



**THE DATASHEET OF  
ERB21B5C2E100JDX1L**



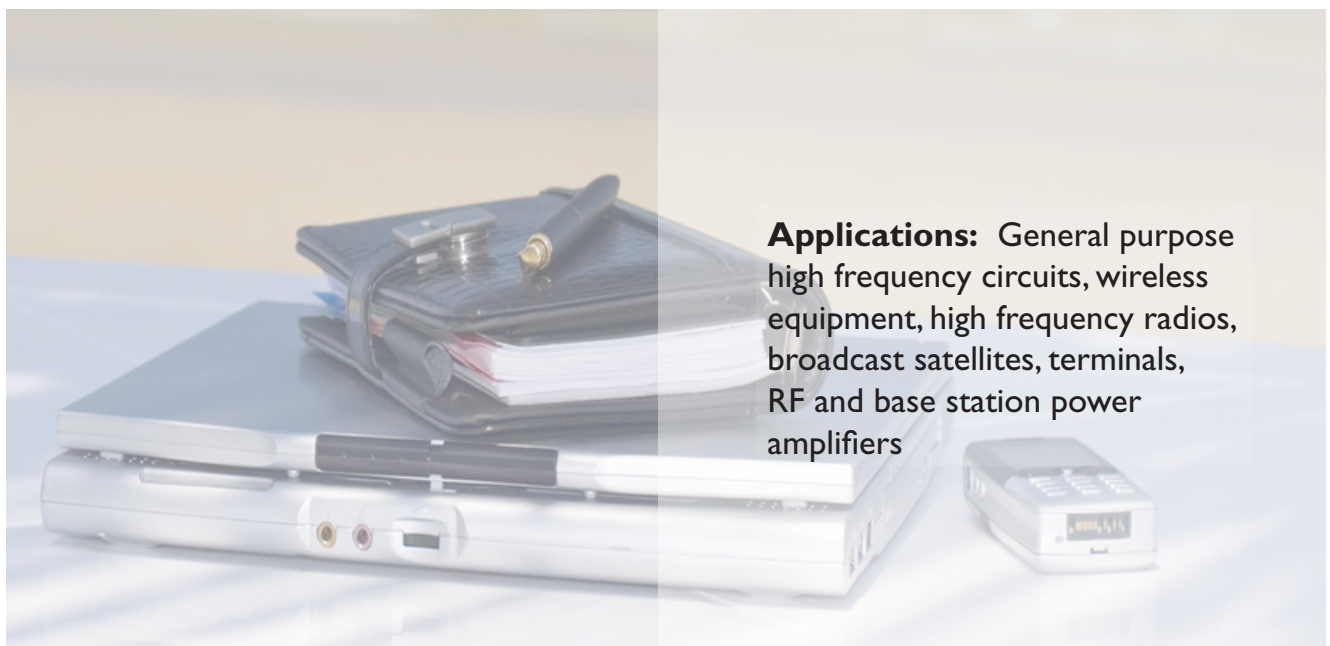
### ERB Product Summary

**ERB Series:** Exhibiting a capacitance range of 0.5 to 1,000pF, the ERB series of capacitors comes with higher Q and lower ESR which is better than the standard products of equivalent packages. For high performance, medium power RF designs, this series offers low ESR in the 1MHz to 1GHz frequency range. The temperature stability of the C0G dielectrics ensures low power dissipation. The ERB series is designed with precious metal inner electrodes. These surface mount capacitors are available in voltages up to 500VDC in a 1210 EIA size.



#### Features:

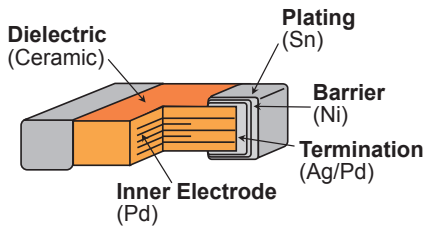
- Size: 0603, 0805, and 1210
- Voltage: 50, 100, 250, 300, 500VDC
- Cap Range: 0.5 to 1000pF
- Internal Electrode: Pd/Ag
- Termination: Pd/Ag + Ni/Sn plating
- ESR: Low
- Power: Medium Power (5-15W)
- Frequency Range: 1MHz – 1GHz
- Tolerance: Tight Tolerance Available ([W]=+/-0.05pF for <=5pF, [B]=+/-0.1pF for 5 - 9.1pF, [C]=+/-0.25pF for 5 - 9.1pF, [F]=+/-1% for 10 - 20pF)
- Temp. Characteristics: C0G (-55°C to 125°C with 0 ±30ppm/°C)



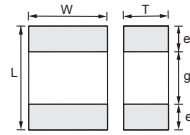
**Applications:** General purpose high frequency circuits, wireless equipment, high frequency radios, broadcast satellites, terminals, RF and base station power amplifiers

### ERB Data Sheet

#### Chip Structure



#### Chip Dimensions

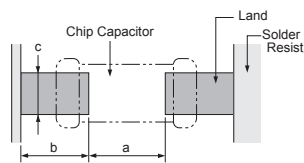


Chip Dimensions

Unit: mm

| Series | EIA size | L            | W            | T max. | e max. | g min. |
|--------|----------|--------------|--------------|--------|--------|--------|
| ERB18  | 0603     | 1.6+/-0.1    | 0.8+/-0.1    | 0.9    | 0.2    | 0.5    |
| ERB21  | 0805     | 2.0+/-0.3    | 1.25+/-0.3   | 1.35   | 0.25   | 0.7    |
| ERB32  | 1210     | 3.2+0.5/-0.4 | 2.5+0.5/-0.4 | 1.7    | 0.3    | 1.0    |

#### Land Pattern Dimensions



#### Flow Soldering

| Series | a         | b         | c         |
|--------|-----------|-----------|-----------|
| ERB18  | 0.6 ~ 1.0 | 0.8 ~ 0.9 | 0.6 ~ 0.8 |
| ERB21  | 1.0 ~ 1.2 | 0.9 ~ 1.0 | 0.8 ~ 1.1 |

#### Re-Flow Soldering

| Series | a         | b         | c         |
|--------|-----------|-----------|-----------|
| ERB18  | 0.6 ~ 0.8 | 0.6 ~ 0.7 | 0.6 ~ 0.8 |
| ERB21  | 1.0 ~ 1.2 | 0.6 ~ 0.7 | 0.8 ~ 1.1 |
| ERB31  | 2.0 ~ 2.4 | 1.0 ~ 1.2 | 1.8 ~ 2.3 |

#### Capacitance Range

| Series | TC  | WV   | Capacitance Range |      |       |        |                |
|--------|-----|------|-------------------|------|-------|--------|----------------|
|        |     |      | 1pF               | 10pF | 100pF | 1000pF | pF             |
| ERB18  | C0G | 250V |                   |      |       |        | 0.5 to 100 pF  |
|        |     | 250V |                   |      |       |        | 0.5 to 100 pF  |
| ERB21  | C0G | 100V |                   |      |       |        | 110 to 130 pF  |
|        |     | 50V  |                   |      |       |        | 150 to 160 pF  |
| ERB32  | C0G | 500V |                   |      |       |        | 0.5 to 120 pF  |
|        |     | 300V |                   |      |       |        | 130 to 150 pF  |
|        |     | 250V |                   |      |       |        | 160 to 220 pF  |
|        |     | 100V |                   |      |       |        | 240 to 470 pF  |
|        |     | 50V  |                   |      |       |        | 510 to 1000 pF |

#### Global Part Numbering

ER B 18 8 5C 2D 100 J DX5 B  
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

##### ① Product ID

| Code | Product      |
|------|--------------|
| ER   | Hi-Freq Type |

##### ② Series

| Code | Product                |
|------|------------------------|
| B    | Tin Plated Termination |

##### ③ Dimension (LxW)

| Code | Dimension (LxW) |
|------|-----------------|
| 18   | 1.6x0.8mm       |
| 21   | 2.0x1.25mm      |
| 31   | 2.0x1.25mm      |

##### ④ Dimension (T)

| Code | Dimension (T) |
|------|---------------|
| 8    | 0.8mm         |
| B    | 1.25mm        |
| Q    | 1.5mm         |

##### ⑤ Temperature Characteristics

| Code | TC  | Cap.Change  | Operating Temp. Range |
|------|-----|-------------|-----------------------|
| 5C   | C0G | 0+/-30ppm/C | 25 to 125C            |

##### ⑥ Rated Voltage

| Code | Rated Voltage |
|------|---------------|
| 1H   | DC 50V        |
| 2A   | DC 100V       |
| 2E   | DC 250V       |
| YD   | DC 300V       |
| 2H   | DC 500V       |

##### ⑦ Capacitance

| Code | Capacitance |
|------|-------------|
| R50  | 0.5pF       |
| 1R0  | 1.0pF       |
| 5R6  | 5.6pF       |
| 100  | 10pF        |

##### ⑧ Capacitance Tolerance

| Code | Cap. Tol. | TC             |
|------|-----------|----------------|
| W    | +/-0.05pF | C0G (<=5pF)    |
| B    | +/-0.1pF  | C0G (<=5pF)    |
| C    | +/-0.25pF | C0G (<=9pF)    |
| D    | +/-0.5pF  | C0G (6 to 9pF) |
| F    | +/-1%     | C0G (>=10pF)   |
| G    | +/-2%     |                |
| J    | +/-5%     |                |

##### ⑨ Individual Specification Code

##### ⑩ Packaging

| Code | Packaging             |
|------|-----------------------|
| B    | Bulk in nylon bag     |
| D    | φ180mm Paper Taping   |
| J    | φ330mm Paper Taping   |
| L    | φ180mm Plastic Taping |
| K    | φ330mm Plastic Taping |

