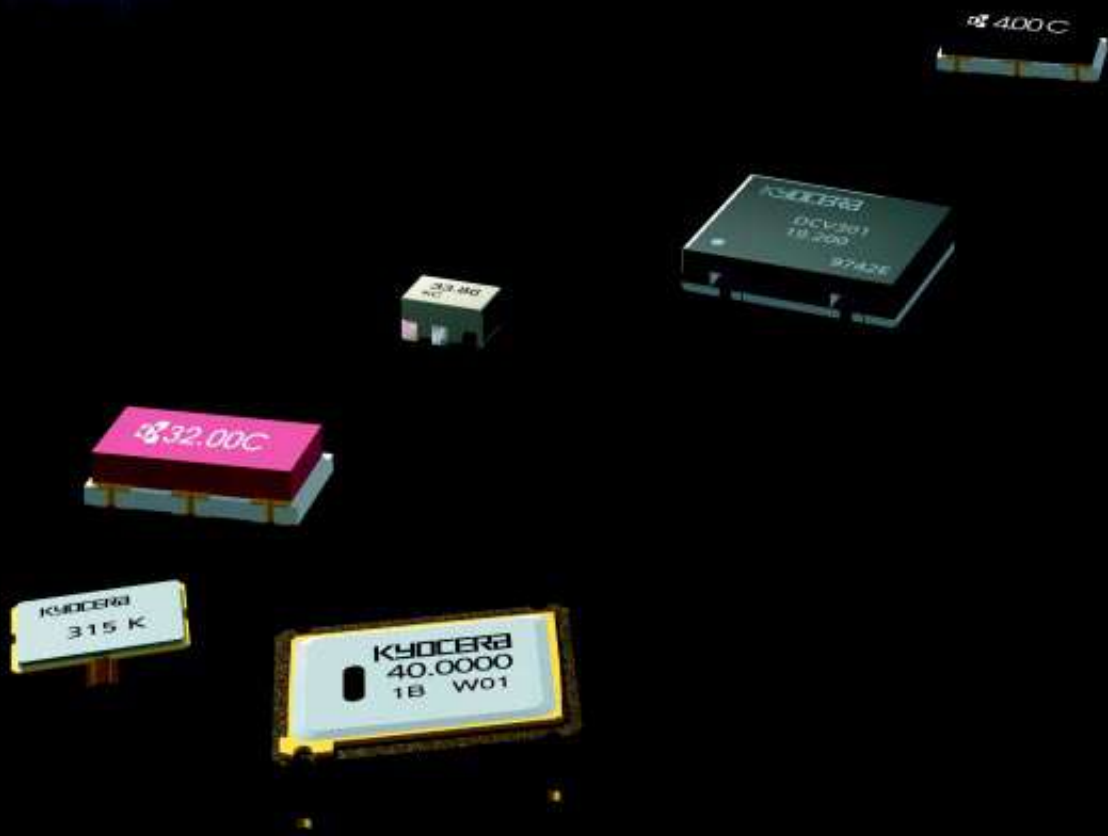


AVIX



**KYOCERA
Timing Devices**

Resonators

Crystals

Oscillators

Table of Contents

CERAMIC RESONATORS

General Description	2-7
KBR -Y Series - Surface Mountable — f_0 : 380 to 1050 kHz	8-9
KBR -B, -BK, -F Series — f_0 : 190 to 1050 kHz	10-11
KBR Special Series	12
PBRC -A Series - Surface Mountable — f_0 : 2.00 to 8.00 MHz	13
PBRC -B/D Series - Surface Mountable — f_0 : 2.00 to 36.00 MHz	14
Tape & Reel Packaging, PBRC-A/B/D	15
SSR-B Series	16
KBR -M, -MS, -MSA, -MSB Series — f_0 : 2.00 to 13.00 MHz	17
KBR -MY, MSA Series — f_0 : 13.01 to 36.00 MHz	18
KBR -MKC, -MKD, -MKS Series — f_0 : 3.45 to 8.00 MHz and 16.00 to 36.00 MHz	19
Tape & Reel Packaging, MHz Ceramic Resonators	20

SURFACE ACOUSTIC WAVE RESONATORS

General Description	21
PAR Series	22
KAR -CS, -CT, -CB, -CD, -CK Series — f_0 : 46 to 315 MHz	23-24
KAR Series Data	25

QUARTZ CRYSTALS

KSX Series	26
KT Series	27

CLOCK OSCILLATORS

General Description	28-30
K50 Series — f_0 : 8 to 68 MHz	31-34
KT11 Series	35
KT12 Series	36
KT14 Series	37
VCO Series	38-42
KXO-01 Series — f_0 : 8.0 to 50 MHz	43-44
KXO-HC/KHO-HC Series — f_0 : 1.0 to 80 MHz	45-46
386 Series	47-48

