Clock Oscillators (SMD)

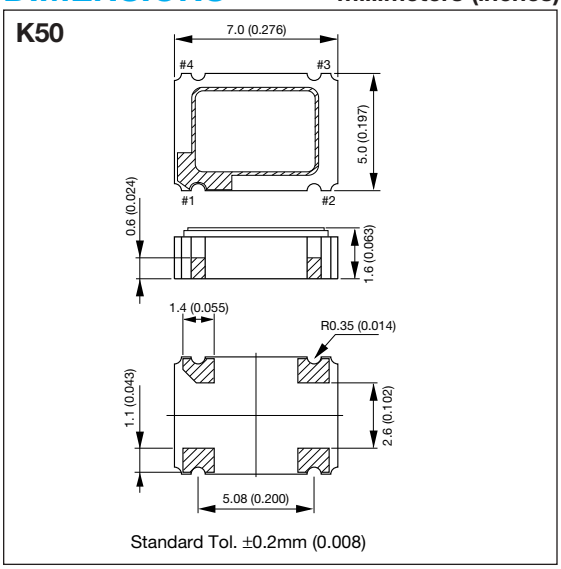
K50-HC Series (5.0V)

K50 SERIES



DIMENSIONS

millimeters (inches)



Standard Tol. ±0.2mm (0.008)

PIN CONNECTION

Pin #	Function
1	CONTROL
2	CASE GND
3	OUTPUT
4	+Vcc

ENABLE/DISABLE

Pin #1	Pin #3
"H" or Open	Oscillation
"L"	High Impedance

FEATURES

- High reliable SMD ceramic package
- Frequency range = 8MHz to 68MHz
- Frequency tolerance = ±100ppm, ±50ppm
- Tristate output inhibit

APPLICATIONS

- Routers
- Switches
- Servers

HOW TO ORDER

K50 - HC 1 C S E 40.0000M R

Series

Tolerance
1 = ±100ppm
0 = ±50ppm

Packaging
R = Tape and reel, 1,000 pcs/reel

Frequency (MHz)

8.0000	27.0000	49.1520
14.31818	29.4989	50.0000
16.0000	30.0000	60.0000
20.0000	32.0000	64.0000
24.0000	33.8688	66.6667
24.5760	40.0000	—
25.0000	48.0000	—

Tristate Output
E = with function (STD)

Duty Ratio
S = 45% to 55% (STD)

Output
C = CMOS/Compatibility

SPECIFICATIONS

Items	Code	Rating	Unit	Remarks
Output Frequency	F_{OUT}	8 to 68	MHz	—
Frequency Tolerance	ΔF/F	±100, ±50	ppm	Over all conditions
Aging	ΔF/F	±5	ppm/y	@ 25°C
Operating Temperature	T_{OPR}	-10 to 70	°C	—
Storage Temperature	T_{STR}	-55 to 125	°C	—
Supply Voltage	V_{CC}	5±0.5	V	—
Supply Current	I_{CC}	50 max.	mA	Loaded @ 68MHz
Disable Current	I_{DE}	30 max.	mA	—
Duty Ratio	SYM	45 to 55	%	0.5V_{CC} DC Level
Output 0 Level	V_{OL}	0.1 V_{CC} max.	V	I_{OL} = 16mA
Output 1 Level	V_{OH}	0.9 V_{CC} min.	V	I_{OH} = -16mA
Rise/Fall Time	T_R, T_F	10 max.	nsec	0.1V_{CC}-0.9V_{CC}
Load Capacitance	C_L	50 max.	pF	F>50MHz C_L=15pF (max.)
Enable/Disable Time	—	100 max.	nsec	—
Input Voltage Low	V_{IL}	0.8 max.	V	—
Input Voltage High	V_{IH}	2.2 min.	V	—
Start-up Time	ST	10 max.	mS	Minimum Operating Voltage to be 0sec

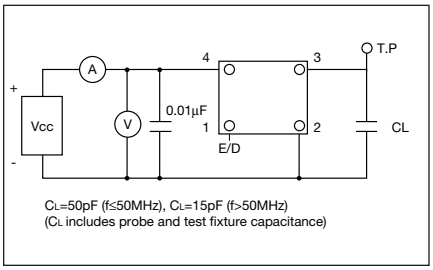
*Please contact us for inquiries about Extend Operating Temperature Range (-40 to +85°C), available frequencies, other condition.