### ERB Product Offering

### ERB18 Series

| Size | TC  | WV   | Cap    | Cap Tol   | Murata Global P/N  |
|------|-----|------|--------|-----------|--------------------|
| 0603 | C0G | 250V | 0.5pF  | +/-0.1pF  | ERB1885C2ER50BDX1D |
| 0603 | C0G | 250V | 0.5pF  | +/-0.25pF | ERB1885C2ER50CDX1D |
| 0603 | C0G | 250V | 0.75pF | +/-0.1pF  | ERB1885C2ER75BDX1D |
| 0603 | C0G | 250V | 0.75pF | +/-0.25pF | ERB1885C2ER75CDX1D |
| 0603 | C0G | 250V | 1pF    | +/-0.1pF  | ERB1885C2E1R0BDX1D |
| 0603 | C0G | 250V | 1pF    | +/-0.25pF | ERB1885C2E1R0CDX1D |
| 0603 | C0G | 250V | 1.1pF  | +/-0.1pF  | ERB1885C2E1R1BDX1D |
| 0603 | C0G | 250V | 1.2pF  | +/-0.1pF  | ERB1885C2E1R2BDX1D |
| 0603 | C0G | 250V | 1.3pF  | +/-0.1pF  | ERB1885C2E1R3BDX1D |
| 0603 | C0G | 250V | 1.5pF  | +/-0.1pF  | ERB1885C2E1R5BDX1D |
| 0603 | C0G | 250V | 1.5pF  | +/-0.25pF | ERB1885C2E1R5CDX1D |
| 0603 | C0G | 250V | 1.6pF  | +/-0.1pF  | ERB1885C2E1R6BDX1D |
| 0603 | C0G | 250V | 1.8pF  | +/-0.1pF  | ERB1885C2E1R8BDX1D |
| 0603 | C0G | 250V | 2pF    | +/-0.1pF  | ERB1885C2E2R0BDX1D |
| 0603 | C0G | 250V | 2pF    | +/-0.25pF | ERB1885C2E2R0CDX1D |
| 0603 | C0G | 250V | 2.2pF  | +/-0.1pF  | ERB1885C2E2R2BDX1D |
| 0603 | C0G | 250V | 2.4pF  | +/-0.1pF  | ERB1885C2E2R4BDX1D |
| 0603 | C0G | 250V | 2.7pF  | +/-0.1pF  | ERB1885C2E2R7BDX1D |
| 0603 | C0G | 250V | 3pF    | +/-0.1pF  | ERB1885C2E3R0BDX1D |
| 0603 | C0G | 250V | 3pF    | +/-0.25pF | ERB1885C2E3R0CDX1D |
| 0603 | C0G | 250V | 3.3pF  | +/-0.1pF  | ERB1885C2E3R3BDX1D |
| 0603 | C0G | 250V | 3.6pF  | +/-0.1pF  | ERB1885C2E3R6BDX1D |
| 0603 | C0G | 250V | 3.9pF  | +/-0.1pF  | ERB1885C2E3R9BDX1D |
| 0603 | C0G | 250V | 4pF    | +/-0.1pF  | ERB1885C2E4R0BDX1D |
| 0603 | C0G | 250V | 4pF    | +/-0.25pF | ERB1885C2E4R0CDX1D |
| 0603 | C0G | 250V | 4.3pF  | +/-0.1pF  | ERB1885C2E4R3BDX1D |
| 0603 | C0G | 250V | 4.7pF  | +/-0.1pF  | ERB1885C2E4R7BDX1D |
| 0603 | C0G | 250V | 5pF    | +/-0.1pF  | ERB1885C2E5R0BDX1D |
| 0603 | C0G | 250V | 5pF    | +/-0.25pF | ERB1885C2E5R0CDX1D |
| 0603 | C0G | 250V | 5.1pF  | +/-0.25pF | ERB1885C2E5R1CDX1D |
| 0603 | C0G | 250V | 5.6pF  | +/-0.25pF | ERB1885C2E5R6CDX1D |
| 0603 | C0G | 250V | 6pF    | +/-0.25pF | ERB1885C2E6R0CDX1D |
| 0603 | C0G | 250V | 6pF    | +/-0.5pF  | ERB1885C2E6R0DDX1D |
| 0603 | C0G | 250V | 6.2pF  | +/-0.25pF | ERB1885C2E6R2CDX1D |
| 0603 | C0G | 250V | 6.8pF  | +/-0.25pF | ERB1885C2E6R8CDX1D |

### ERB Product Offering

### ERB18 Series

| Size | TC  | WV   | Cap   | Cap Tol   | Murata Global P/N  |
|------|-----|------|-------|-----------|--------------------|
| 0603 | C0G | 250V | 7pF   | +/-0.25pF | ERB1885C2E7R0CDX5D |
| 0603 | C0G | 250V | 7pF   | +/-0.5pF  | ERB1885C2E7R0DDX5D |
| 0603 | C0G | 250V | 7.5pF | +/-0.25pF | ERB1885C2E7R5CDX5D |
| 0603 | C0G | 250V | 8pF   | +/-0.25pF | ERB1885C2E8R0CDX5D |
| 0603 | C0G | 250V | 8pF   | +/-0.5pF  | ERB1885C2E8R0DDX5D |
| 0603 | C0G | 250V | 8.2pF | +/-0.25pF | ERB1885C2E8R2CDX5D |
| 0603 | C0G | 250V | 9pF   | +/-0.25pF | ERB1885C2E9R0CDX5D |
| 0603 | C0G | 250V | 9pF   | +/-0.5pF  | ERB1885C2E9R0DDX5D |
| 0603 | C0G | 250V | 9.1pF | +/-0.25pF | ERB1885C2E9R1CDX5D |
| 0603 | C0G | 250V | 10pF  | +/-2%     | ERB1885C2E100GDX5D |
| 0603 | C0G | 250V | 10pF  | +/-5%     | ERB1885C2E100JDX5D |
| 0603 | C0G | 250V | 12pF  | +/-2%     | ERB1885C2E120GDX5D |
| 0603 | C0G | 250V | 12pF  | +/-5%     | ERB1885C2E120JDX5D |
| 0603 | C0G | 250V | 15pF  | +/-2%     | ERB1885C2E150GDX5D |
| 0603 | C0G | 250V | 15pF  | +/-5%     | ERB1885C2E150JDX5D |
| 0603 | C0G | 250V | 18pF  | +/-2%     | ERB1885C2E180GDX5D |
| 0603 | C0G | 250V | 18pF  | +/-5%     | ERB1885C2E180JDX5D |
| 0603 | C0G | 250V | 22pF  | +/-2%     | ERB1885C2E220GDX5D |
| 0603 | C0G | 250V | 22pF  | +/-5%     | ERB1885C2E220JDX5D |
| 0603 | C0G | 250V | 27pF  | +/-2%     | ERB1885C2E270GDX5D |
| 0603 | C0G | 250V | 27pF  | +/-5%     | ERB1885C2E270JDX5D |
| 0603 | C0G | 250V | 33pF  | +/-2%     | ERB1885C2E330GDX5D |
| 0603 | C0G | 250V | 33pF  | +/-5%     | ERB1885C2E330JDX5D |
| 0603 | C0G | 250V | 39pF  | +/-2%     | ERB1885C2E390GDX5D |
| 0603 | C0G | 250V | 39pF  | +/-5%     | ERB1885C2E390JDX5D |
| 0603 | C0G | 250V | 47pF  | +/-2%     | ERB1885C2E470GDX5D |
| 0603 | C0G | 250V | 47pF  | +/-5%     | ERB1885C2E470JDX5D |
| 0603 | C0G | 250V | 56pF  | +/-2%     | ERB1885C2E560GDX5D |
| 0603 | C0G | 250V | 56pF  | +/-5%     | ERB1885C2E560JDX5D |
| 0603 | C0G | 250V | 68pF  | +/-2%     | ERB1885C2E680GDX5D |
| 0603 | C0G | 250V | 68pF  | +/-5%     | ERB1885C2E680JDX5D |
| 0603 | C0G | 250V | 82pF  | +/-2%     | ERB1885C2E820GDX5D |
| 0603 | C0G | 250V | 82pF  | +/-5%     | ERB1885C2E820JDX5D |
| 0603 | C0G | 250V | 100pF | +/-2%     | ERB1885C2E101GDX5D |
| 0603 | C0G | 250V | 100pF | +/-5%     | ERB1885C2E101JDX5D |

