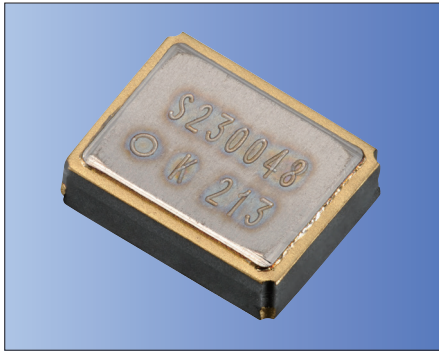




CMOS/ 3.0V Typ./ 3.2×2.5mm



AEC-Q200 RoHS Compliant

Features

- Miniature SMD type (3.2×2.5×1.0mm)
- 32.768kHz D-TCXO
- High frequency stability : $\pm 5.0 \times 10^{-6} / -40$ to $+85^\circ\text{C}$
- Low supply current : 1.5μA typ ($V_{DD}=3.0\text{V}$, Output at no load)
- Temperature compensated voltage Range : 2.0V to 5.5V
- Operating Temp. -40 to $+105^\circ\text{C}$ (option)

Applications

- High accuracy time references
- Microcontroller with built in RTC

How to Order

Frequency Tolerance (vs Temp.) : $\pm 3.8 \times 10^{-6} / -10^\circ\text{C}$ to 60°C
KT3225T 32768 D G R □ □ T xx
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧

Frequency Tolerance (vs Temp.) : $\pm 5.0 \times 10^{-6} / -40^\circ\text{C}$ to 85°C
KT3225T 32768 E A W □ □ T xx
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧

- ① Series
- ② Output Frequency
- ③ Frequency Stability
- ④ Lower Temperature
- ⑤ Upper Temperature

	③	④	⑤
DGR	$\pm 3.8 \times 10^{-6}$	-10°C	$+60^\circ\text{C}$
EAW	$\pm 5.0 \times 10^{-6}$	-40°C	$+85^\circ\text{C}$

⑥ Supply Voltage	⑦ Initial Frequency Tolerance
30 3.0V	T $\pm 3.0 \times 10^{-6}$
33 3.3V	
50 5.0V	

⑧ Individual Specification
 Packaging (Tape & Reel 3000 pcs./ reel)

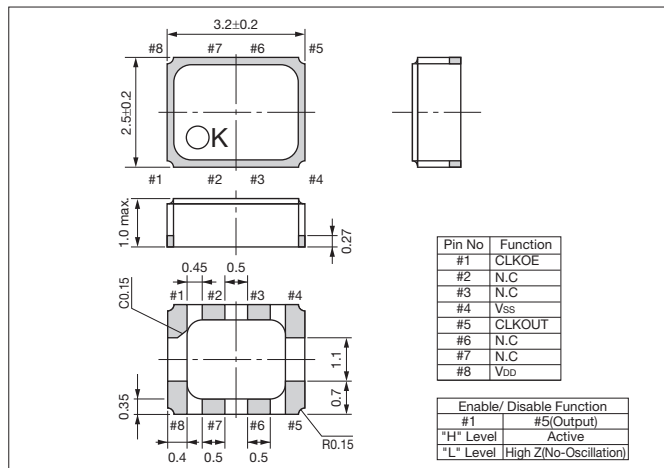
Specifications

Item	Symbol	Conditions	Specifications			Units
			Min.	Typ.	Max.	
Nominal Frequency	f_{nom}		—	32.768	—	kHz
Oscillation Output Voltage	V_{DD}		1.3	3.0	5.5	V
Temperature Compensated Voltage	V_{TEM}		2.0	3.0	5.5	V
Storage Temperature	T_{stg}		-40	$+25$	$+85$	$^\circ\text{C}$
Operating Temperature	T_{use}		-40	$+25$	$+85$	$^\circ\text{C}$
Initial Frequency Tolerance		$T_a=25 \pm 2^\circ\text{C}$	-3.0	—	$+3.0$	$\times 10^{-6}$
Frequency Stability vs Temp.	fo-Tc	E: $T_a=-40$ to $+85^\circ\text{C}$	-5.0	—	$+5.0$	$\times 10^{-6}$
Frequency Stability vs Supply Voltage	df/ fo	$V_{DD}=2.0$ to 5.5V , $T_a=25 \pm 2^\circ\text{C}$	-1.0	—	$+1.0$	$\times 10^{-6}/\text{V}$
Frequency Aging	f_{age}		-3.0	—	$+3.0$	$\times 10^{-6}$
Low Level Output Voltage	V_{OL}	$I_{OL}=+1.0\text{mA}$, $V_{DD}=3\text{V}$	0.0	—	0.8	V
High Level Output Voltage	V_{OH}	$I_{OH}=-1.0\text{mA}$, $V_{DD}=3\text{V}$	2.2	—	3.0	V
Low Level Input Voltage	V_{IL}	CLKOE pin	0.0	—	$0.2 \times V_{DD}$	V
High Level Input Voltage	V_{IH}	CLKOE pin	$0.8 \times V_{DD}$	—	5.5	V
DUTY Ratio	Duty	$CL=15\text{pF}$	40	—	60	%
Rise Time	T_r	$20\%V_{DD}$ $80\%V_{DD}$, $CL=15\text{pF}$, $V_{DD}=3\text{V}$	—	—	100	ns
Fall Time	T_f	$80\%V_{DD}$ $20\%V_{DD}$, $CL=15\text{pF}$, $V_{DD}=3\text{V}$	—	—	100	ns
Start-up Time	t_{str}	$T_a=25^\circ\text{C}$	—	—	1.0	sec
		$T_a=-40$ to 85°C	—	—	3.0	sec
Power Supply Current1	I_{cc1}	CLKOE=Vss, $V_{DD}=3\text{V}$	—	0.6	2.0	μA
Power Supply Current2	I_{cc2}	CLKOE= V_{DD} , $V_{DD}=3\text{V}$, Output at no load	—	1.5	4.0	μA
		CLKOE= V_{DD} , $V_{DD}=3\text{V}$, $CL=15\text{pF}$	—	2.7	5.5	μA
Output Load Condition	L_{CMOS}	CMOS Output	—	—	15.0	pF

* Please contact us for other specifications.

Dimensions

(Unit: mm)



Recommended Land Pattern

(Unit: mm)

