

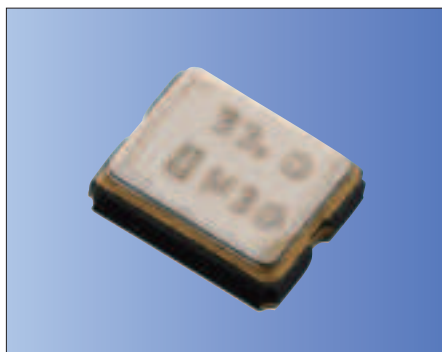


Clock Oscillators Surface Mount Type

KC2520M Series



CMOS/ 1.8V to 3.3V/ 2.5×2.0mm for Automotive



RoHS Compliant

Features

- Miniature ceramic package
2.5 (L) × 2.0 (W) × 0.7 (H) mm (Typ.)
- Highly reliable with seam welding
- CMOS output
- Supply voltage 1.8/ 2.5/ 3.3V
Wide operating voltage range 1.6 to 3.63V
- Low current consumption
- AEC-Q100/ 200 qualified

Table 1

Freq. Code	Tol. $\times 10^{-6}$	Operating Temperature Range (°C)	Note
F	± 100	-40 to +85	Please contact us for available frequencies.
G	± 50	-40 to +85	
6	± 50	-40 to +105	Standard specifications
X	± 100	-40 to +125	

How to Order

KC2520M 25.0000 C 1 ☐ E SH
① ② ③ ④ ⑤ ⑥ ⑦

- ① Series
- ② Output Frequency
- ③ Output Type (CMOS)
- ④ Supply Voltage (1.8V, 2.5V, 3.3V Compatible)
- ⑤ Frequency Tolerance (See Table 1)
- ⑥ Symmetry/ INH Function (45/ 55%, Stand-by)
- ⑦ Individual Specification (STD Specification is "SH")

Packaging (Tape & Reel 2000 pcs./ reel)

Specifications

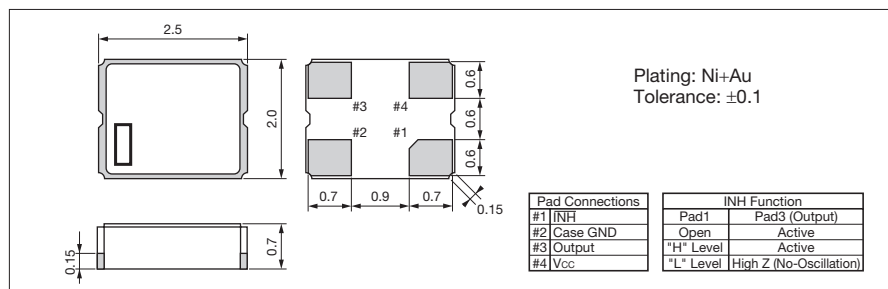
Item	Symbol	Conditions	Specifications		Units
			Min.	Max.	
Output Frequency Range	f_o		1.5	60	MHz
Frequency Tolerance	f_{tol}	Initial tolerance, Operating temperature range, Rated power supply voltage change, Aging (1 year @25°C), Shock and vibration	Op.Temp.: -40 to +85°C -40 to +125°C Op.Temp.: -40 to +85°C -40 to +105°C	-100 +100 -50 +50	$\times 10^{-6}$
Storage Temperature Range	T_{stg}		-55	+125	°C
Operating Temperature Range	T_{use}		-40	+125	°C
Max. Supply Voltage	—	$1.5 \leq f_o \leq 60\text{MHz}$	-0.6	+6.5	V
Supply Voltage	V_{CC}		+1.6	+3.63	V
Current Consumption (Maximum Loaded/ $1.6 \leq V_{CC} \leq 2.0\text{V}$)	I_{CC}	$1.5 \leq f_o \leq 24\text{MHz}$	—	2.5	mA
		$24 < f_o \leq 40\text{MHz}$	—	3.0	
		$40 < f_o \leq 60\text{MHz}$	—	4.5	
Current Consumption (Maximum Loaded/ $2.0 < V_{CC} \leq 2.8\text{V}$)		$1.5 \leq f_o \leq 24\text{MHz}$	—	3.0	
		$24 < f_o \leq 40\text{MHz}$	—	4.0	
		$40 < f_o \leq 60\text{MHz}$	—	5.0	
Current Consumption (Maximum Loaded/ $2.8 < V_{CC} \leq 3.63\text{V}$)		$1.5 \leq f_o \leq 24\text{MHz}$	—	3.5	
		$24 < f_o \leq 40\text{MHz}$	—	5.0	
		$40 < f_o \leq 60\text{MHz}$	—	6.5	
Stand-by Current	I_{std}		—	10	μA
Symmetry	SYM	@50% V_{CC}	45	55	%
Rise/ Fall Time (10% V_{CC} to 90% V_{CC} Maximum Loaded)	t_r / t_f	$1.6 \leq V_{CC} \leq 2.0\text{V}$ $2.0 < V_{CC} \leq 2.8\text{V}$ $2.8 < V_{CC} \leq 3.63\text{V}$	— — —	6.5 5.5 4.5	ns
Low Level Output Voltage	V_{OL}	$I_{OL} = 4\text{mA}$	—	10% V_{CC}	V
High Level Output Voltage	V_{OH}	$I_{OH} = -4\text{mA}$	90% V_{CC}	—	V
Output Load	L_{CMOS}	CMOS Output	—	15	pF
Low Level Input Voltage	V_{IL}		—	30% V_{CC}	V
High Level Input Voltage	V_{IH}		70% V_{CC}	—	V
Disable Time	t_{dis}		—	100	ns
Enable Time	t_{ena}		—	5	ms
Start-up Time	t_{str}	@Minimum operating voltage to be 0 sec.	—	10	ms
1 Sigma Jitter	JSigma	Measured with Wavecrest SIA-3000	—	8	ps
Peak to Peak Jitter	JPK-PK		—	80	ps

Note: All electrical characteristics are defined at the maximum load and operating temperature range.

Please contact us for inquiry about operating temperature range, available frequencies and other conditions.

Dimensions

(Unit: mm)



Recommended Land Pattern

(Unit: mm)