### ERB Product Offering

### ERB2I Series

| Size | TC  | WV   | Cap    | Cap Tol   | Murata Global P/N  |
|------|-----|------|--------|-----------|--------------------|
| 0805 | C0G | 250V | 0.5pF  | +/-0.1pF  | ERB21B5C2ER50BDX1L |
| 0805 | C0G | 250V | 0.5pF  | +/-0.25pF | ERB21B5C2ER50CDX1L |
| 0805 | C0G | 250V | 0.75pF | +/-0.1pF  | ERB21B5C2ER75BDX1L |
| 0805 | C0G | 250V | 0.75pF | +/-0.25pF | ERB21B5C2ER75CDX1L |
| 0805 | C0G | 250V | 1pF    | +/-0.1pF  | ERB21B5C2E1R0BDX1L |
| 0805 | C0G | 250V | 1pF    | +/-0.25pF | ERB21B5C2E1R0CDX1L |
| 0805 | C0G | 250V | 1.1pF  | +/-0.1pF  | ERB21B5C2E1R1BDX1L |
| 0805 | C0G | 250V | 1.2pF  | +/-0.1pF  | ERB21B5C2E1R2BDX1L |
| 0805 | C0G | 250V | 1.3pF  | +/-0.1pF  | ERB21B5C2E1R3BDX1L |
| 0805 | C0G | 250V | 1.5pF  | +/-0.1pF  | ERB21B5C2E1R5BDX1L |
| 0805 | C0G | 250V | 1.5pF  | +/-0.25pF | ERB21B5C2E1R5CDX1L |
| 0805 | C0G | 250V | 1.6pF  | +/-0.1pF  | ERB21B5C2E1R6BDX1L |
| 0805 | C0G | 250V | 1.8pF  | +/-0.1pF  | ERB21B5C2E1R8BDX1L |
| 0805 | C0G | 250V | 2pF    | +/-0.1pF  | ERB21B5C2E2R0BDX1L |
| 0805 | C0G | 250V | 2pF    | +/-0.25pF | ERB21B5C2E2R0CDX1L |
| 0805 | C0G | 250V | 2.2pF  | +/-0.1pF  | ERB21B5C2E2R2BDX1L |
| 0805 | C0G | 250V | 2.4pF  | +/-0.1pF  | ERB21B5C2E2R4BDX1L |
| 0805 | C0G | 250V | 2.7pF  | +/-0.1pF  | ERB21B5C2E2R7BDX1L |
| 0805 | C0G | 250V | 3pF    | +/-0.1pF  | ERB21B5C2E3R0BDX1L |
| 0805 | C0G | 250V | 3pF    | +/-0.25pF | ERB21B5C2E3R0CDX1L |
| 0805 | C0G | 250V | 3.3pF  | +/-0.1pF  | ERB21B5C2E3R3BDX1L |
| 0805 | C0G | 250V | 3.6pF  | +/-0.1pF  | ERB21B5C2E3R6BDX1L |
| 0805 | C0G | 250V | 3.9pF  | +/-0.1pF  | ERB21B5C2E3R9BDX1L |
| 0805 | C0G | 250V | 4pF    | +/-0.1pF  | ERB21B5C2E4R0BDX1L |
| 0805 | C0G | 250V | 4pF    | +/-0.25pF | ERB21B5C2E4R0CDX1L |
| 0805 | C0G | 250V | 4.3pF  | +/-0.1pF  | ERB21B5C2E4R3BDX1L |
| 0805 | C0G | 250V | 4.7pF  | +/-0.1pF  | ERB21B5C2E4R7BDX1L |
| 0805 | C0G | 250V | 5pF    | +/-0.1pF  | ERB21B5C2E5R0BDX1L |
| 0805 | C0G | 250V | 5pF    | +/-0.25pF | ERB21B5C2E5R0CDX1L |
| 0805 | C0G | 250V | 5.1pF  | +/-0.25pF | ERB21B5C2E5R1CDX1L |
| 0805 | C0G | 250V | 5.6pF  | +/-0.25pF | ERB21B5C2E5R6CDX1L |
| 0805 | C0G | 250V | 6pF    | +/-0.25pF | ERB21B5C2E6R0CDX1L |
| 0805 | C0G | 250V | 6pF    | +/-0.5pF  | ERB21B5C2E6R0DDX1L |
| 0805 | C0G | 250V | 6.2pF  | +/-0.25pF | ERB21B5C2E6R2CDX1L |
| 0805 | C0G | 250V | 6.8pF  | +/-0.25pF | ERB21B5C2E6R8CDX1L |
| 0805 | C0G | 250V | 7pF    | +/-0.25pF | ERB21B5C2E7R0CDX1L |
| 0805 | C0G | 250V | 7pF    | +/-0.5pF  | ERB21B5C2E7R0DDX1L |
| 0805 | C0G | 250V | 7.5pF  | +/-0.25pF | ERB21B5C2E7R5CDX1L |

### ERB Product Offering

### ERB2I Series

| Size | TC  | WV   | Cap   | Cap Tol   | Murata Global P/N  |
|------|-----|------|-------|-----------|--------------------|
| 0805 | C0G | 250V | 8pF   | +/-0.25pF | ERB21B5C2E8R0CDX1L |
| 0805 | C0G | 250V | 8pF   | +/-0.5pF  | ERB21B5C2E8R0DDX1L |
| 0805 | C0G | 250V | 8.2pF | +/-0.25pF | ERB21B5C2E8R2CDX1L |
| 0805 | C0G | 250V | 9pF   | +/-0.25pF | ERB21B5C2E9R0CDX1L |
| 0805 | C0G | 250V | 9pF   | +/-0.5pF  | ERB21B5C2E9R0DDX1L |
| 0805 | C0G | 250V | 10pF  | +/-2%     | ERB21B5C2E100GDX1L |
| 0805 | C0G | 250V | 10pF  | +/-5%     | ERB21B5C2E100JDX1L |
| 0805 | C0G | 250V | 12pF  | +/-2%     | ERB21B5C2E120GDX1L |
| 0805 | C0G | 250V | 12pF  | +/-5%     | ERB21B5C2E120JDX1L |
| 0805 | C0G | 250V | 15pF  | +/-2%     | ERB21B5C2E150GDX1L |
| 0805 | C0G | 250V | 15pF  | +/-5%     | ERB21B5C2E150JDX1L |
| 0805 | C0G | 250V | 18pF  | +/-2%     | ERB21B5C2E180GDX1L |
| 0805 | C0G | 250V | 18pF  | +/-5%     | ERB21B5C2E180JDX1L |
| 0805 | C0G | 250V | 22pF  | +/-2%     | ERB21B5C2E220GDX1L |
| 0805 | C0G | 250V | 22pF  | +/-5%     | ERB21B5C2E220JDX1L |
| 0805 | C0G | 250V | 27pF  | +/-2%     | ERB21B5C2E270GDX1L |
| 0805 | C0G | 250V | 27pF  | +/-5%     | ERB21B5C2E270JDX1L |
| 0805 | C0G | 250V | 33pF  | +/-2%     | ERB21B5C2E330GDX1L |
| 0805 | C0G | 250V | 33pF  | +/-5%     | ERB21B5C2E330JDX1L |
| 0805 | C0G | 250V | 39pF  | +/-2%     | ERB21B5C2E390GDX1L |
| 0805 | C0G | 250V | 39pF  | +/-5%     | ERB21B5C2E390JDX1L |
| 0805 | C0G | 250V | 47pF  | +/-2%     | ERB21B5C2E470GDX1L |
| 0805 | C0G | 250V | 47pF  | +/-5%     | ERB21B5C2E470JDX1L |
| 0805 | C0G | 250V | 56pF  | +/-2%     | ERB21B5C2E560GDX1L |
| 0805 | C0G | 250V | 56pF  | +/-5%     | ERB21B5C2E560JDX1L |
| 0805 | C0G | 250V | 68pF  | +/-2%     | ERB21B5C2E680GDX1L |
| 0805 | C0G | 250V | 68pF  | +/-5%     | ERB21B5C2E680JDX1L |
| 0805 | C0G | 250V | 82pF  | +/-2%     | ERB21B5C2E820GDX1L |
| 0805 | C0G | 250V | 82pF  | +/-5%     | ERB21B5C2E820JDX1L |
| 0805 | C0G | 250V | 100pF | +/-2%     | ERB21B5C2E101GDX1L |
| 0805 | C0G | 250V | 100pF | +/-5%     | ERB21B5C2E101JDX1L |
| 0805 | C0G | 100V | 120pF | +/-2%     | ERB21B5C2A121GDX1L |
| 0805 | C0G | 100V | 120pF | +/-5%     | ERB21B5C2A121JDX1L |
| 0805 | C0G | 50V  | 150pF | +/-2%     | ERB21B5C1H151GDX1L |
| 0805 | C0G | 50V  | 150pF | +/-5%     | ERB21B5C1H151JDX1L |

### ERB Product Offering

### ERB32 Series

| Size | TC  | WV   | Cap    | Cap Tol   | Murata Global P/N  |
|------|-----|------|--------|-----------|--------------------|
| 1210 | C0G | 500V | 0.5pF  | +/-0.1pF  | ERB32Q5C2HR50BDX1L |
| 1210 | C0G | 500V | 0.75pF | +/-0.1pF  | ERB32Q5C2HR75BDX1L |
| 1210 | C0G | 500V | 1pF    | +/-0.1pF  | ERB32Q5C2H1R0BDX1L |
| 1210 | C0G | 500V | 1.1pF  | +/-0.1pF  | ERB32Q5C2H1R1BDX1L |
| 1210 | C0G | 500V | 1.2pF  | +/-0.1pF  | ERB32Q5C2H1R2BDX1L |
| 1210 | C0G | 500V | 1.3pF  | +/-0.1pF  | ERB32Q5C2H1R3BDX1L |
| 1210 | C0G | 500V | 1.5pF  | +/-0.1pF  | ERB32Q5C2H1R5BDX1L |
| 1210 | C0G | 500V | 1.6pF  | +/-0.1pF  | ERB32Q5C2H1R6BDX1L |
| 1210 | C0G | 500V | 1.8pF  | +/-0.1pF  | ERB32Q5C2H1R8BDX1L |
| 1210 | C0G | 500V | 2pF    | +/-0.1pF  | ERB32Q5C2H2R0BDX1L |
| 1210 | C0G | 500V | 2.2pF  | +/-0.1pF  | ERB32Q5C2H2R2BDX1L |
| 1210 | C0G | 500V | 2.4pF  | +/-0.1pF  | ERB32Q5C2H2R4BDX1L |
| 1210 | C0G | 500V | 2.7pF  | +/-0.1pF  | ERB32Q5C2H2R7BDX1L |
| 1210 | C0G | 500V | 3pF    | +/-0.1pF  | ERB32Q5C2H3R0BDX1L |
| 1210 | C0G | 500V | 3.3pF  | +/-0.1pF  | ERB32Q5C2H3R3BDX1L |
| 1210 | C0G | 500V | 3.6pF  | +/-0.1pF  | ERB32Q5C2H3R6BDX1L |
| 1210 | C0G | 500V | 3.9pF  | +/-0.1pF  | ERB32Q5C2H3R9BDX1L |
| 1210 | C0G | 500V | 4pF    | +/-0.1pF  | ERB32Q5C2H4R0BDX1L |
| 1210 | C0G | 500V | 4.3pF  | +/-0.1pF  | ERB32Q5C2H4R3BDX1L |
| 1210 | C0G | 500V | 4.7pF  | +/-0.1pF  | ERB32Q5C2H4R7BDX1L |
| 1210 | C0G | 500V | 5pF    | +/-0.1pF  | ERB32Q5C2H5R0BDX1L |
| 1210 | C0G | 500V | 5.1pF  | +/-0.25pF | ERB32Q5C2H5R1CDX1L |
| 1210 | C0G | 500V | 5.6pF  | +/-0.25pF | ERB32Q5C2H5R6CDX1L |
| 1210 | C0G | 500V | 6pF    | +/-0.25pF | ERB32Q5C2H6R0CDX1L |
| 1210 | C0G | 500V | 6.2pF  | +/-0.25pF | ERB32Q5C2H6R2CDX1L |
| 1210 | C0G | 500V | 6.8pF  | +/-0.25pF | ERB32Q5C2H6R8CDX1L |
| 1210 | C0G | 500V | 7pF    | +/-0.25pF | ERB32Q5C2H7R0CDX1L |
| 1210 | C0G | 500V | 7.5pF  | +/-0.25pF | ERB32Q5C2H7R5CDX1L |
| 1210 | C0G | 500V | 8pF    | +/-0.25pF | ERB32Q5C2H8R0CDX1L |

