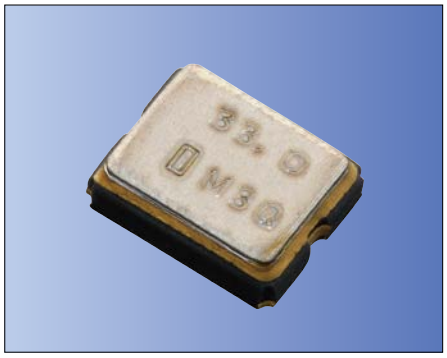
Clock Oscillators Surface Mount Type
KC2520M Series

KYOCERA

CMOS/ 1.8V ～ 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. Tol. Code	Freq. Tol. × 10^{-6}	Operating Temperature Range (°C)	Note
F	±100	−40 to +85	With only certain frequencies
G	± 50		
6	± 50	−40 to +105	
X	±100	−40 to +125	Standard specifications

How to Order

KC2520M 25.0000 C 1 X E 00
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 Customer Special Model Suffix
(STD Specification is "00")

Packaging (Tape & Reel 2000 pcs./ reel)

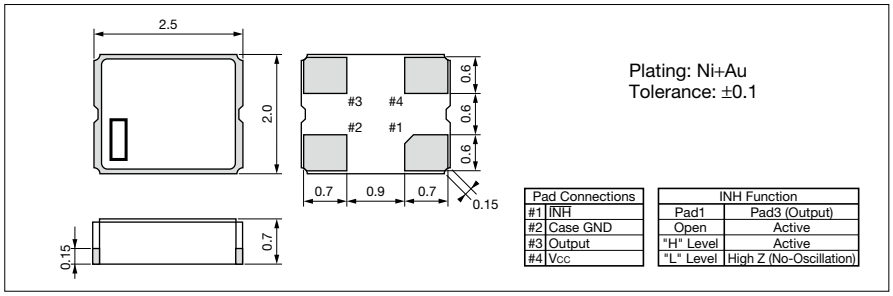
Specifications

Item	Symbol	Conditions		Specifications Min.	Specifications Max.	Units
Output Frequency Range	fo			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 +125°C	−100	+100	×10^{-6}
Storage Temperature Range	T_stg			−55	+125	°C
Operating Temperature Range	T_use			−40	+125	°C
Max. Supply Voltage	—	1.5≤fo≤60MHz		−0.6	+6.5	V
Supply Voltage	Vcc			+1.6	+3.63	V
Current Consumption (Maximum Loaded/ 1.6≤Vcc≤2.0V)	Icc	1.5≤fo≤24MHz		—	2.5	mA
		24<fo≤40MHz		—	3.0	
		40<fo≤60MHz		—	4.5	
Current Consumption (Maximum Loaded/ 2.0<Vcc≤2.8V)		1.5≤fo≤24MHz		—	3.0	
		24<fo≤40MHz		—	4.0	
		40<fo≤60MHz		—	5.0	
Current Consumption (Maximum Loaded/ 2.8<Vcc≤3.63V)		1.5≤fo≤24MHz		—	3.5	
		24<fo≤40MHz		—	5.0	
		40<fo≤60MHz		—	6.5	
Stand-by Current	I_std			—	10	µA
Symmetry	SYM	@50%Vcc		45	55	%
Rise/ Fall Time (10% Vcc to 90% Vcc Maximum Loaded)	tr/ tf	1.6≤Vcc≤2.0V		—	6.5	ns
		2.0<Vcc≤2.8V		—	5.5	
		2.8<Vcc≤3.63V		—	4.5	
Low Level Output Voltage	VOL	IOL = 4mA		—	10%Vcc	V
High Level Output Voltage	VOH	IOH = −4mA		90%Vcc	—	V
Output Load	L_CMOS	CMOS Output		—	15	pF
Low Level Input Voltage	VIL			—	30%Vcc	V
High Level Input Voltage	VIH			70%Vcc	—	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)



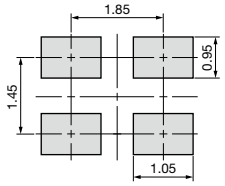
Plating: Ni+Au
Tolerance: ±0.1

Pad Connections	
#1	INH
#2	Case GND
#3	Output
#4	Vcc

INH Function	
Pad1	Pad3 (Output)
Open	Active
"H" Level	Active
"L" Level	High Z (No-Oscillation)

Recommended Land Pattern

(Unit: mm)



Note: A capacitor of value 0.01µF between Vcc and GND is recommended.