

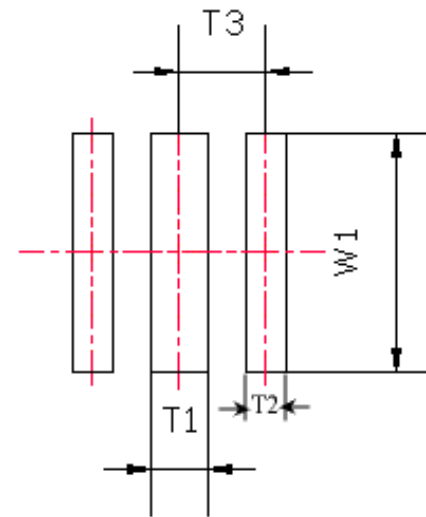
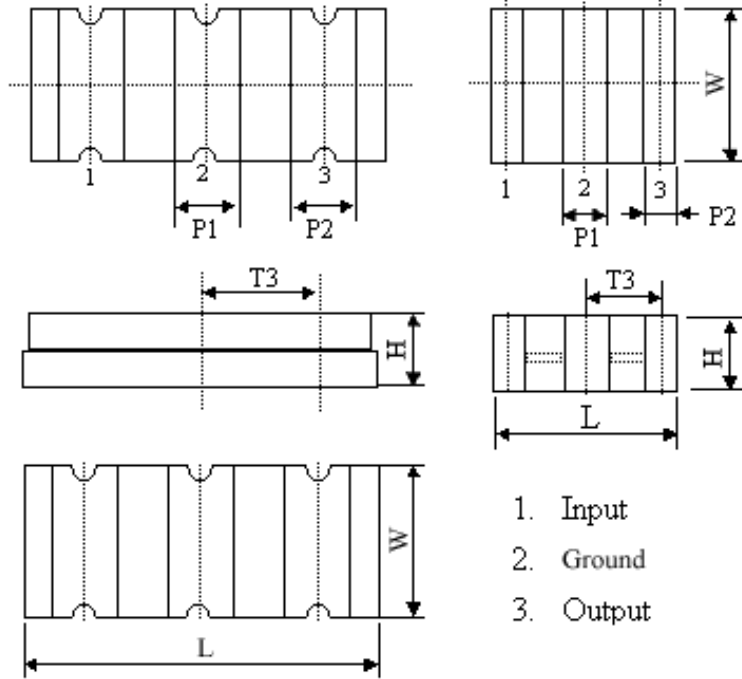
HIGH TEMPERATURE SMD CERAMIC RESONATORS**ZTACC/CS/CV_H series without built-in capacitors****ZTTCC/CS/CV_H series with built-in capacitors****Temperature Range : -40°C ~ 125°C****U.S.Electronics Inc.****Ph: (314)423 7550****Fax: (314) 423 0585****FEATURES**

- High temperature withstanding ceramic case,available in wide frequency range
- Rectangular shape allows easy pick and placement
- Small & low profile less than 2.0mm height max
- Reflow Solderable

**TECHNICAL CHARACTERISTICS:****ZTACC/CS/CV_H series without built-in capacitors****ZTTCC/CS/CV_H series with built-in capacitors**

| Part Number | Freq. Range (MHz) | Freq. Accuracy at 25°C (%) | Stability In Temp. -40°C~+125°C | Aging For Ten Yrs(%) | Equivalent Murata Series |
|--------------|-------------------|----------------------------|---------------------------------|----------------------|--------------------------|
| ZTACC MGH | 2.00 ~ 6.99 | ± 0.5 | ± 0.5% | ± 0.3 | CSACC MG |
| ZTACS/CV MTH | 7.00 ~13.00 | ± 0.5 | ± 0.5% | ± 0.3 | CSACV MT |
| ZTACS/CV MXH | 13.01~50.00 | ± 0.5 | ± 0.5% | ± 0.3 | CSACV MX |

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|--------------|-------------------|----------------------------|----------------------------------|----------------------|--------------------------|
| ZTTCC MGH | 2.00 ~ 6.99 | ± 0.5 | ± 0.5% | ± 0.3 | CSTCC MG |
| ZTTCS/CV MTH | 7.00~13.00 | ± 0.5 | ± 0.5% | ± 0.3 | CSTCV MT |
| ZTTCS/CV MXH | 13.01~50.00 | ± 0.5 | ± 0.5% | ± 0.3 | CSTCV MX |