### ERB Product Offering

### ERB32 Series

| Size | TC  | WV   | Cap    | Cap Tol   | Murata Global P/N  |
|------|-----|------|--------|-----------|--------------------|
| 1210 | C0G | 500V | 8.2pF  | +/-0.25pF | ERB32Q5C2H8R2CDX1L |
| 1210 | C0G | 500V | 9pF    | +/-0.25pF | ERB32Q5C2H9R0CDX1L |
| 1210 | C0G | 500V | 9.1pF  | +/-0.25pF | ERB32Q5C2H9R1CDX1L |
| 1210 | C0G | 500V | 10pF   | +/-5%     | ERB32Q5C2H100JDX1L |
| 1210 | C0G | 500V | 12pF   | +/-5%     | ERB32Q5C2H120JDX1L |
| 1210 | C0G | 500V | 15pF   | +/-5%     | ERB32Q5C2H150JDX1L |
| 1210 | C0G | 500V | 18pF   | +/-5%     | ERB32Q5C2H180JDX1L |
| 1210 | C0G | 500V | 20pF   | +/-5%     | ERB32Q5C2H200JDX1L |
| 1210 | C0G | 500V | 22pF   | +/-5%     | ERB32Q5C2H220JDX1L |
| 1210 | C0G | 500V | 27pF   | +/-5%     | ERB32Q5C2H270JDX1L |
| 1210 | C0G | 500V | 33pF   | +/-5%     | ERB32Q5C2H330JDX1L |
| 1210 | C0G | 500V | 39pF   | +/-5%     | ERB32Q5C2H390JDX1L |
| 1210 | C0G | 500V | 47pF   | +/-5%     | ERB32Q5C2H470JDX1L |
| 1210 | C0G | 500V | 56pF   | +/-5%     | ERB32Q5C2H560JDX1L |
| 1210 | C0G | 500V | 68pF   | +/-5%     | ERB32Q5C2H680JDX1L |
| 1210 | C0G | 500V | 82pF   | +/-5%     | ERB32Q5C2H820JDX1L |
| 1210 | C0G | 500V | 100pF  | +/-5%     | ERB32Q5C2H101JDX1L |
| 1210 | C0G | 500V | 120pF  | +/-5%     | ERB32Q5C2H121JDX1L |
| 1210 | C0G | 300V | 150pF  | +/-5%     | ERB32Q5CYD151JDX1L |
| 1210 | C0G | 250V | 180pF  | +/-5%     | ERB32Q5C2E181JDX1L |
| 1210 | C0G | 250V | 220pF  | +/-5%     | ERB32Q5C2E221JDX1L |
| 1210 | C0G | 100V | 270pF  | +/-5%     | ERB32Q5C2A271JDX1L |
| 1210 | C0G | 100V | 330pF  | +/-5%     | ERB32Q5C2A331JDX1L |
| 1210 | C0G | 100V | 390pF  | +/-5%     | ERB32Q5C2A391JDX1L |
| 1210 | C0G | 100V | 470pF  | +/-5%     | ERB32Q5C2A471JDX1L |
| 1210 | C0G | 50V  | 560pF  | +/-5%     | ERB32Q5C1H561JDX1L |
| 1210 | C0G | 50V  | 680pF  | +/-5%     | ERB32Q5C1H681JDX1L |
| 1210 | C0G | 50V  | 820pF  | +/-5%     | ERB32Q5C1H821JDX1L |
| 1210 | C0G | 50V  | 1000pF | +/-5%     | ERB32Q5C1H102JDX1L |

### ERB Specifications and Test Methods

| Item                                    | Specifications  | Test Method  |      |                  |   |      |   |       |   |      |   |       |   |      |
|---|---|--|------|------------------|---|------|---|-------|---|------|---|-------|---|------|
| Operating Temperature                   | - 55°C to 125°C   | Reference Temperature: 25°C  |      |                  |   |      |   |       |   |      |   |       |   |      |
| Appearance                              | No defects or abnormalities.  | Visual inspection.   |      |                  |   |      |   |       |   |      |   |       |   |      |
| Dimension                               | Within the specified dimensions.  | Using calipers.  |      |                  |   |      |   |       |   |      |   |       |   |      |
| Dielectric Strength                     | No defects or abnormalities.  | 300%* of the rated voltage<br>*250V/300V: 250%, 500V: 200%   |      |                  |   |      |   |       |   |      |   |       |   |      |
| Insulation Resistance                   | 1,000,000MΩmin.(C≤470pF)<br>100,000 MΩmin. (C > 470pF)<br>C: Nominal capacitance (pF)   | DC voltage not exceeding the rated voltage at 25°C and 75%RH max. and within 2 minutes of charging.  |      |                  |   |      |   |       |   |      |   |       |   |      |
| Q                                       | C≤220pF: Q≥10,000<br>220pF < C≤470pF: Q≥5,000<br>470pF < C≤1000pF: Q≥3,000<br>C: Nominal capacitance (pF)   | Frequency 1±0.1MHz<br>Voltage 1±0.2Vrms  |      |                  |   |      |   |       |   |      |   |       |   |      |
| Capacitance Temperature Characteristics | Capacitance Change:<br>Within the specified tolerance. (Table A-1)<br>Temperature Coefficient:<br>Within the specified tolerance. (Table A-1)<br>Capacitance Drift: Within ±0.2% or ±0.5pF (Whichever is larger)  | The temperature coefficient is determined using the capacitance measured in step 3 as a reference. When cycling the temperature sequentially from step 1 through 5 the capacitance should be within the specified tolerance for the temperature coefficient and capacitance change as in Table A-1. The capacitance drift is calculated by dividing the differences between the maximum and minimum measured values in steps 1, 3 and 5 by the cap. value in step 3.<br><table border="1" data-bbox="917 981 1409 1153"> <thead> <tr> <th>Step</th> <th>Temperature (°C)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>25±2</td> </tr> <tr> <td>2</td> <td>-55±3</td> </tr> <tr> <td>3</td> <td>25±2</td> </tr> <tr> <td>4</td> <td>125±3</td> </tr> <tr> <td>5</td> <td>25±2</td> </tr> </tbody> </table> | Step | Temperature (°C) | 1 | 25±2 | 2 | -55±3 | 3 | 25±2 | 4 | 125±3 | 5 | 25±2 |
| Step                                    | Temperature (°C)  |  |      |                  |   |      |   |       |   |      |   |       |   |      |
| 1                                       | 25±2  |  |      |                  |   |      |   |       |   |      |   |       |   |      |
| 2                                       | -55±3   |  |      |                  |   |      |   |       |   |      |   |       |   |      |
| 3                                       | 25±2  |  |      |                  |   |      |   |       |   |      |   |       |   |      |
| 4                                       | 125±3   |  |      |                  |   |      |   |       |   |      |   |       |   |      |
| 5                                       | 25±2  |  |      |                  |   |      |   |       |   |      |   |       |   |      |
| Adhesive Strength of Termination        | No removal of the terminations or other defect should occur.  | Solder the capacitor to the test jig (glass epoxy board) then apply 10N force in parallel with the test jig for 10±1sec.   |      |                  |   |      |   |       |   |      |   |       |   |      |
| Vibration Resistance                    | Appearance: No defects or abnormalities.<br>Capacitance: Within the specified tolerance.<br>C≤220pF: Q≥10,000<br>220pF < C≤470pF: Q≥5,000<br>470pF < C≤1000pF: Q≥3,000<br>C: Nominal capacitance (pF)             | Frequency range, from 10 to 55Hz and return to 10Hz, should be traversed in approximately 1 minute. This motion should be applied for a period of 2 hours in each of 3 mutually perpendicular directions total of 6 hours).  |      |                  |   |      |   |       |   |      |   |       |   |      |
| Deflection                              | No crack or marked defect should occur.   | Flexure: 1mm   |      |                  |   |      |   |       |   |      |   |       |   |      |
| Solderability of Termination            | 95% of the terminations are to be soldered evenly and continuously.   | Immerse in eutectic solder solution for 5±0.5 seconds at 245±5°C or Sn-3.0Ag-0.5Cu solder solution for 5±0.5 seconds at 245±5°C.   |      |                  |   |      |   |       |   |      |   |       |   |      |
| Resistance to Soldering Heat            | Appearance: No marking defects<br>Capacitance Change: Within ±2.5% or ±0.25 pF (Whichever is larger)<br>C≤220pF: Q≥10,000<br>220pF < C≤470pF: Q≥5,000<br>470pF < C≤1000pF: Q≥3,000<br>C: Nominal capacitance (pF) | Immerse the capacitor in a eutectic solder solution or Sn-3.0Ag-0.5Cu solder solution at 270±5°C for 10±0.5 seconds. Let sit at room temperature for 24±2 hours.   |      |                  |   |      |   |       |   |      |   |       |   |      |
| Temperature Cycle                       | Appearance: No marking defects<br>Capacitance Change: Within ±5% or ±0.5 pF (Whichever is larger)<br>C≤220pF: Q≥10,000<br>220pF < C≤470pF: Q≥5,000<br>470pF < C≤1000pF: Q≥3,000<br>C: Nominal capacitance (pF)    | - 55°C to 125°C Five cycles  |      |                  |   |      |   |       |   |      |   |       |   |      |

### ERB Specifications and Test Methods

| Item                  | Specification   | Test Method   |
|-----------------------|---|---|
| Humidity Steady State | Appearance: No marking defects<br>Capacitance Change: Within $\pm 5\%$ or $\pm 0.5$ pF (Whichever is larger)<br>$C \leq 30$ pF: $Q \geq 350$ , $10$ pF $\leq C < 30$ pF: $Q \geq 275 + 5^\circ C / 2C < 10$ pF: $Q \geq 200 + 10C$<br>C: Nominal Capacitance (puff) | Apply the 24-hour heat ( $-10$ to $+65^\circ C$ ) and humidity (80 to 100%) treatment, 10 consecutive times.                    |
| High Temperature Load | Appearance: No marking defects<br>Capacitance Change Within $\pm 3\%$ or $\pm 0.3$ pF (Whichever is larger)<br>$C \leq 30$ pF: $Q \geq 350$<br>$10$ pF $\leq C < 30$ pF: $Q \geq 275 + 5C / 2C < 10$ pF: $Q \geq 200 + 10C$<br>C: Nominal Capacitance (pF)          | Apply 200% (500V only 150%) of the rated voltage for $1000 \pm 12$ hours at the maximum operating temperature $\pm 3^\circ C$ . |

