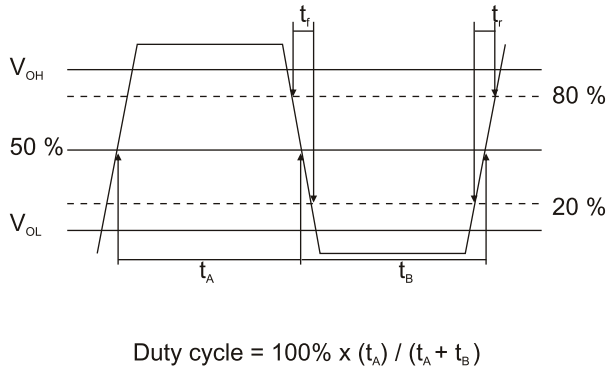


Reliability Test Ratings

This product is rated to meet the following test conditions:

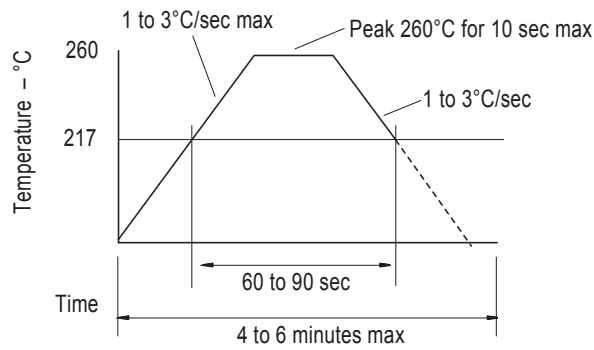
Type	Parameter	Test Condition
Mechanical	Shock	MIL-STD-883, Method 2002, Condition B
Mechanical	Solderability	JESD22-B102-D Method 2 (Preconditioning E)
Mechanical	Terminal strength	MIL-STD-883, Method 2004, Condition D
Mechanical	Gross leak	MIL-STD-883, Method 1014, Condition C
Mechanical	Fine leak	MIL-STD-883, Method 1014, Condition A2 ($R_1 = 2 \times 10^{-8}$ atm cc/s)
Mechanical	Solvent resistance	MIL-STD-202, Method 215
Environmental	Thermal shock	MIL-STD-883, Method 1011, Condition A
Environmental	Moisture resistance	MIL-STD-883, Method 1004
Environmental	Vibration	MIL-STD-883, Method 2007, Condition A
Environmental	Resistance to soldering heat	J-STD-020C Table 5-2 Pb-free devices (2 cycles max)

Output Waveform



Reflow Soldering Profile

As per IPC/JEDEC J-STD-020C



Mechanical Drawings

