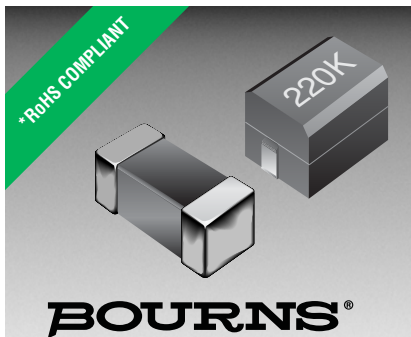




## Features

- High resistance to heat and humidity
- Resistance to mechanical shock and pressure
- Accurate dimensions for automatic surface mounting
- Wide inductance range (1.0 nH to 1000  $\mu$ H)
- RoHS compliant\*



The CM10 & CM16 series are currently available but not recommended for new designs. The **C100505**, **C160808**, **CW100505** and **CW160808** are possible alternatives.

## CM45, CM16, CM10 SMT Chip Inductors

### General Specifications

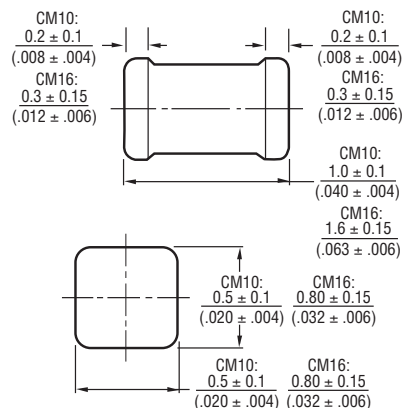
|                              |                   |
|------------------------------|-------------------|
| Temperature Rise             |                   |
| CM10, CM16, CM45             | 20 °C max.        |
| Ambient Temperature          |                   |
| CM10, CM16                   | 80 °C max.        |
| CM45                         | 100 °C max.       |
| Operating Temperature        |                   |
| CM10, CM16                   | -40 °C to +100 °C |
| CM45                         | -40 °C to +125 °C |
| Storage Temperature          |                   |
| CM10, CM16                   | -40 °C to +100 °C |
| CM45                         | -40 °C to +125 °C |
| Resistance to Soldering Heat | 260 °C, 5 seconds |

### Materials

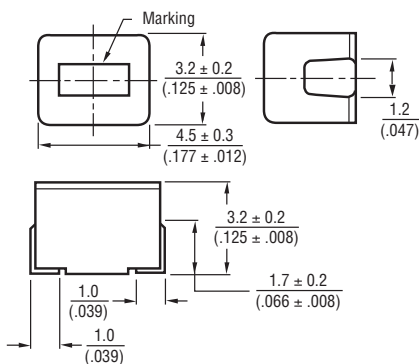
|               |                 |
|---------------|-----------------|
| Core Material |                 |
| CM10, CM16    | Alumina ceramic |
| CM45          | Ferrite Core    |
| Coil Type     |                 |
| CM10, CM16    | Copper plating  |
| CM45          | Copper wire     |
| Enclosure     |                 |
| CM10, CM16    | Resin           |
| CM45          | Epoxy resin     |
| Terminal      | Sn              |

### Product Dimensions

#### CM100505, CM160808

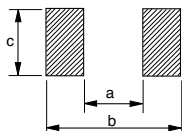


#### CM453232



DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

### Recommended Land Pattern Dimensions



| Series | a                         | b                         | c                         |
|--------|---------------------------|---------------------------|---------------------------|
| CM10   | 0.5 to 0.6 (.019 to .023) | 1.5 to 1.7 (.059 to .067) | 0.5 to 0.6 (.019 to .023) |
| CM16   | 0.8 to 1.0 (.032 to .039) | 2.0 to 2.6 (.079 to .102) | 0.7 to 0.9 (.028 to .035) |
| CM45   | 2.0 to 2.4 (.079 to .094) | 5.0 to 5.3 (.197 to .209) | 1.4 to 1.7 (.055 to .067) |

\*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.

Specifications are subject to change without notice.