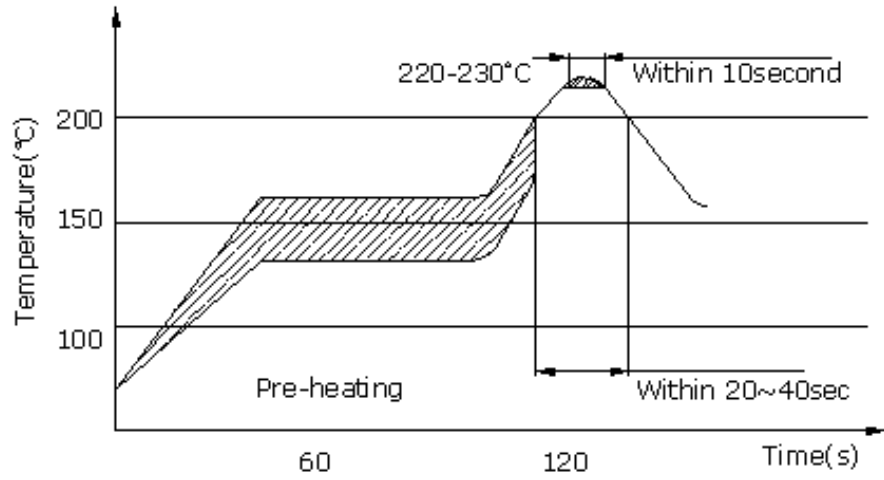
DIMENSIONS:(No middle terminal for ZTACC series.)**ZTCC MGH/ZTACC MGH** **ZTCS/CV MTH/MXH** / **ZTACS/CV MTH/MXH****LAND PATTERN:****ZTACC/CV/CS_H DIMENSIONS (Unit: mm)**

| Part Number | Dimensions | | | | | | | |
|---------------|------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|
| | L | W | H | P2 | T1 | T2 | T3 | W1 |
| ZTACC MGH | 7.4 ± 0.3 | 3.4 ± 0.3 | 1.8 ± 0.3 | 1.2 ± 0.3 | 1.5 ± 0.3 | 1.3 ± 0.3 | 2.5 ± 0.3 | 4.0 ± 0.3 |
| ZTACS MTH/MXH | 4.7 ± 0.2 | 4.1 ± 0.2 | 1.6 ± 0.3 | 0.8 ± 0.4 | 1.3 ± 0.2 | 0.8 ± 0.2 | 1.95 ± 0.2 | 5.1 ± 0.2 |
| ZTACV MTH/MXH | 3.7 ± 0.2 | 3.1 ± 0.2 | 1.2 ± 0.3 | 0.7 ± 0.3 | 1.0 ± 0.2 | 0.7 ± 0.2 | 1.5 ± 0.2 | 4.1 ± 0.2 |

ZTCC/CV/CS_H DIMENSIONS (Unit: mm)