MHz Band Quartz Crystals

SMD Type - KSX Series

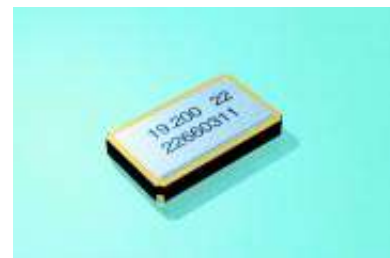
FEATURES

- 1) Reference frequency for telecommunicaton system
- 2) High reliability ceramic package
- 3) 1000 pieces per reel
- 4) Sold in increments of 2000 pieces

HOW TO ORDER

KSX - 36 - 192M - ****

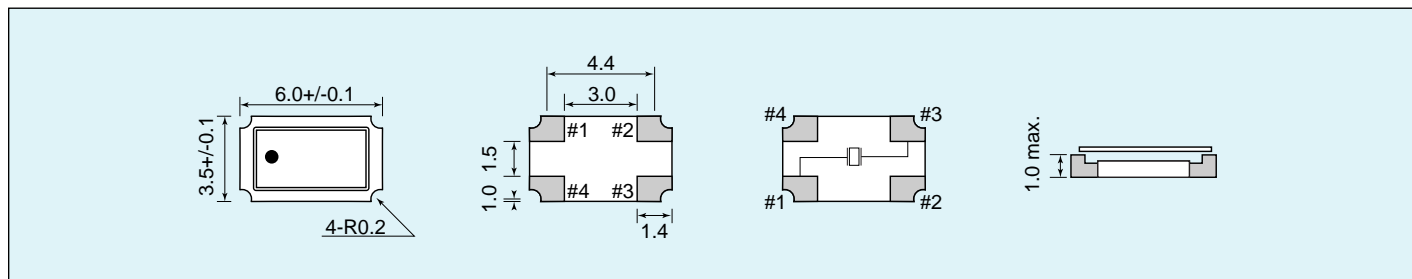
- ① Model: KSX-36
 ② Frequency: 19.2 MHz
 ③ Specification: 4 digits on end of part number



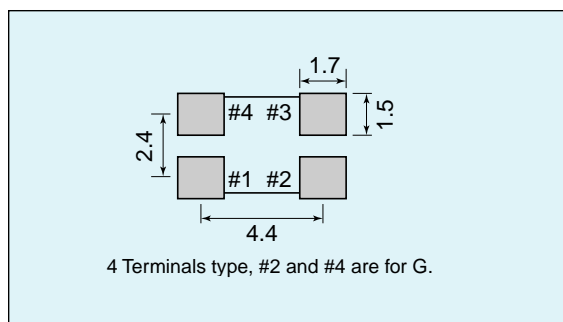
SPECIFICATIONS (KSX)

Parameters	Code	Specification	Remarks
Frequency Range	fo	12~22MHz	See available frequencies below
Load Capacitance	CL	12.0pF	
Frequency Tolerance	$\Delta f/f$	± 10 ppm	+25 $\pm 2^{\circ}\text{C}$
Storage Temperature	Tstg	-40 $^{\circ}\text{C}$ ~+85 $^{\circ}\text{C}$	
Operating Temperature	Topr	-30 $^{\circ}\text{C}$ ~+80 $^{\circ}\text{C}$	
Frequency Stability vs. Temperature	$\Delta f/T$	± 10 ppm	-10 $^{\circ}\text{C}$ ~+60 $^{\circ}\text{C}$ (+25 $^{\circ}\text{C}$ standard)
Crystal Impedance	CI	30 (max.)	0/25/50 $^{\circ}\text{C}$ & 1 μW /100 μW

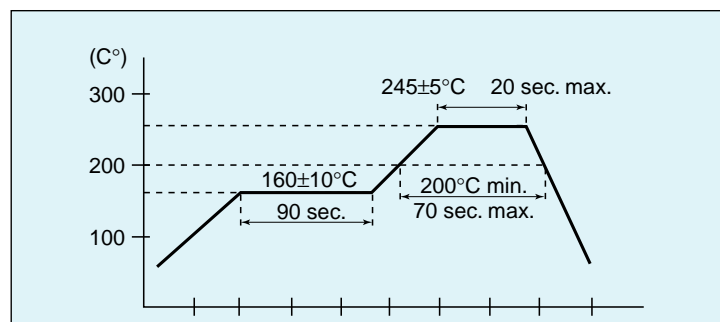
DIMENSIONS



RECOMMENDED LAND PATTERN



RECOMMENDED REFLOW PROFILE



FREQUENCY (MHz)