Table A-1

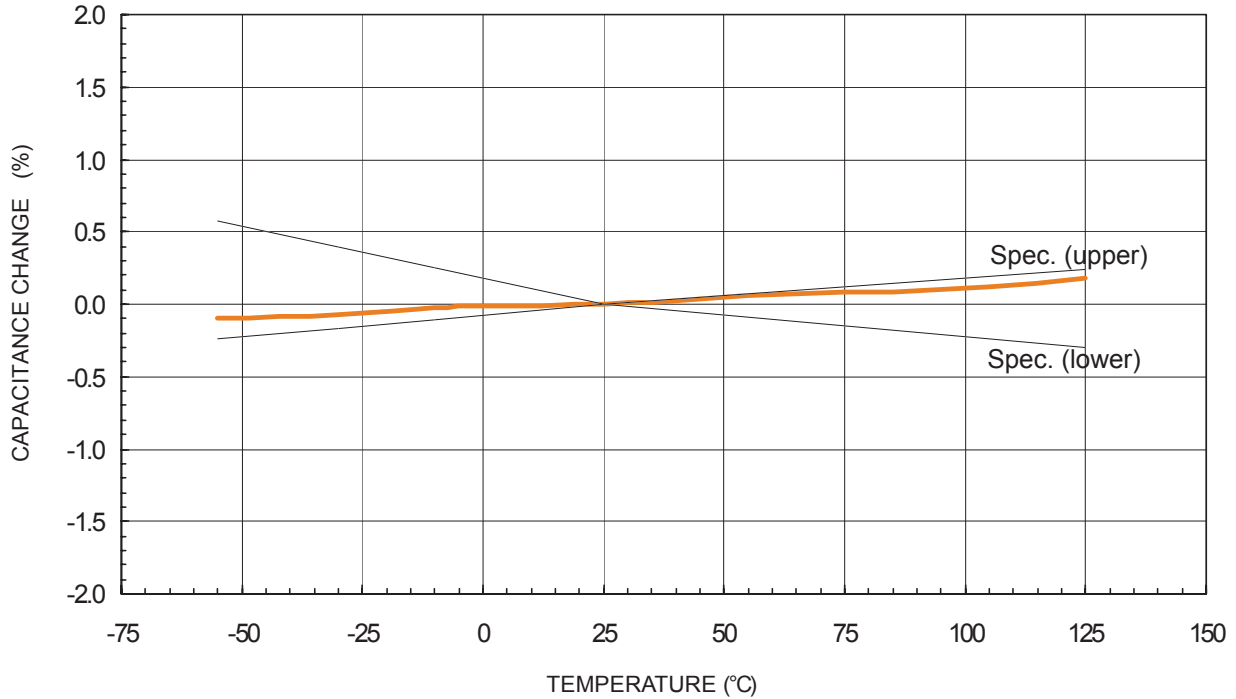
| Char. | Nominal Values (ppm/ $^\circ C$ ) Note | Capacitance Change from $25^\circ C$ (%) |       |               |       |               |       |
|-------|--|--|-------|---------------|-------|---------------|-------|
|       |  | $-55^\circ C$                            |       | $-30^\circ C$ |       | $-10^\circ C$ |       |
|       |  | Max.                                     | Min.  | Max.          | Min.  | Max.          | Min.  |
| 5C    | $0 \pm 30$                             | 0.58                                     | -0.24 | 0.4C          | -0.17 | 0.25          | -0.11 |

Note: Nominal values denote the temperature coefficient within a range of  $25^\circ C$  to  $125^\circ C$ .

### ERB Technical Data (Typical)

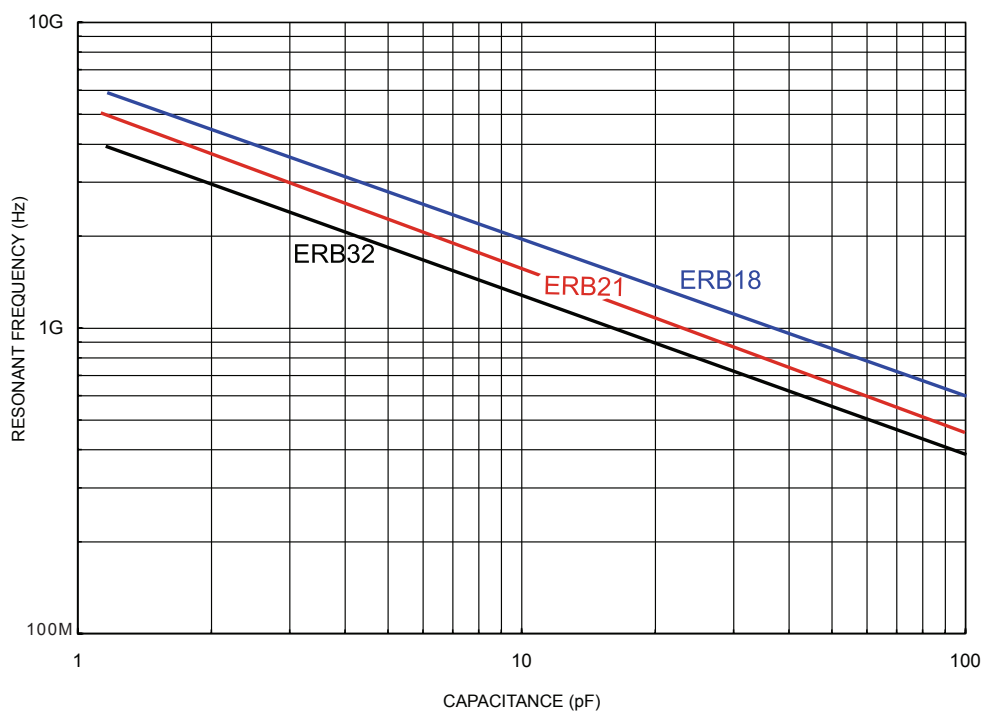
### Capacitance - Temperature Characteristics