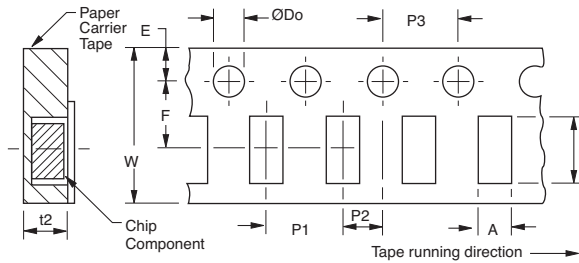
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

# CM45, CM16, CM10 SMT Chip Inductors

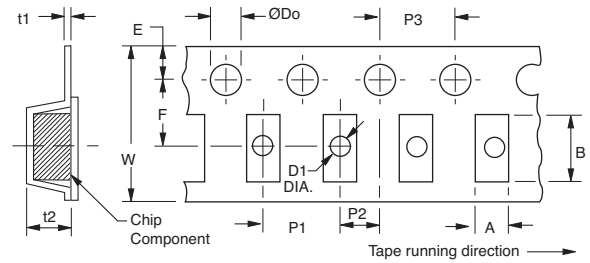
**BOURNS®**

## Packaging Specifications

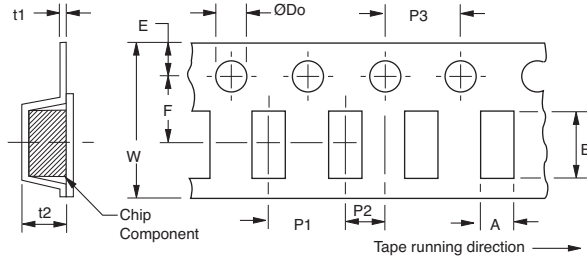
**CM100505**



**CM160808**



**CM453232**



DIMENSIONS:  $\frac{\text{MM}}{(\text{INCHES})}$

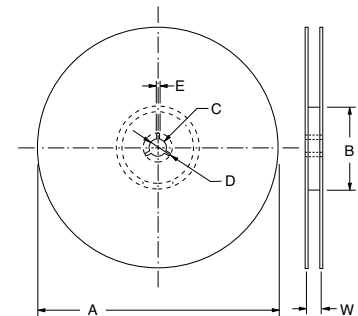
| Series | A           | B           | W            | F           | E           | P1          | P2          | P3          | D0 Dia.     | D1 Dia.     | t1          | t2          |
|--------|-------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| CM10   | 0.71 (.027) | 1.21 (.047) | 8.00 (.315)  | 3.50 (.138) | 1.75 (.069) | 4.00 (.157) | 2.00 (.079) | 4.00 (.157) | 1.50 (.059) | --          | --          | 0.66 (.026) |
| CM16   | 1.00 (.039) | 1.80 (.071) | 8.00 (.315)  | 3.50 (.138) | 1.75 (.069) | 4.00 (.157) | 2.00 (.079) | 4.00 (.157) | 1.50 (.059) | 0.60 (.024) | 0.27 (.011) | 1.20 (.047) |
| CM45   | 3.60 (.142) | 4.90 (.193) | 12.00 (.472) | 5.50 (.217) | 1.75 (.069) | 8.00 (.315) | 2.00 (.079) | 4.00 (.157) | 1.50 (.059) | 1.00 (.039) | 0.25 (.010) | 3.50 (.138) |

## Reel Dimensions

| Series     | A           | B       | C         | D         | E        | W         |
|------------|-------------|---------|-----------|-----------|----------|-----------|
| CM10, CM16 | 178 (7.008) | 60 min. | 13 (.512) | 21 (.827) | 2 (.079) | 9 (.354)  |
| CM45       |             |         |           |           |          | 13 (.512) |

## Packaging

| Series | Quantity    | Weight |
|--------|-------------|--------|
| CM10   | 10,000 pcs. | 150 g  |
| CM16   | 3,000 pcs.  | 90 g   |
| CM45   | 500 pcs.    | 100 g  |