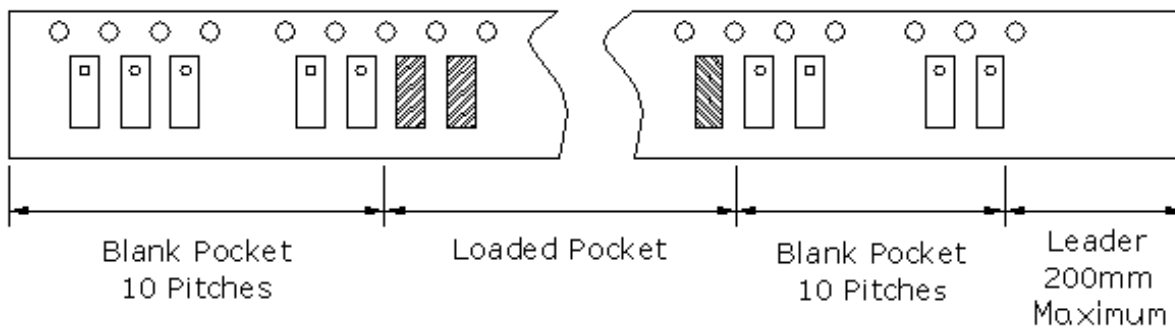
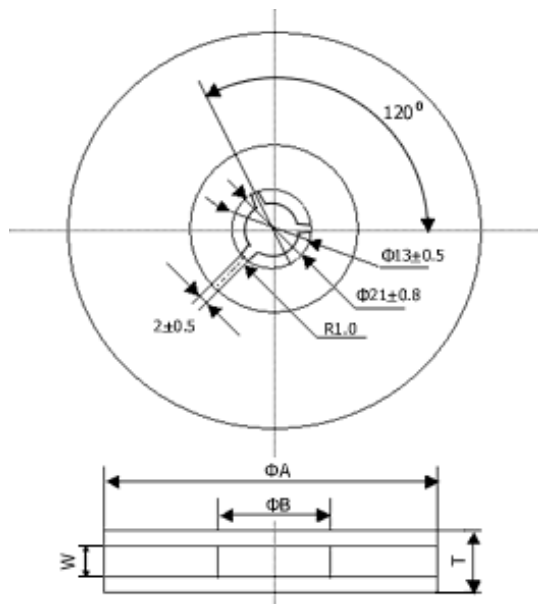
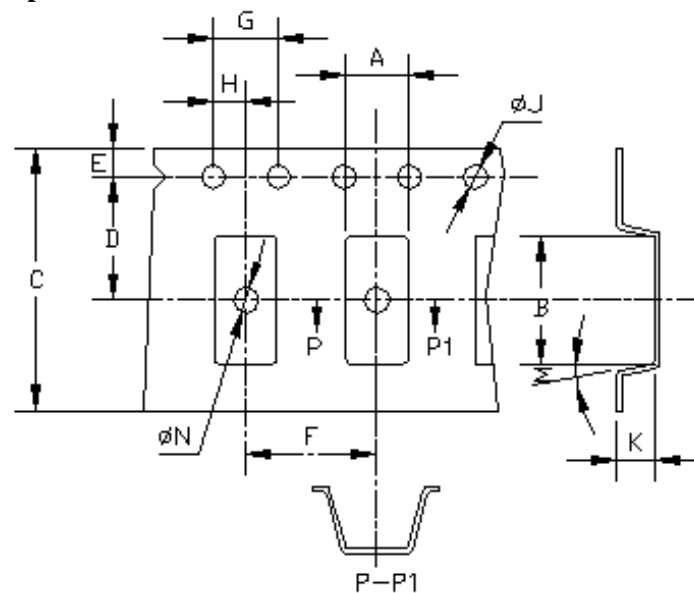
| Part Number | Dimensions | | | | | | | | |
|---------------|------------|-----------|-----------|-----------|-----------|-----------|-----------|------------|-----------|
| | L | W | H | P1 | P2 | T1 | T2 | T3 | W1 |
| ZTCC MGH | 7.4 ± 0.3 | 3.4 ± 0.3 | 1.8 ± 0.3 | 1.2 ± 0.3 | 1.2 ± 0.3 | 1.5 ± 0.3 | 1.3 ± 0.3 | 2.5 ± 0.3 | 4.0 ± 0.3 |
| ZTCS MTH/MXH | 4.7 ± 0.2 | 4.1 ± 0.2 | 1.6 ± 0.3 | 1.0 ± 0.4 | 0.8 ± 0.4 | 1.3 ± 0.2 | 0.8 ± 0.2 | 1.95 ± 0.2 | 5.1 ± 0.2 |
| ZTCCV MTH/MXH | 3.7 ± 0.2 | 3.1 ± 0.2 | 1.2 ± 0.3 | 0.9 ± 0.3 | 0.7 ± 0.3 | 1.0 ± 0.2 | 0.7 ± 0.2 | 1.5 ± 0.2 | 4.1 ± 0.2 |

RECOMMENDED REFLOW SOLDERING: [Tape & Reel Dimensions](#)(click here)



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**Packaging Method:****Reel****Tape**

Reel Dimensions(mm)

| A | B | W | T | Pieces per reel | Carrier tape size |
|-------|--------|----------|---------|-----------------|-------------------|
| 179±2 | 60 typ | 12.4 min | 19.4max | 1000typ. | 12 |
| 179±2 | 60 typ | 16.4 min | 22.4max | 1000typ. | 16 |
| 330±3 | 80 min | 12.4 min | 19.4max | 4000typ. | 12 |
| 330±3 | 80 min | 16.4 min | 22.4max | 4000typ. | 16 |

Tape Dimensions(mm)

| Code / Tolerance | A±0.2 | B±0.2 | C±0.3 | D±0.1 | E±0.1 | F±0.1 | G±0.1 | H±0.1 | J±0.1 | N±0.1 | Mmax | Rmax | K±0.2 | T±0.1 |
|--------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|
| Series Number | | | | | | | | | | | | | | |
| ZTACC MGH ZTTCC MGH | 3.8 | 7.8 | 16.0 | 7.5 | | | | | | | | | 2.1 | |
| ZTACS MTH/MXH ZTTCS MTH/MXH | 5.0 | 4.4 | 12.0 | 5.5 | 1.75 | 8.0 | 4.0 | 2.0 | 1.5 | 1.6 | 10° | 0.3 | 1.8 | 0.3 |
| ZTACV MTH/MXH ZTTCV MTH/MXH | 3.4 | 4.0 | 12.0 | 5.5 | | | | | | | | | 1.3 | |