#### C0G Characteristics (ERB)



### Resonant Frequency Characteristics

#### ERB Series

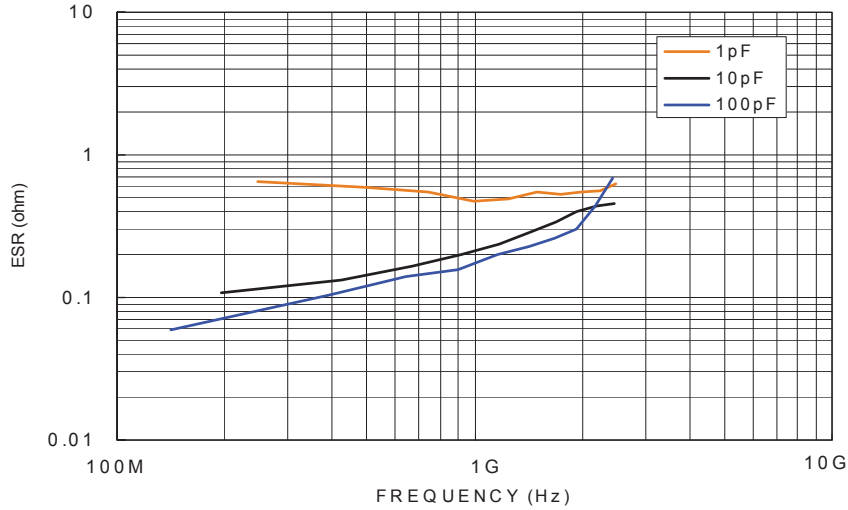


Measurement Equipment  
HP8753D

### ERB Technical Data (Typical)

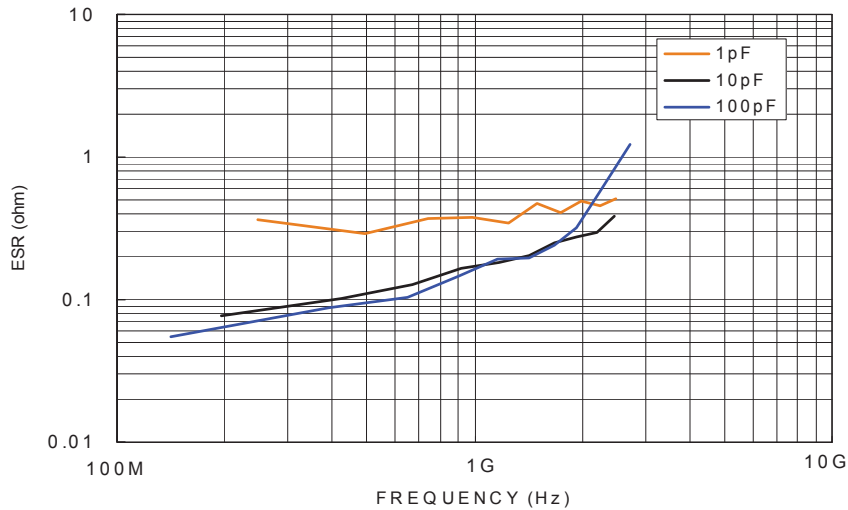
### ESR - Frequency Characteristics

#### ERB18 Series

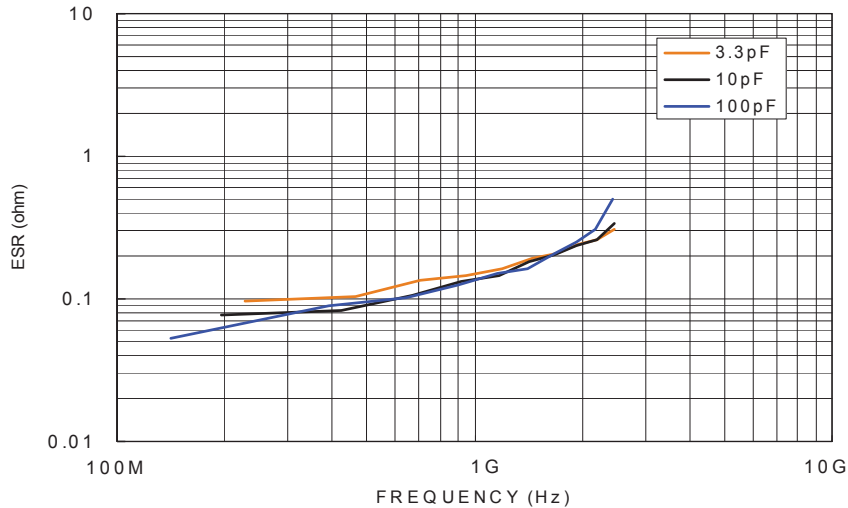


Measurement Equipment  
Boonton Resonant  
Coaxial Line 34A

#### ERB21 Series



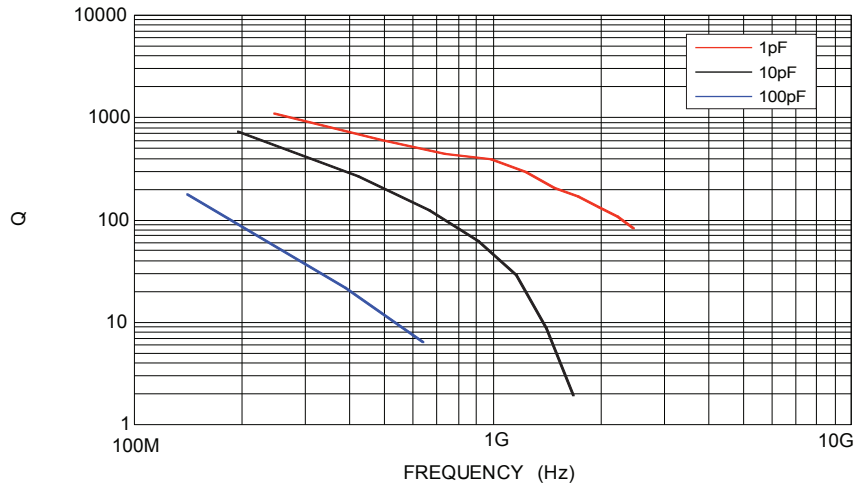
#### ERB32 Series



### ERB Technical Data (Typical)

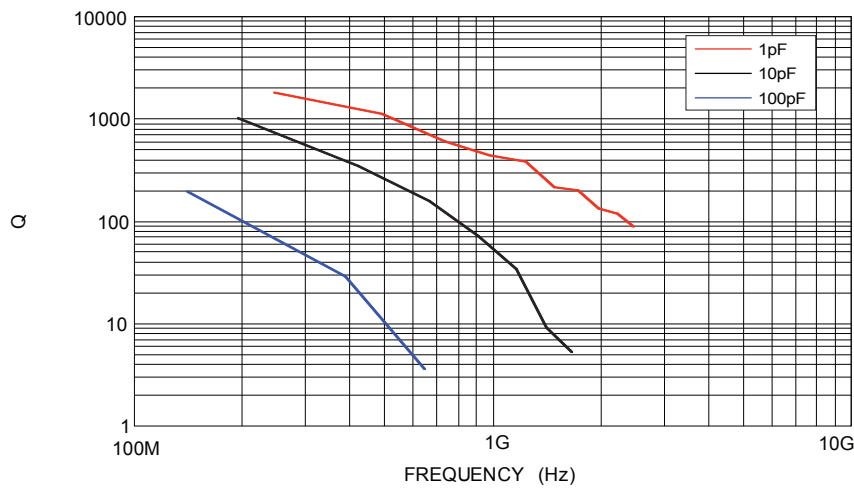
### Q - Frequency Characteristics

#### ERB18 Series

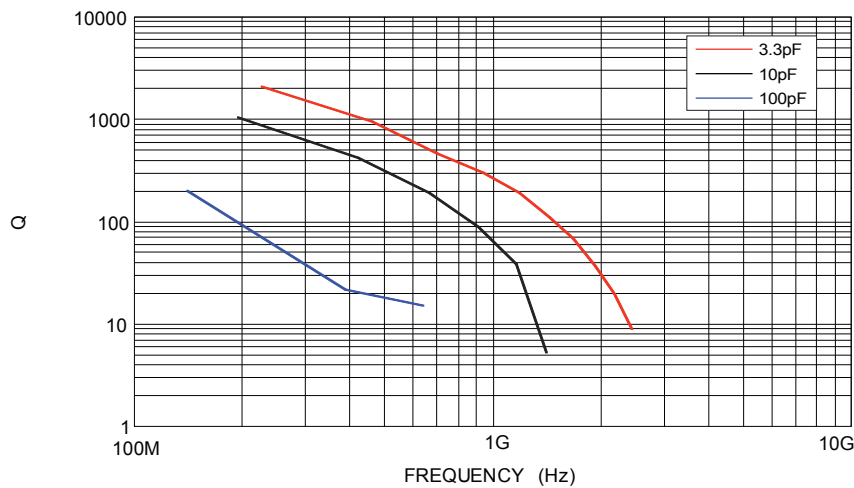


Measurement Equipment  
Boonton Resonant Coaxial-Line 34A

#### ERB21 Series



#### ERB32 Series

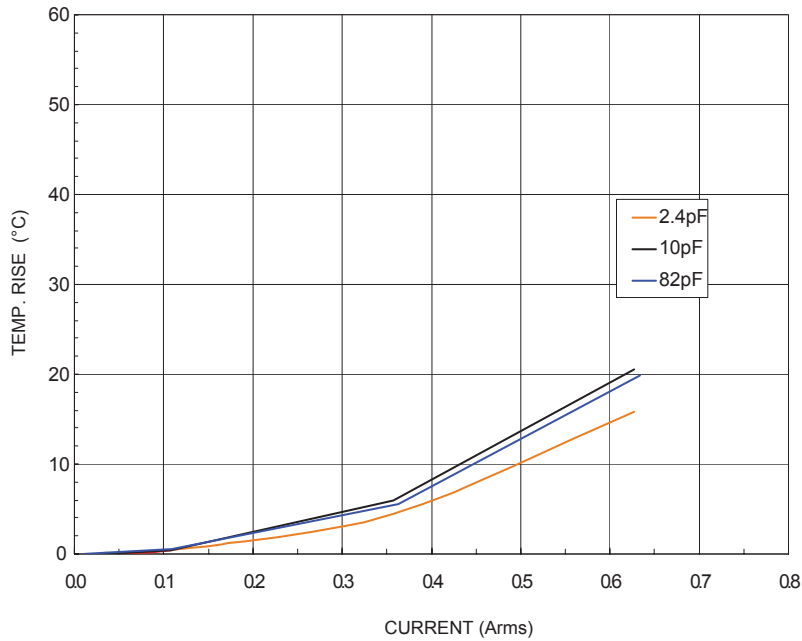


ERB Series

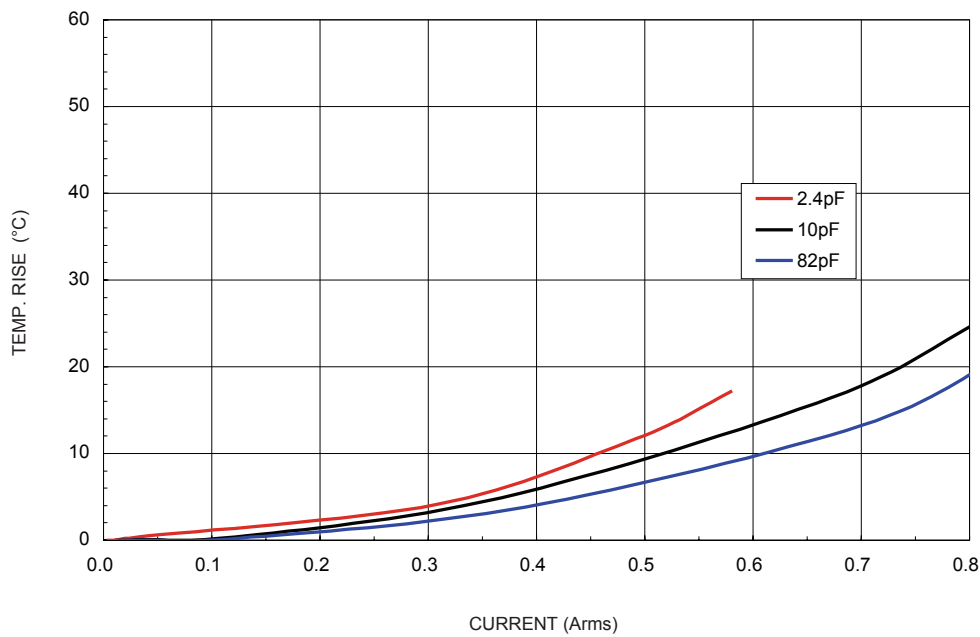
### ERB Technical Data (Typical)

### Temperature Rise - Current Characteristics

#### ERB18 Series (1GHz)



#### ERB21 Series (1GHz)

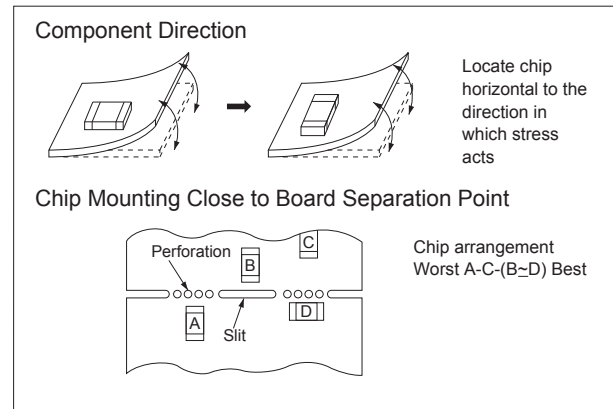


### ERB Soldering and Mounting

■ ⚠ Caution (Soldering and Mounting)

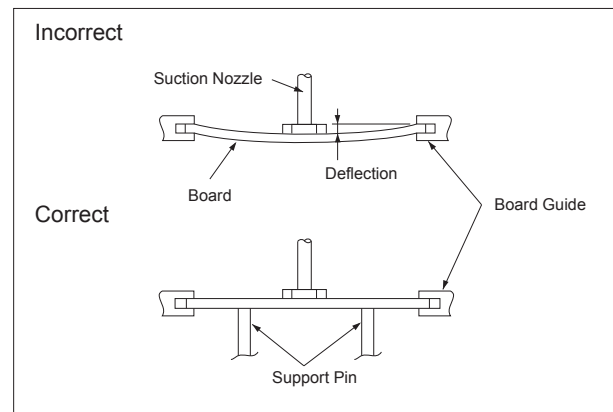
#### 1. Mounting Position

Choose a mounting position that minimizes the stress imposed on the chip during flexing or bending of the board.



