

KBR -M, -MS, -MSA, -MSB Series Ceramic Resonators

MHz Band Ceramic Resonators

f_o : 2.00 to 13.00 MHz

FEATURES

- 1) Ultracompact, lightweight design
- 2) Resistant to damage from impact and vibration
- 3) Excellent temperature stability ($\pm 0.3\%$)
- 4) Low cost
- 5) Bulk packaged 500 pieces per bag or 2000 pieces per reel
- 6) Sold in increments of 200 pieces

HOW TO ORDER

KBR - 4.00 MSA TR

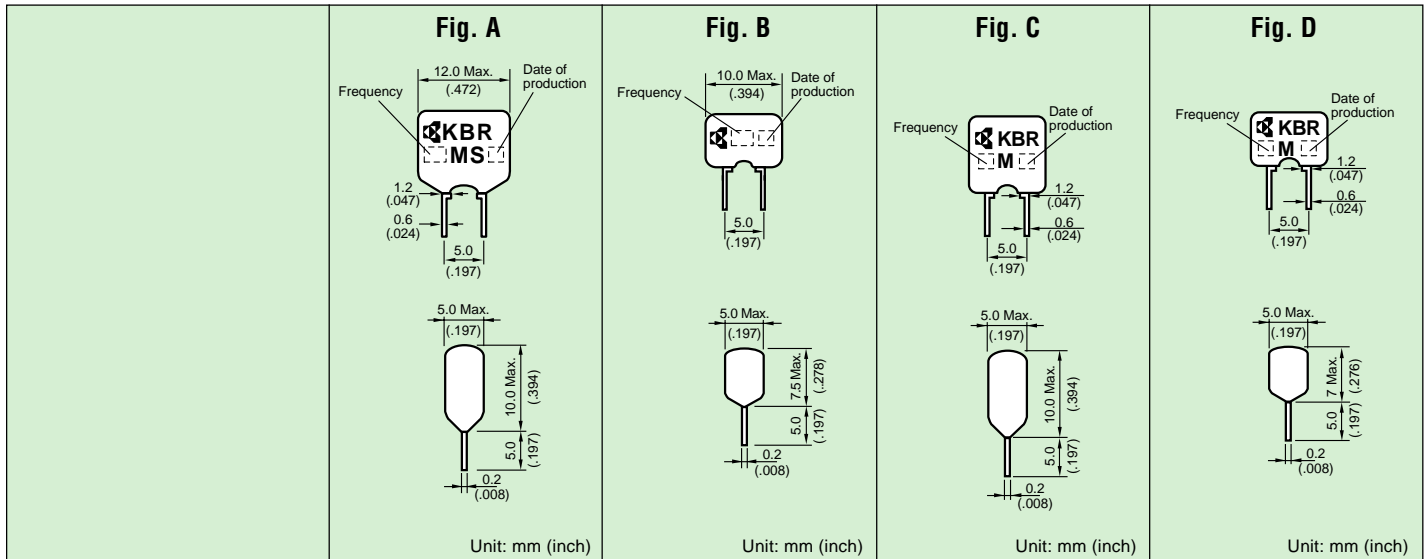
- ① ② ③ ④
- ① Type: (Kyocera Bulk Resonator)
 - ② Oscillation frequency (MHz)
 - ③ Resonator type:
 MS = 2.00 to 3.57 MHz
 MSA = 3.58 to 8.00 MHz (Water resistant)
 MSB = 3.58 to 6.00 MHz ("No-Clean" Process only)
 M = 6.01 to 13.00 MHz
 - ④ Packaging:
 TR = Tape and reel
 □ = Bulk



SPECIFICATIONS (KBR-□MS/KBR-□MSA/KBR-□MSB/KBR-□M Series)

| Series | MS | MSA, -MSB | M | M |
|---|------------------|------------------|------------------|-------------------|
| Dimension | Fig. A | Fig. B | Fig. C | Fig. D |
| Oscillation Frequency | 2.00 to 3.57 MHz | 3.58 to 8.00 MHz | 6.01 to 6.99 MHz | 7.00 to 13.00 MHz |
| Frequency Tolerance | $\pm 0.5\%$ | $\pm 0.5\%$ | $\pm 0.5\%$ | $\pm 0.5\%$ |
| Resonant Impedance | 100 Max | 30 Max | 40 Max | 40 Max |
| Temperature Characteristic (-20 to +80°C) | $\pm 0.3\%$ | $\pm 0.3\%$ | $\pm 0.5\%$ | $\pm 0.5\%$ |

