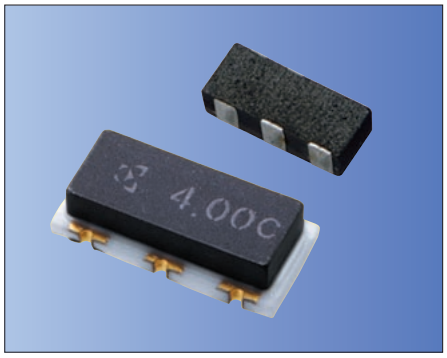
# MHz Band Ceramic Chip Resonators (SMD)
# PBRV-H/ PBRV-M/ PRQV Series

KYOCERA

for Automotive Applications




RoHS Compliant

## Features

- Miniature & low profile
- Rectangular shape allows easy pick and placement
- Component cost and space saving
- High density mounting possible
- Reflow solderable & washable
- High reliability, high temperature operation
- AEC-Q200

## Applications

- Automotive
- ABS
- ECU
- Air-Bag System

## How to Order (PBRV-H,PBRV-M)

PBRV 15.00 H R 50 Y 000
① ② ③ ④ ⑤ ⑥ ⑦

① Series (PBRV: Automotive)
② Frequency (MHz)
③ Type (H, M)
④ Packing _Bulk
(Null)
R Reel (H: 2k/ reel, M: 3k/ reel)
⑤ Frequency Tolerance at 25°C

| | | | |
|---|---|---|---|
| 10 | ±0.1% | 20 | ±0.2% |
| 30 | ±0.3% | 40 | ±0.4% |
| 50 | ±0.5% | 70 | ±0.7% |

⑥ Operating Temperature

| | | | |
|---|---|---|---|
| X | –40°C to 85°C | Y | –40°C to 125°C |
| Z | –40°C to 150°C | | |

⑦ Unique Code

## How to Order (PRQV)

PRQV 8.00 S R 50 10 Y 000
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Series (PRQV: Automotive)
② Frequency (MHz)
③ Type (S)
④ Packing _Bulk
(Null)
R Reel (3k/ reel)
⑤ Frequency Tolerance at 25°C

| | | | |
|---|---|---|---|
| 10 | ±0.1% | 20 | ±0.2% |
| 30 | ±0.3% | 40 | ±0.4% |
| 50 | ±0.5% | 70 | ±0.7% |

⑥ Built-in Capacitance 10pF: 10
⑦ Operating Temperature

| | | | |
|---|---|---|---|
| X | –40°C to 85°C | Y | –40°C to 125°C |
| Z | –40°C to 150°C | | |

⑧ Unique Code

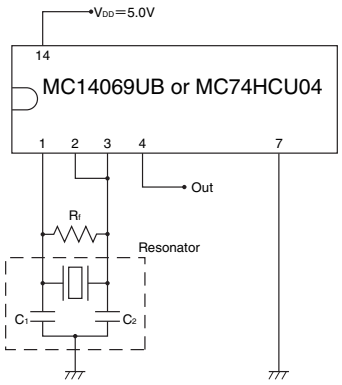
## Specifications

| Series | Frequency Range (MHz) | Frequency Tolerance (25°C) | Temperature Stability |
|---|---|---|---|
| PBRV-H PBRV-M | 4.00 to 8.00 | ±0.5% (op. ±0.3%) | Y: ±0.5% (–40 to +125°C) Z: ±0.5% (–40 to +150°C) |
| | 8.01 to 20.00 | ±0.7% (op. ±0.5%) | Y: ±0.1% (–40 to +125°C) Z: ±0.2% (–40 to +150°C) |
| PRQV | 8.00 to 20.00 | ±0.5% (op. ±0.3%) | Y: ±0.5% (–40 to +125°C) Z: ±0.5% (–40 to +150°C) |

* Aging for 10 years is within ±0.3% from the initial frequency at 25°C.
* Please contact us for products without built-in capacitors.

Note)
- This product includes built-in capacitors, but values may not be the most appropriate depending on IC's.
- Evaluation of circuit with IC is necessary. IC circuit matching may be referenced with
  1) IC data books
  2) List of Recommended circuits in Kyocera website.
- Please contact IC manufacturer or Kyocera when there are difficulties in finding recommended circuits.

## Test Circuit




**PBRV-H Type**
Rf=1MΩ
C1=C2=30pF (4.00 to 8.00MHz) IC: MC14069UB
C1=C2=10pF (8.01 to 20.0MHz) IC: MC74HCU04

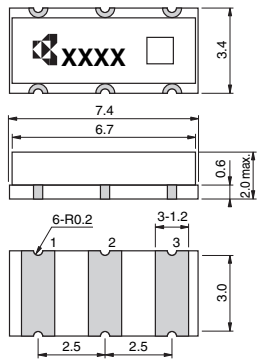
**PBRV-M Type**
Rf=1MΩ
C1=C2=15pF (4.00 to 8.00MHz) IC: MC14069UB
C1=C2=10pF (8.01 to 20.0MHz) IC: MC74HCU04

**PRQV Type**
Rf=1MΩ
C1=C2=10pF (8.00 to 20.0MHz) IC: MC74HCU04
* C1, C2 are for Reference.

## Dimensions

(Unit: mm)

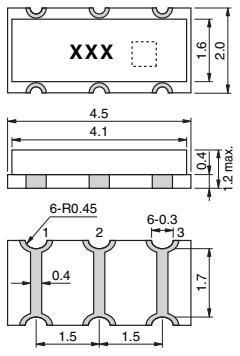
PBRV-H Type




Standard Tol.: ±0.3
Termination: Ni+Au Flash Plating
1. 3 Input, Output (No polarity)

(Unit: mm)

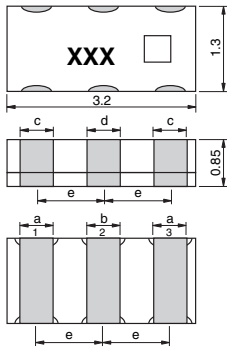
PBRV-M Type




Standard Tol.: ±0.2
Termination: Ni+Au Flash Plating
1. 3 Input, Output (No polarity)

(Unit: mm)

PRQV Type




Standard Tol.: ±0.15
Termination: Ni+Sn Plating

| # | Pin # |
|---|---|
| 1 | Input |
| 2 | Ground |
| 3 | Output |

(Unit: mm)

| Frequency (MHz) | a | b | c | d | e |
|---|---|---|---|---|---|
| 8.00 to 12.50 | 0.4 | 0.4 | 0.6 | 0.4 | 1.2 |
| 12.51 to 20.00 | 0.6 | 0.4 | 0.6 | 0.4 | 0.95 |