#### 2. Chip Placing

- An excessively low bottom dead point of the suction nozzle imposes great force on the chip during mounting, causing cracked chips. So adjust the suction nozzle's bottom dead point by correcting warp in the board. Normally, the suction nozzle's bottom dead point must be set on the upper surface of the board. Nozzle pressure for chip mounting must be a 1 to 3N static load.
- Dirt particles and dust accumulated between the suction nozzle and the cylinder inner wall prevent the nozzle from moving smoothly. This imposes great force on the chip during mounting, causing cracked chips. And the locating claw, when worn out, imposes uneven forces on the chip when positioning, causing cracked chips. The suction nozzle and the locating claw must be maintained, checked and replaced periodically.



Continued on the following page.

### ERB Soldering and Mounting

#### 3. Reflow Soldering

- When sudden heat is applied to the components, the mechanical strength of the components should go down because remarkable temperature change causes deformity inside components. In order to prevent mechanical damage in the components, preheating should be required for both of the components and the PCB board. Preheating conditions are shown in Table 1. It is required to keep temperature differential between the soldering and the components surface ( $\Delta T$ ) as small as possible.
- Solderability of Tin plating termination chip might be deteriorated when low temperature soldering profile where peak solder temperature is below the Tin melting point is used. Please confirm the solderability of Tin plating termination chip before use.
- When components are immersed in solvent after mounting, be sure to maintain the temperature difference ( $\Delta T$ ) between the component and solvent within the range shown in the Table 1.

Table 1

| Part Number | Temperature Differential          |
|-------------|-----------------------------------|
| ERB18/21    | $\Delta T \leq 190^\circ\text{C}$ |
| ERB32       | $\Delta T \leq 130^\circ\text{C}$ |

#### Recommended Conditions

|                  | Pb-Sn Solder    |              | Lead Free Solder      |
|------------------|-----------------|--------------|-----------------------|
|                  | Infrared Reflow | Vapor Reflow |                       |
| Peak Temperature | 230-250°C       | 230-240°C    | 240-260°C             |
| Atmosphere       | Air             | Air          | Air or N <sub>2</sub> |

Pb-Sn Solder: Sn-37Pb

Lead Free Solder: Sn-3.0Ag-0.5Cu

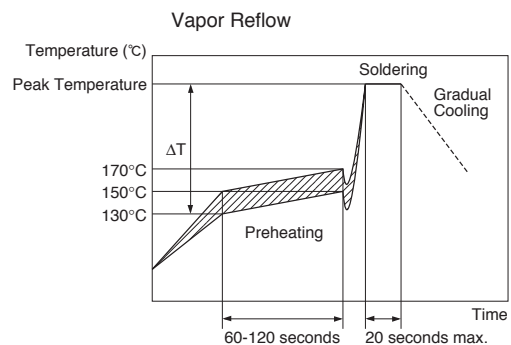
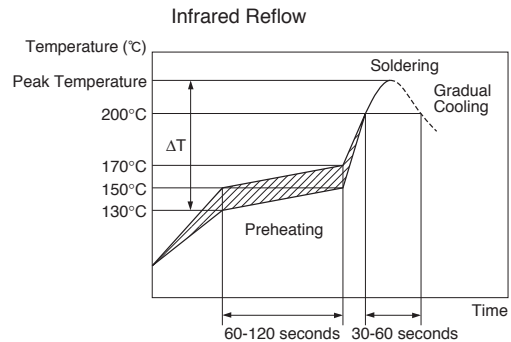
#### 4. Optimum Solder Amount for Reflow Soldering

- Overly thick application of solder paste results in excessive fillet height solder. This makes the chip more susceptible to mechanical and thermal stress on the board and may cause cracked chips.
- Too little solder paste results in a lack of adhesive strength on the outer electrode, which may result in chips breaking loose from the PCB.
- Make sure the solder has been applied smoothly to the end surface to a height of 0.2mm min.

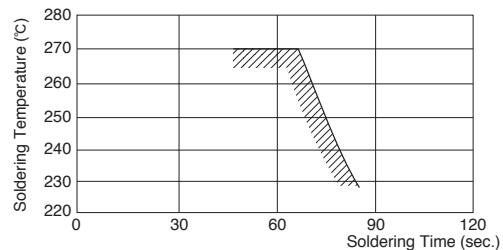
#### Inverting the PCB

Make sure not to impose an abnormal mechanical shock on the PCB.

#### Standard Conditions for Reflow Soldering

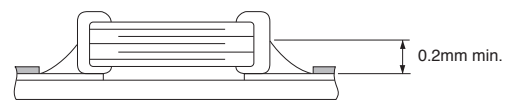


#### Allowable Soldering Temperature and Time



In case of repeated soldering, the accumulated soldering time must be within the range shown above.

#### Optimum Solder Amount for Reflow Soldering



Continued on the following page.

### ERB Soldering and Mounting

#### 5. Flow Soldering

- When sudden heat is applied to the components, the mechanical strength of the components should go down because remarkable temperature change causes deformity inside components. And an excessively long soldering time or high soldering temperature results in leaching of the outer electrodes, causing poor adhesion or a reduction in capacitance value due to loss of contact between electrodes and end termination.
- In order to prevent mechanical damage in the components, preheating should be required for the both components and the PCB board. Preheating conditions are shown in Table 2. It is required to keep temperature differential between the soldering and the components surface ( $\Delta T$ ) as small as possible. When components are immersed in solvent after mounting, be sure to maintain the temperature difference between the component and solvent within the range shown in Table 2. Do not apply flow soldering to chips not listed in Table 2.

Table 2

| Part Number | Temperature Differential          |
|-------------|-----------------------------------|
| ERB18/21    | $\Delta T \leq 150^\circ\text{C}$ |

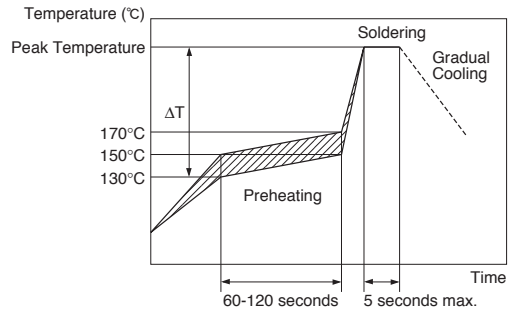
#### Recommended Conditions

|                  | Pb-Sn Solder | Lead Free Solder |
|------------------|--------------|------------------|
| Peak Temperature | 240-250°C    | 250-260°C        |
| Atmosphere       | Air          | N <sub>2</sub>   |

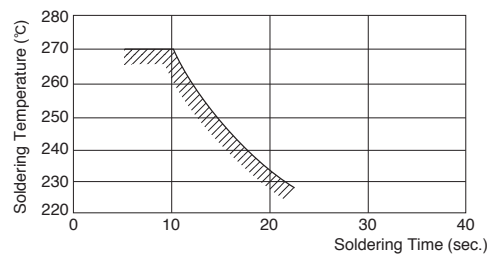
Pb-Sn Solder: Sn-37Pb  
Lead Free Solder: Sn-3.0Ag-0.5Cu

- Optimum Solder Amount for Flow Soldering  
The top of the solder fillet should be lower than the thickness of components. If the solder amount is excessively big, the risk of cracking is higher during board bending or under any other stressful conditions.

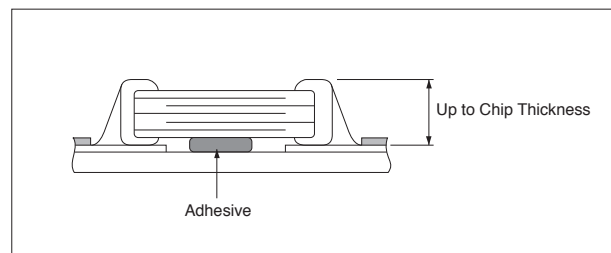
#### Standard Conditions for Flow Soldering



#### Allowable Soldering Temperature and Time



In case of repeated soldering, the accumulated soldering time must be within the range shown above.



Continued on the following page.

## ERB Soldering and Mounting

### 6. Correction with a Soldering Iron

#### (1) For Chip Type Capacitors

- When sudden heat is applied to the components by soldering iron, the mechanical strength of the components should go down because remarkable temperature change causes deformity inside components. In order to prevent mechanical damage in the components, preheating should be required for both of the components and the PCB board. Preheating conditions are shown in Table 3. It is required to keep temperature differential between the soldering and the components surface ( $\Delta T$ ) as small as possible. After soldering, it is not allowed to cool it down rapidly.

Table 3

| Part Number | Temperature Differential          | Peak Temperature                              | Atmosphere |
|-------------|-----------------------------------|---|------------|
| ERB18/21    | $\Delta T \leq 190^\circ\text{C}$ | 300°C max.<br>3 seconds max.<br>/ termination | Air        |
| ERB32       | $\Delta T \leq 130^\circ\text{C}$ | 270°C max.<br>3 seconds max.<br>/ termination | Air        |

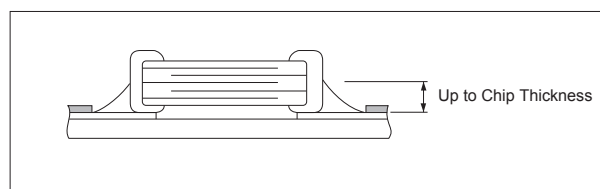
\*Applicable for both Pb-Sn and Lead Free Solder.