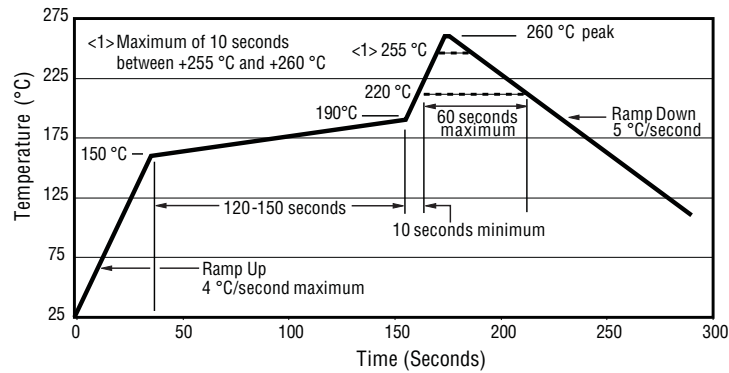
Specifications are subject to change without notice.  
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## CM45, CM16, CM10 SMT Chip Inductors

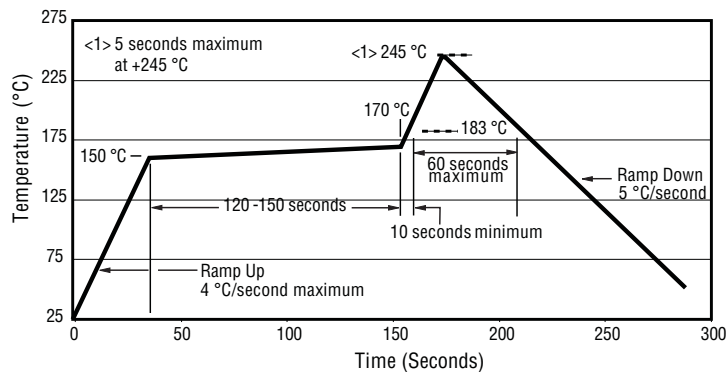
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### Soldering Profiles

#### CM100505, CM160808



#### CM453232



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# CM45, CM16, CM10 SMT Chip Inductors