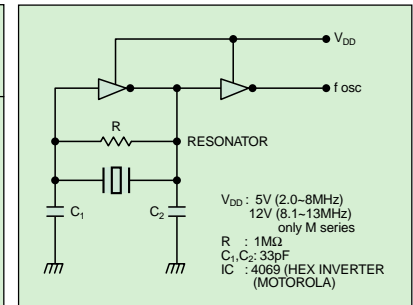
DIMENSIONS



KBR-3.58MSA - 200 series for Telephone D.T.M.F. Applications

| P/N | Frequency | Frequency Tolerance | Resonant Resistance | Temperature Stability (-20 to +80°C) | Dimensions |
|-----------------|-----------|---------------------|---------------------|--------------------------------------|------------|
| KBR-3.58MSA-201 | 3.5795MHz | +0 -0.25% | 30 Max | $\pm 0.3\%$ | Fig. B |
| KBR-3.58MSA-202 | | +0.15 -0.10% | | | |
| KBR-3.58MSA-203 | | +0.30 -0.05% | | | |
| KBR-3.58MSA-204 | | +0.45 +0.20% | | | |
| KBR-3.58MSA-205 | | +0.60 +0.35% | | | |
| KBR-3.58MSA-206 | | -0.30 -0.55% | | | |
| KBR-3.58MSA-207 | | -0.15 -0.40% | | | |

TEST CIRCUIT



KBR -MY Series Ceramic Resonators

High Frequency MHz Band Ceramic Resonators f_o : 13.01 to 36.00 MHz

FEATURES

- 1) High frequency resonator to match high-speed needs
- 2) Faster start-up time as compared to quartz crystals
- 3) High durability
- 4) Bulk packaged 500 pieces per bag or 2000 pieces per reel
- 5) Sold in increments of 2000 pieces

HOW TO ORDER

KBR - 16.00 MSA TR

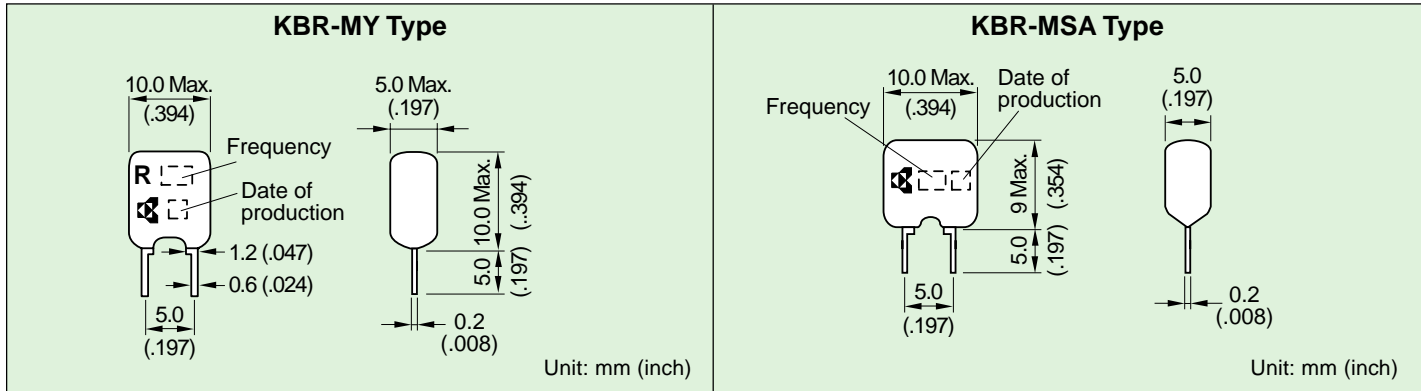
- ① Type: (Kyocera Bulk Resonator)
- ② Oscillation frequency (MHz)
- ③ Resonator type:
MY = CMOS IC
MSA = Standard
- ④ Packaging:
□ = Bulk
TR = Tape and reel