Pb-Sn Solder: Sn-37Pb

Lead Free Solder: Sn-3.0Ag-0.5Cu

- Optimum Solder Amount when Corrections Are Made Using a Soldering Iron

The top of the solder fillet should be lower than the thickness of components. If the solder amount is excessively big, the risk of cracking is higher during board bending or under any other stressful conditions. Soldering iron  $\phi 3\text{mm}$  or smaller should be required. And it is necessary to keep a distance between the soldering iron and the components without direct touch. Thread solder with  $\phi 0.5\text{mm}$  or smaller is required for soldering.



### 7. Washing

Excessive output of ultrasonic oscillation during cleaning causes PCBs to resonate, resulting in cracked chips or broken solder. Take note not to vibrate PCBs.

FAILURE TO FOLLOW THE ABOVE CAUTIONS MAY RESULT, WORST CASE, IN A SHORT CIRCUIT AND FUMING WHEN THE PRODUCT IS USED.

### ERB Design Engineering Kits

### CERAMIC CHIP CAPACITORS

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- 0603, 0805 and 1210 sizes
- Low Power Consumption for Mobile Telecommunication
- Base Station, Terminal applications, Wireless equipment and High frequency radio

- Miniature sizes & stable COG temperature coefficient
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- Base Station, Terminal applications, Wireless equipment and High frequency radio

#### ERB18-HIQ0603KIT-E 0603 - (250 VDC)

| No. | Description         | Murata Global P/N | Qty. |
|-----|---------------------|-------------------|------|
| 1   | 0603/COG/1.0pF/250V | ERB1885C2E1R0BDX1 | 10   |
| 2   | 0603/COG/1.1pF/250V | ERB1885C2E1R1BDX1 | 10   |
| 3   | 0603/COG/1.2pF/250V | ERB1885C2E1R2BDX1 | 10   |
| 4   | 0603/COG/1.3pF/250V | ERB1885C2E1R3BDX1 | 10   |
| 5   | 0603/COG/1.5pF/250V | ERB1885C2E1R5BDX1 | 10   |
| 6   | 0603/COG/1.6pF/250V | ERB1885C2E1R6BDX1 | 10   |
| 7   | 0603/COG/1.8pF/250V | ERB1885C2E1R8BDX1 | 10   |
| 8   | 0603/COG/2.0pF/250V | ERB1885C2E2R0BDX1 | 10   |
| 9   | 0603/COG/2.4pF/250V | ERB1885C2E2R4BDX1 | 10   |
| 10  | 0603/COG/2.7pF/250V | ERB1885C2E2R7BDX1 | 10   |
| 11  | 0603/COG/3.0pF/250V | ERB1885C2E3R0CDX1 | 10   |
| 12  | 0603/COG/3.3pF/250V | ERB1885C2E3R3CDX1 | 10   |
| 13  | 0603/COG/3.6pF/250V | ERB1885C2E3R6CDX1 | 10   |
| 14  | 0603/COG/3.9pF/250V | ERB1885C2E3R9CDX1 | 10   |
| 15  | 0603/COG/4.3pF/250V | ERB1885C2E4R3CDX1 | 10   |
| 16  | 0603/COG/4.7pF/250V | ERB1885C2E4R7CDX1 | 10   |
| 17  | 0603/COG/5.1pF/250V | ERB1885C2E5R1CDX1 | 10   |
| 18  | 0603/COG/5.6pF/250V | ERB1885C2E5R6CDX1 | 10   |
| 19  | 0603/COG/6.2pF/250V | ERB1885C2E6R2CDX1 | 10   |
| 20  | 0603/COG/6.8pF/250V | ERB1885C2E6R8CDX1 | 10   |
| 21  | 0603/COG/7.5pF/250V | ERB1885C2E7R5CDX5 | 10   |
| 22  | 0603/COG/8.2pF/250V | ERB1885C2E8R2CDX5 | 10   |
| 23  | 0603/COG/9.1pF/250V | ERB1885C2E9R1CDX5 | 10   |
| 24  | 0603/COG/10pF/250V  | ERB1885C2E100JDX5 | 10   |
| 25  | 0603/COG/12pF/250V  | ERB1885C2E120JDX5 | 10   |
| 26  | 0603/COG/15pF/250V  | ERB1885C2E150JDX5 | 10   |
| 27  | 0603/COG/18pF/250V  | ERB1885C2E180JDX5 | 10   |
| 28  | 0603/COG/22pF/250V  | ERB1885C2E220JDX5 | 10   |
| 29  | 0603/COG/27pF/250V  | ERB1885C2E270JDX5 | 10   |
| 30  | 0603/COG/33pF/250V  | ERB1885C2E330JDX5 | 10   |
| 31  | 0603/COG/39pF/250V  | ERB1885C2E390JDX5 | 10   |
| 32  | 0603/COG/47pF/250V  | ERB1885C2E470JDX5 | 10   |
| 33  | 0603/COG/56pF/250V  | ERB1885C2E560JDX5 | 10   |
| 34  | 0603/COG/68pF/250V  | ERB1885C2E680JDX5 | 10   |
| 35  | 0603/COG/82pF/250V  | ERB1885C2E820JDX5 | 10   |
| 36  | 0603/COG/100pF/250V | ERB1885C2E101JDX5 | 10   |

#### ERB21-HIQ0805KIT-E 0805 - (250VDC)

| No. | Description         | Murata Global P/N  | Qty. |
|-----|---------------------|--------------------|------|
| 1   | 0805/COG/1.2pF/250V | ERB21 B5C2E1R2CDX1 | 10   |
| 2   | 0805/COG/1.5pF/250V | ERB21 B5C2E1R5CDX1 | 10   |
| 3   | 0805/COG/1.8pF/250V | ERB21 B5C2E1R8CDX1 | 10   |
| 4   | 0805/COG/2.2pF/250V | ERB21B5C2E2R2CDX1  | 10   |
| 5   | 0805/COG/2.7pF/250V | ERB21B5C2E2R7CDX1  | 10   |
| 6   | 0805/COG/3.3pF/250V | ERB21B5C2E3R3CDX1  | 10   |
| 7   | 0805/COG/3.9pF/250V | ERB21B5C2E3R9CDX1  | 10   |
| 8   | 0805/COG/4.7pF/250V | ERB21B5C2E4R7CDX1  | 10   |
| 9   | 0805/COG/5.6pF/250V | ERB21B5C2E5R6DDX1  | 10   |
| 10  | 0805/COG/6.8pF/250V | ERB21B5C2E6R8DDX1  | 10   |
| 11  | 0805/COG/8.2pF/250V | ERB82185C2E8R2DDX1 | 10   |
| 12  | 0805/COG/10pF/250V  | ERB21B5C2E100JDX1  | 10   |
| 13  | 0805/COG/12pF/250V  | ERB21B5C2E120JDX1  | 10   |
| 14  | 0805/COG/15pF/250V  | ERB21B5C2E150JDX1  | 10   |
| 15  | 0805/COG/18pF/250V  | ERB21B5C2E180JDX1  | 10   |
| 16  | 0805/COG/22pF/250V  | ERB21B5C2E220JDX1  | 10   |
| 17  | 0805/COG/27pF/250V  | ERB21B5C2E270JDX1  | 10   |
| 18  | 0805/COG/33pF/250V  | ERB21B5C2E330JDX1  | 10   |
| 19  | 0805/COG/39pF/250V  | ERB21B5C2E390JDX1  | 10   |
| 20  | 0805/COG/47pF/250V  | ERB21B5C2E470JDX1  | 10   |
| 21  | 0805/COG/56pF/250V  | ERB21B5C2E560JDX1  | 10   |
| 22  | 0805/COG/68pF/250V  | ERB21B5C2E680JDX1  | 10   |
| 23  | 0805/COG/82pF/250V  | ERB21B5C2E820JDX1  | 10   |
| 24  | 0805/COG/100pF/250V | ERB21B5C2E101JDX1  | 10   |

#### ERB32-HIQ1210KIT-E 1210 - (500VDC)

| No. | Description         | Murata Global P/N | Qty. |
|-----|---------------------|-------------------|------|
| 1   | 1210/COG/3.3pF/500V | ERB32Q5C2H3R3CDX1 | 10   |
| 2   | 1210/COG/3.9pF/500V | ERB32Q5C2H3R9CDX1 | 10   |
| 3   | 1210/COG/4.7pF/500V | ERB32Q5C2H4R7CDX1 | 10   |
| 4   | 1210/COG/5.6pF/500V | ERB32Q5C2H5R6DDX1 | 10   |
| 5   | 1210/COG/6.8pF/500V | ERB32Q5C2H6R8DDX1 | 10   |
| 6   | 1210/COG/8.2pF/500V | ERB32Q5C2H8R2DDX1 | 10   |
| 7   | 1210/COG/10pF/500V  | ERB32Q5C2H100JDX1 | 10   |
| 8   | 1210/COG/12pF/500V  | ERB32Q5C2H120JDX1 | 10   |
| 9   | 1210/COG/15pF/500V  | ERB32Q5C2H150JDX1 | 10   |
| 10  | 1210/COG/18pF/500V  | ERB32Q5C2H180JDX1 | 10   |
| 11  | 1210/COG/22pF/500V  | ERB32Q5C2H220JDX1 | 10   |
| 12  | 1210/COG/27pF/500V  | ERB32Q5C2H270JDX1 | 10   |
| 13  | 1210/COG/33pF/500V  | ERB32Q5C2H330JDX1 | 10   |
| 14  | 1210/COG/39pF/500V  | ERB32Q5C2H390JDX1 | 10   |
| 15  | 1210/COG/47pF/500V  | ERB32Q5C2H470JDX1 | 10   |
| 16  | 1210/COG/56pF/500V  | ERB32Q5C2H560JDX1 | 10   |
| 17  | 1210/COG/68pF/500V  | ERB32Q5C2H680JDX1 | 10   |
| 18  | 1210/COG/82pF/500V  | ERB32Q5C2H820JDX1 | 10   |
| 19  | 1210/COG/100pF/500V | ERB32Q5C2H101JDX1 | 10   |

### ERB Notes

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