**BOURNS®**

| RoHS Compliant<br>0402 Size<br>Part Number | Inductance<br>nH | Tolerance | Q<br>min. | Test Frequency<br>MHz | SRF min.<br>MHz | RDC<br>ohm max | IDC<br>mA max |
|--------------------------------------------|------------------|-----------|-----------|-----------------------|-----------------|----------------|---------------|
| CM100505-1N0DL                             | 1.00             | ±0.3 nH   | 8         | 100                   | 6000            | 0.05           | 400           |
| CM100505-1N2DL                             | 1.20             | ±0.3 nH   | 8         | 100                   | 6000            | 0.06           | 400           |
| CM100505-1N5DL                             | 1.50             | ±0.3 nH   | 8         | 100                   | 6000            | 0.07           | 400           |
| CM100505-1N8DL                             | 1.80             | ±0.3 nH   | 8         | 100                   | 6000            | 0.08           | 400           |
| CM100505-2N2DL                             | 2.20             | ±0.3 nH   | 8         | 100                   | 6000            | 0.09           | 400           |
| CM100505-2N7DL                             | 2.70             | ±0.3 nH   | 8         | 100                   | 5500            | 0.10           | 400           |
| CM100505-3N3DL                             | 3.30             | ±0.3 nH   | 8         | 100                   | 5500            | 0.12           | 400           |
| CM100505-3N9DL                             | 3.90             | ±0.3 nH   | 8         | 100                   | 5200            | 0.15           | 360           |
| CM100505-4N7DL                             | 4.70             | ±0.3 nH   | 8         | 100                   | 4800            | 0.17           | 360           |
| CM100505-5N6DL                             | 5.60             | ±0.3 nH   | 8         | 100                   | 4600            | 0.19           | 340           |
| CM100505-6N8JL                             | 6.80             | ± 5 %     | 8         | 100                   | 4000            | 0.30           | 320           |
| CM100505-8N2JL                             | 8.20             | ± 5 %     | 8         | 100                   | 3500            | 0.35           | 320           |
| CM100505-10NJL                             | 10.00            | ± 5 %     | 8         | 100                   | 2800            | 0.41           | 320           |
| CM100505-12NJL                             | 12.00            | ± 5 %     | 8         | 100                   | 2800            | 0.45           | 320           |
| CM100505-15NJL                             | 15.00            | ± 5 %     | 8         | 100                   | 2500            | 0.60           | 240           |
| CM100505-18NJL                             | 18.00            | ± 5 %     | 8         | 100                   | 2200            | 0.70           | 240           |
| CM100505-22NJL                             | 22.00            | ± 5 %     | 8         | 100                   | 2000            | 0.80           | 200           |
| CM100505-27NJL                             | 27.00            | ± 5 %     | 8         | 100                   | 1800            | 1.2            | 200           |
| CM100505-33NJL                             | 33.00            | ± 5 %     | 8         | 100                   | 1800            | 1.4            | 170           |
| CM100505-39NJL                             | 39.00            | ± 5 %     | 8         | 100                   | 1800            | 1.7            | 150           |
| CM100505-47NJL                             | 47.00            | ± 5 %     | 8         | 100                   | 1800            | 2.1            | 140           |
| CM100505-56NJL                             | 56.00            | ± 5 %     | 8         | 100                   | 1500            | 2.5            | 130           |
| CM100505-68NJL                             | 68.00            | ± 5 %     | 8         | 100                   | 1500            | 4.0            | 120           |
| CM100505-82NJL                             | 82.00            | ± 5 %     | 8         | 100                   | 1400            | 4.5            | 110           |
| CM100505-R10JL                             | 100.00           | ± 5 %     | 8         | 100                   | 1200            | 5.5            | 90            |

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# CM45, CM16, CM10 SMT Chip Inductors

**BOURNS®**

| RoHS Compliant<br>0603 Size<br>Part Number | Inductance<br>nH | Tolerance | Q<br>min. | Test Frequency<br>MHz | SRF min.<br>MHz | RDC<br>ohm max | IDC<br>mA max |