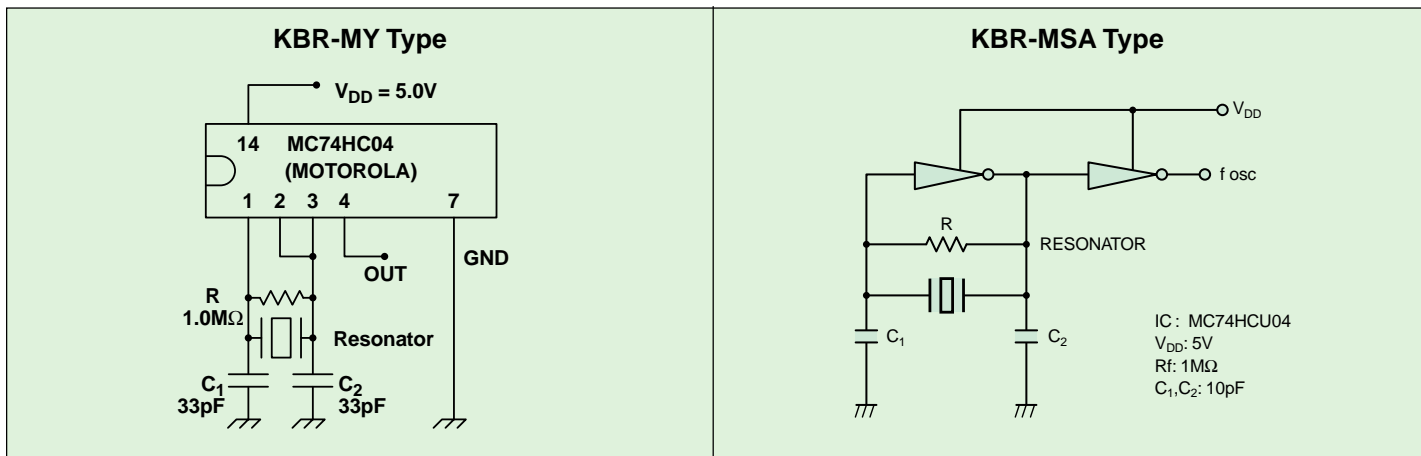
SPECIFICATIONS (KBR-□MY/KBR-□MSA)

| Series Type | KBR -MY | KBR -MSA |
|--|--------------------|----------------|
| Frequency Range | 13.01 to 15.99 MHz | 16.00 to 36.00 |
| Frequency Tolerance | ±0.5% | ±0.5% |
| Resonant Impedance | 30 max. | 30 max. |
| Temperature Characteristics (-20 to +80°C) | ±0.3% max. | ±0.3% max. |

DIMENSIONS



STANDARD TEST CIRCUIT



KBR -MKC, -MKD, -MKS Series Ceramic Resonators

Built-in Capacitor MHz Band Ceramic Resonators f_o : 3.45 to 8.00 MHz
16.00 to 36.00 MHz

FEATURES

- 1) Built-in load capacitance
- 2) Simplified circuit
- 3) Reduced parts cost
- 4) Reduced mounting cost
- 5) High density mounting
- 5) Bulk packaged 500 pieces per bag or 2000 pieces per reel
- 7) Sold in increments of 2000 pieces