Clock Oscillators

K30/K50 Series

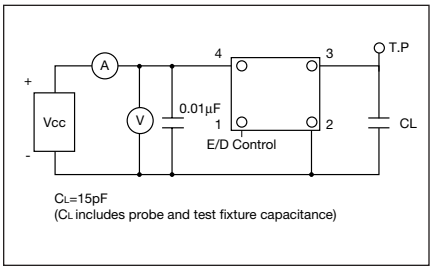
Kyocera has a wide range of clock oscillators with frequency and package size to match the various customer requirements.

K50/K30 HC SERIES TEST CIRCUIT



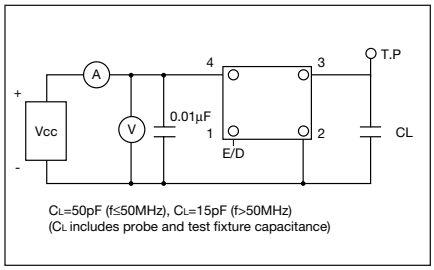
C_L=50pF (f≤50MHz), C_L=15pF (f>50MHz)
(C_L includes probe and test fixture capacitance)

K50/K30 3C SERIES TEST CIRCUIT



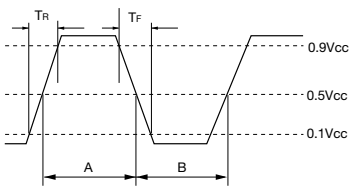
C_L=15pF
(C_L includes probe and test fixture capacitance)

K50H 3C SERIES TEST CIRCUIT



C_L=50pF (f≤50MHz), C_L=15pF (f>50MHz)
(C_L includes probe and test fixture capacitance)

OUTPUT WAVE FORM FOR ALL SERIES



$$\text{Duty Ratio} = \frac{A}{A+B} \times 100$$

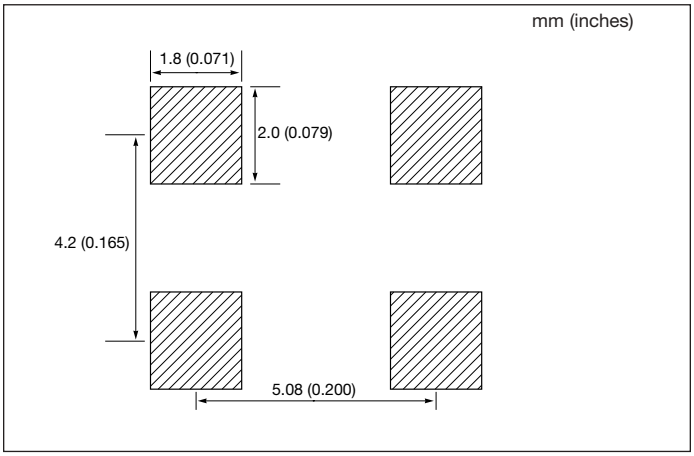
SPECIFICATIONS

Type	Frequency Range (MHz)	Load	Drive Level	Duty Ratio	Features
K50-HC	8 to 68	C_L=50pF (max.) (f_O≤50MHz)	CMOS V_{OH}0.9Vcc V_{OL}0.1Vcc	45/55% (0.5Vcc)	1. IR Reflowable 2. Mini-SMD 3. Tristate Output, Enable/Disable Function F>50MHz C_L=15pF
K50-3C	8 to 80	C_L=15pF (max.)	CMOS V_{OH}0.9Vcc V_{OL}0.1Vcc	40/60% (0.5Vcc)	1. 3.3V Available 2. IR Reflowable 3. Mini-SMD 4. Tristate Output, Enable/Disable Function
K50H-3C	50 to 160	C_L=15pF (max.)	CMOS V_{OH}0.9Vcc V_{OL}0.1Vcc	45/55% (0.5Vcc)	1. 3.3V Available 2. IR Reflowable 3. Mini-SMD 4. Tristate Output, Enable/Disable Function
K30-HC	8 to 50	C_L=50pF (max.) (f_O≤50MHz)	CMOS V_{OH}0.9Vcc V_{OL}0.1Vcc	45/55% (0.5Vcc)	1. IR Reflowable 2. Mini-SMD 3. Tristate Output, Enable/Disable Function
K30-3C	8 to 67	C_L=15pF (max.)	CMOS V_{OH}0.9Vcc V_{OL}0.1Vcc	40/60% (0.5Vcc)	1. 3.3V Available 2. IR Reflowable 3. Mini-SMD 4. Tristate Output, Enable/Disable Function