|--------------------------------------------|------------------|-----------|-----------|-----------------------|-----------------|----------------|---------------|
| CM160808-1N5DL                             | 1.5              | ± 0.3 nH  | 8         | 100                   | 6000            | 0.07           | 500           |
| CM160808-1N8DL                             | 1.8              | ± 0.3 nH  | 8         | 100                   | 6000            | 0.08           | 500           |
| CM160808-2N2DL                             | 2.2              | ± 0.3 nH  | 8         | 100                   | 6000            | 0.09           | 500           |
| CM160808-2N7DL                             | 2.7              | ± 0.3 nH  | 8         | 100                   | 6000            | 0.10           | 500           |
| CM160808-3N3DL                             | 3.3              | ± 0.3 nH  | 9         | 100                   | 5500            | 0.12           | 500           |
| CM160808-3N9JL                             | 3.9              | ±5 %      | 9         | 100                   | 5500            | 0.15           | 450           |
| CM160808-4N7JL                             | 4.7              | ±5 %      | 9         | 100                   | 4800            | 0.17           | 450           |
| CM160808-5N6JL                             | 5.6              | ±5 %      | 9         | 100                   | 4600            | 0.18           | 430           |
| CM160808-6N8JL                             | 6.8              | ±5 %      | 9         | 100                   | 3550            | 0.20           | 430           |
| CM160808-8N2JL                             | 8.2              | ±5 %      | 9         | 100                   | 3500            | 0.28           | 400           |
| CM160808-10NJL                             | 10               | ±5 %      | 10        | 100                   | 2800            | 0.32           | 400           |
| CM160808-12NJL                             | 12               | ±5 %      | 10        | 100                   | 2800            | 0.35           | 400           |
| CM160808-15NJL                             | 15               | ±5 %      | 10        | 100                   | 2500            | 0.41           | 350           |
| CM160808-18NJL                             | 18               | ±5 %      | 10        | 100                   | 2300            | 0.45           | 350           |
| CM160808-22NJL                             | 22               | ±5 %      | 10        | 100                   | 2000            | 0.50           | 300           |
| CM160808-27NJL                             | 27               | ±5 %      | 10        | 100                   | 2000            | 0.55           | 300           |
| CM160808-33NJL                             | 33               | ±5 %      | 10        | 100                   | 1800            | 0.60           | 300           |
| CM160808-39NJL                             | 39               | ±5 %      | 11        | 100                   | 1800            | 0.80           | 300           |
| CM160808-47NJL                             | 47               | ±5 %      | 11        | 100                   | 1800            | 0.95           | 250           |
| CM160808-56NJL                             | 56               | ±5 %      | 12        | 100                   | 1800            | 1.2            | 250           |
| CM160808-68NJL                             | 68               | ±5 %      | 12        | 100                   | 1500            | 1.3            | 250           |
| CM160808-82NJL                             | 82               | ±5 %      | 12        | 100                   | 1500            | 1.5            | 250           |
| CM160808-R10JL                             | 100              | ±5 %      | 12        | 100                   | 1300            | 1.8            | 200           |
| CM160808-R12JL                             | 120              | ±5 %      | 5         | 25.2                  | 1200            | 3.0            | 130           |
| CM160808-R15JL                             | 150              | ±5 %      | 5         | 25.2                  | 1100            | 4.5            | 100           |
| CM160808-R18JL                             | 180              | ±5 %      | 4         | 25.2                  | 1000            | 6.5            | 80            |
| CM160808-R22JL                             | 220              | ±5 %      | 4         | 25.2                  | 900             | 7.5            | 70            |