HOW TO ORDER

KBR - 4.00 MKC TR

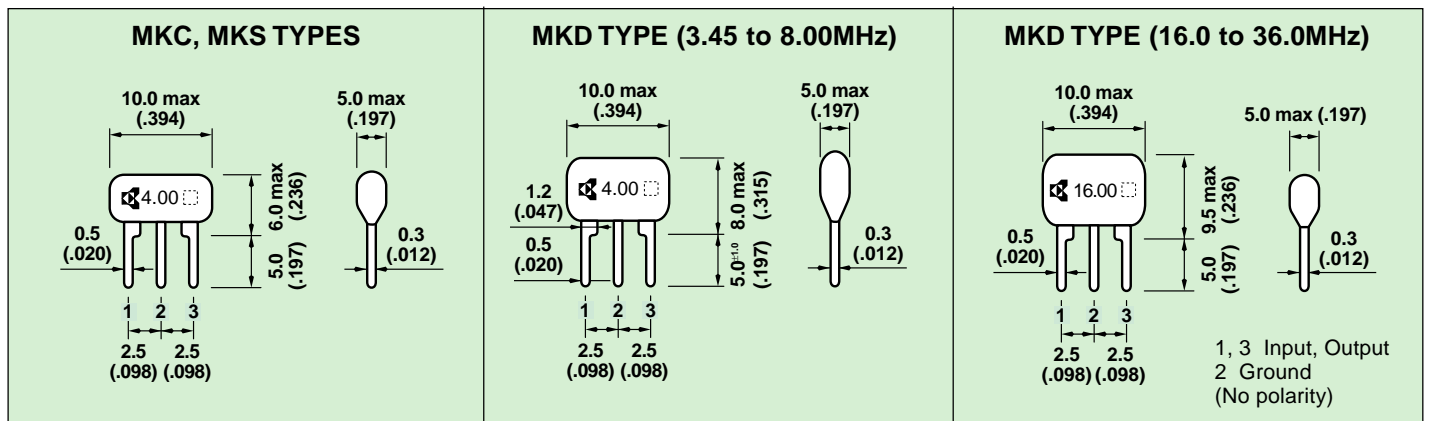
- ① Type: (Kyocera Bulk Resonator)
- ② Oscillation frequency (MHz)
- ③ Resonator type:
MKC = "No-Clean" Process only
MKD = Water resistant
MKS = Standard
- ④ Packaging:
□ = Bulk
TR = Tape and reel



SPECIFICATIONS (KBR-□MKC/KBR-□MKD/KBR-□MKS)

| Series Type | KBR -MKC, -MKD, -MKS | KBR -MKD |
|--|----------------------|----------------|
| Frequency Range | 3.45 to 8.00 MHz | 16.00 to 36.00 |
| Frequency Tolerance | ±0.5% | ±0.5% |
| Resonant Impedance | 30 | 30 |
| Temperature Characteristics (-20 to +80°C) | ±0.5% | ±0.3% |

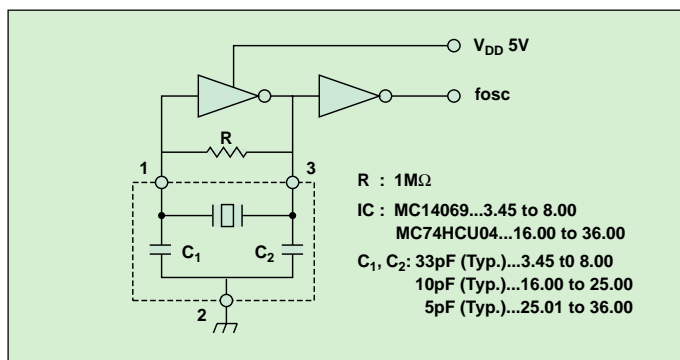
DIMENSIONS



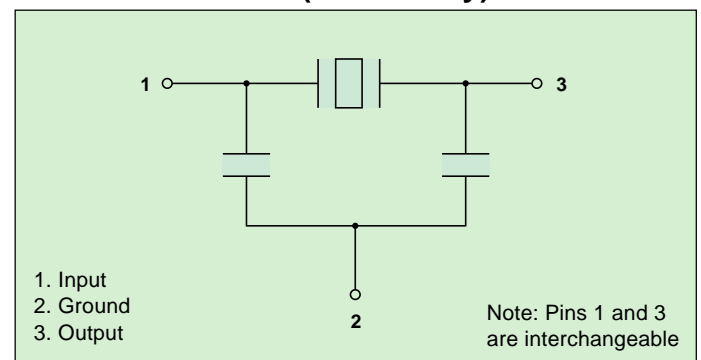
Unit: mm (inch)

Tolerance ±0.2mm unless otherwise specified

TEST CIRCUIT



PIN CONNECTION (No Polarity)



Tape & Reel Packaging

MHz Ceramic Resonators

TAPE AND REEL PACKAGING

- 2000 pieces per reel
- Min. of 3 open positions at the beginning and end of tape

AMMO PACK

- 2000 pieces per package
- A minimum of 38.1mm or three positions shall be open at beginning and end of tape
- Each fold shall be 317.35mm in length or the equivalent of twenty-five positions