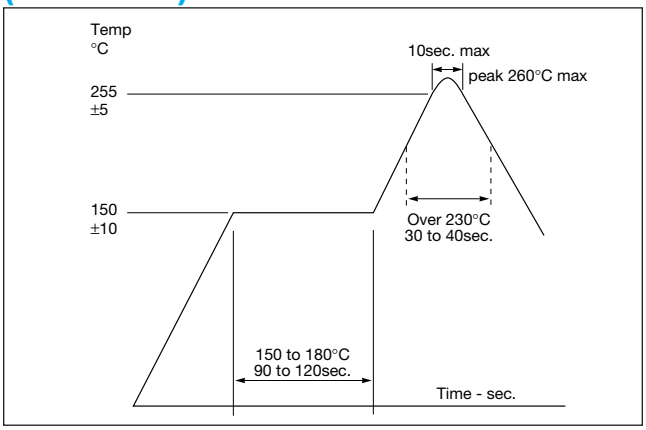
Clock Oscillators (SMD)

K50/K50H Series

RECOMMENDED LAND PATTERN



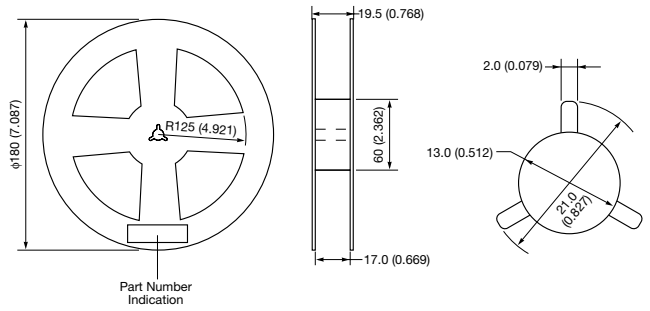
RECOMMENDED REFLOW PROFILE (Lead Free)



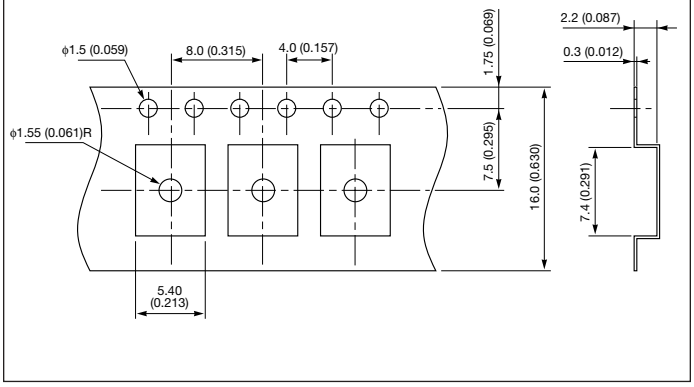
PACKAGING

millimeters (inches)

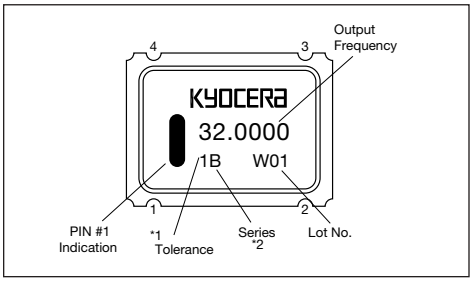
Reel



Carrier Tape



MARKING SPECIFICATIONS



*1 1 = ±100ppm
0 = ± 50ppm
S = ± 30ppm
U = ± 25ppm

*2 B = K50-HC
L = K50-3C-E
M = K50-3C-SE
D = K50-CL
H = K50H-3C-SE

PACKAGING

1,000pcs/Reel