12.00	12.600	13.000	13.8650	14.850	16.368	19.200	19.800	21.145	21.400
12.500	12.800	13.824	14.400	15.360	16.800	19.680	20.945	21.250	26.000

MHz Band Quartz Crystals

Leaded Type - KT Series

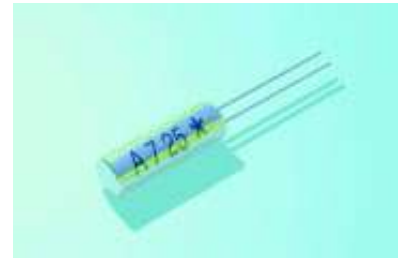
FEATURES

- 1) Reference frequency for telecommunication system
- 2) High stability of characteristics due to vacuum pack can
- 3) Reflow solderable (Drift after solder: ±1ppm)
- 4) Bulk packaged 500 pieces/bag
- 5) Sold in increments of 2000 pieces

HOW TO ORDER

KT-308 - 192M ****

- ① Model: KT-308
 ② Frequency: 19.2MHz
 ③ Specification: 4 digits on end of part number



SPECIFICATIONS (KT)

Parameters	Code	Specification	Remarks
Frequency Range	fo	12~22MHz	See available frequencies below
Load Capacitance	CL	13.0pF	
Frequency Tolerance	Δf/f	±10ppm	+25±2°C
Storage Temperature	Tstg	-40°C~+85°C	
Operating Temperature	Topr	-30°C~+80°C	
Frequency Stability vs. Temperature	Δf/T	±10ppm	-10°C~+60°C (+25°C standard)
Crystal Impedance	CI	30 (max.)	-10/25/50°C & -10dbm/-30dbm

DIMENSIONS AND MARKING

A : Frequency (19.2MHz)
 7 : Production Year (1997)
 25: Production Week (25th week)
 * : Option

FREQUENCY (MHz)

12.00	12.800	13.824	14.400	15.360	16.800	20.945	19.800	21.250
12.600	13.000	13.8650	14.850	16.368	19.200	19.800	21.145	21.400

USA

AVX Myrtle Beach, SC Corporate Offices

Tel: 843-448-9411
FAX: 843-448-1943

AVX Northwest, WA

Tel: 360-699-8746
FAX: 360-699-8751

AVX North Central, IN

Tel: 317-848-7153
FAX: 317-844-9314

AVX Northeast, MA

Tel: 508-485-8114
FAX: 508-485-8471

AVX Mid-Pacific, CA

Tel: 408-436-5400
FAX: 408-437-1500

AVX Southwest, AZ

Tel: 602-834-7919
FAX: 602-834-8078

AVX South Central, TX

Tel: 972-669-1223
FAX: 972-669-2090

AVX Southeast, NC

Tel: 919-878-6357
FAX: 919-878-6462

AVX Canada

Tel: 905-564-8959
FAX: 905-564-9728

EUROPE

AVX Limited, England European Headquarters

Tel: ++44 (0)1252 770000
FAX: ++44 (0)1252 770001

AVX S.A., France

Tel: ++33 (1) 69.18.46.00
FAX: ++33 (1) 69.28.73.87

AVX GmbH, Germany - AVX

Tel: ++49 (0) 8131 9004-0
FAX: ++49 (0) 8131 9004-44

AVX GmbH, Germany - Elco

Tel: ++49 (0) 2741 2990
FAX: ++49 (0) 2741 299133

AVX srl, Italy

Tel: ++39 (0)2 665 00116
FAX: ++39 (0)2 614 2576

AVX sro, Czech Republic

Tel: ++420 (0)467 558340
FAX: ++420 (0)467 2844

ASIA-PACIFIC

AVX/Kyocera, Singapore Asia-Pacific Headquarters

Tel: (65) 258-2833
FAX: (65) 350-4880

AVX/Kyocera, Hong Kong

Tel: (852) 2-363-3303
FAX: (852) 2-765-8185

AVX/Kyocera, Korea

Tel: (82) 2-785-6504
FAX: (82) 2-784-5411

AVX/Kyocera, Taiwan

Tel: (886) 2-2516-7010
FAX: (886) 2-2506-9774

AVX/Kyocera, China

Tel: (86) 21-6249-0314-16
FAX: (86) 21-6249-0313

AVX, Malaysia

Tel: (60) 4-228-1190
FAX: (60) 4-228-1196

Elco, Japan

Tel: 045-943-2906
FAX: 045-943-2910

Kyocera, Japan

Tel: (81) 75-593-4518
FAX: (81) 75-502-2705

Contact:



<http://www.avxcorp.com>