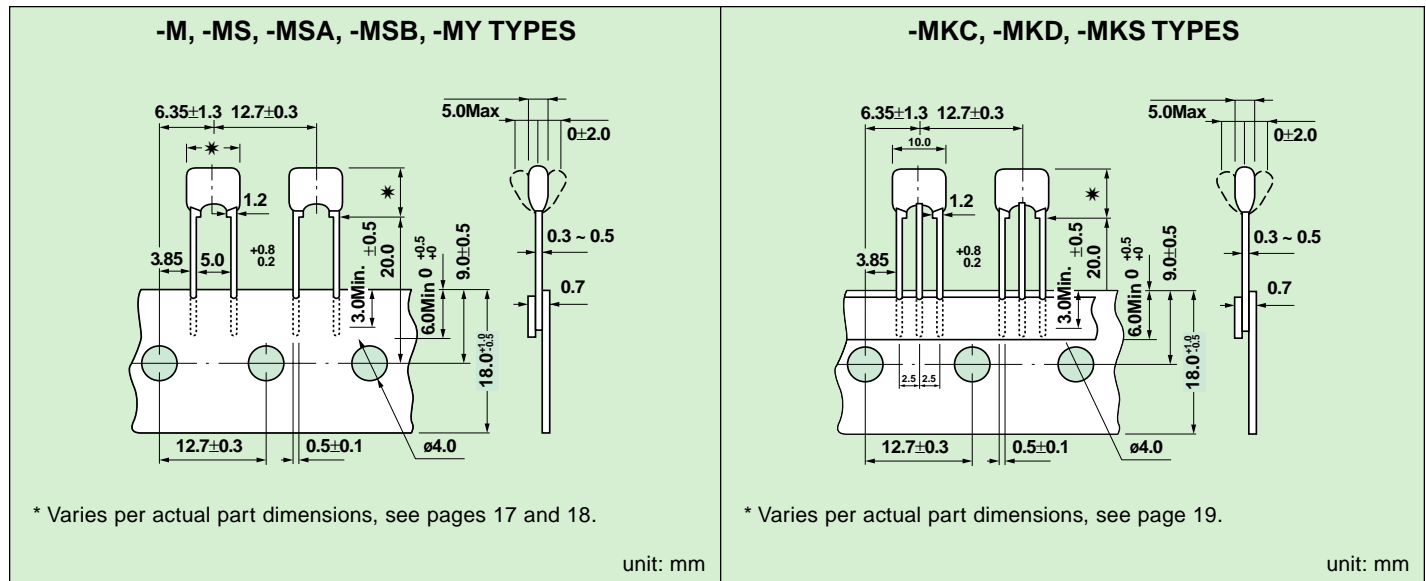
HOW TO ORDER

KBR - [] [] TR

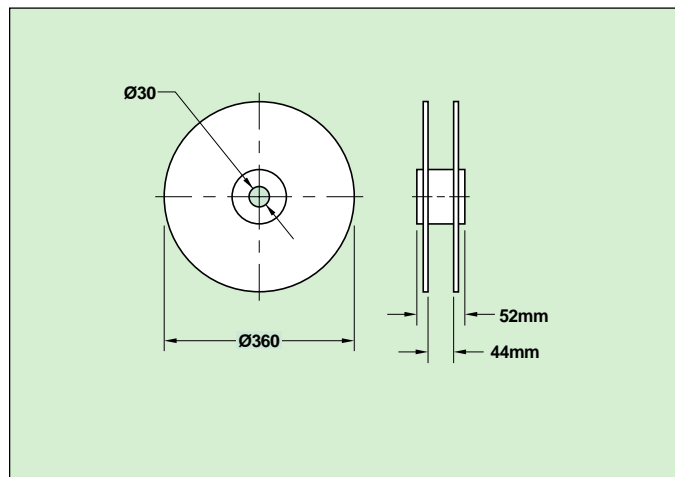
- ① ② ③ ④

- ① Type: (Kyocera Bulk Resonator)
- ② Oscillation frequency (MHz)
- ③ Resonator type = M/MS/MSA/MSB/MY/MKC/MKD
- ④ Packaging:
TR = Tape and reel
TF = Ammo pack

TAPE DIMENSIONS



REEL DIMENSIONS



AMMO PACK DIMENSIONS