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# CM45, CM16, CM10 SMT Chip Inductors

**BOURNS®**

| RoHS Compliant<br>1812 Size<br>Part Number | Inductance<br>μH | Std.<br>Tolerance | Std. Tol.<br>Code | 1/2<br>Tolerance | 1/2 Tol.<br>Code | Q<br>min. | Test Freq.<br>MHz | SRF min.<br>MHz | RDC<br>ohm max | IDC<br>mA max |
|--------------------------------------------|------------------|-------------------|-------------------|------------------|------------------|-----------|-------------------|-----------------|----------------|---------------|
| CM453232-R10<1>L                           | 0.10             | ±20 %             | M                 | ±10 %            | K                | 35        | 25.2              | 300             | 0.18           | 800           |
| CM453232-R12<1>L                           | 0.12             | ±20 %             | M                 | ±10 %            | K                | 35        | 25.2              | 280             | 0.2            | 770           |
| CM453232-R15<1>L                           | 0.15             | ±20 %             | M                 | ±10 %            | K                | 35        | 25.2              | 250             | 0.22           | 730           |
| CM453232-R18<1>L                           | 0.18             | ±20 %             | M                 | ±10 %            | K                | 35        | 25.2              | 220             | 0.24           | 700           |
| CM453232-R22<1>L                           | 0.22             | ±20 %             | M                 | ±10 %            | K                | 40        | 25.2              | 200             | 0.25           | 665           |
| CM453232-R27<1>L                           | 0.27             | ±20 %             | M                 | ±10 %            | K                | 40        | 25.2              | 180             | 0.26           | 635           |
| CM453232-R33<1>L                           | 0.33             | ±20 %             | M                 | ±10 %            | K                | 40        | 25.2              | 165             | 0.28           | 605           |
| CM453232-R39<1>L                           | 0.39             | ±20 %             | M                 | ±10 %            | K                | 40        | 25.2              | 150             | 0.30           | 575           |
| CM453232-R47<1>L                           | 0.47             | ±20 %             | M                 | ±10 %            | K                | 40        | 25.2              | 145             | 0.32           | 545           |
| CM453232-R56<1>L                           | 0.56             | ±20 %             | M                 | ±10 %            | K                | 40        | 25.2              | 140             | 0.36           | 520           |
| CM453232-R68<1>L                           | 0.68             | ±20 %             | M                 | ±10 %            | K                | 40        | 25.2              | 135             | 0.40           | 500           |
| CM453232-R82<1>L                           | 0.82             | ±20 %             | M                 | ±10 %            | K                | 40        | 25.2              | 130             | 0.45           | 475           |
| CM453232-1R0<1>L                           | 1.0              | ±10 %             | K                 | ±5 %             | J                | 50        | 7.96              | 100             | 0.50           | 450           |
| CM453232-1R2<1>L                           | 1.2              | ±10 %             | K                 | ±5 %             | J                | 50        | 7.96              | 80              | 0.55           | 430           |
| CM453232-1R5<1>L                           | 1.5              | ±10 %             | K                 | ±5 %             | J                | 50        | 7.96              | 70              | 0.60           | 410           |
| CM453232-1R8<1>L                           | 1.8              | ±10 %             | K                 | ±5 %             | J                | 50        | 7.96              | 60              | 0.65           | 390           |
| CM453232-2R2<1>L                           | 2.2              | ±10 %             | K                 | ±5 %             | J                | 50        | 7.96              | 55              | 0.70           | 380           |
| CM453232-2R7<1>L                           | 2.7              | ±10 %             | K                 | ±5 %             | J                | 50        | 7.96              | 50              | 0.75           | 370           |
| CM453232-3R3<1>L                           | 3.3              | ±10 %             | K                 | ±5 %             | J                | 50        | 7.96              | 45              | 0.80           | 355           |
| CM453232-3R9<1>L                           | 3.9              | ±10 %             | K                 | ±5 %             | J                | 50        | 7.96              | 40              | 0.90           | 330           |
| CM453232-4R7<1>L                           | 4.7              | ±10 %             | K                 | ±5 %             | J                | 50        | 7.96              | 35              | 1.00           | 315           |
| CM453232-5R6<1>L                           | 5.6              | ±10 %             | K                 | ±5 %             | J                | 50        | 7.96              | 33              | 1.10           | 300           |
| CM453232-6R8<1>L                           | 6.8              | ±10 %             | K                 | ±5 %             | J                | 50        | 7.96              | 27              | 1.2            | 285           |
| CM453232-8R2<1>L                           | 8.2              | ±10 %             | K                 | ±5 %             | J                | 50        | 7.96              | 25              | 1.4            | 270           |
| CM453232-100<1>L                           | 10               | ±10 %             | K                 | ±5 %             | J                | 50        | 2.52              | 20              | 1.6            | 250           |
| CM453232-120<1>L                           | 12               | ±10 %             | K                 | ±5 %             | J                | 50        | 2.52              | 18              | 2              | 225           |
| CM453232-150<1>L                           | 15               | ±10 %             | K                 | ±5 %             | J                | 50        | 2.52              | 17              | 2.5            | 200           |
| CM453232-180<1>L                           | 18               | ±10 %             | K                 | ±5 %             | J                | 50        | 2.52              | 15              | 2.8            | 190           |
| CM453232-220<1>L                           | 22               | ±10 %             | K                 | ±5 %             | J                | 50        | 2.52              | 13              | 3.2            | 180           |
| CM453232-270<1>L                           | 27               | ±10 %             | K                 | ±5 %             | J                | 50        | 2.52              | 12              | 3.6            | 170           |
| CM453232-330<1>L                           | 33               | ±10 %             | K                 | ±5 %             | J                | 50        | 2.52              | 11              | 4              | 160           |
| CM453232-390<1>L                           | 39               | ±10 %             | K                 | ±5 %             | J                | 50        | 2.52              | 10              | 4.5            | 150           |
| CM453232-470<1>L                           | 47               | ±10 %             | K                 | ±5 %             | J                | 50        | 2.52              | 10              | 5              | 140           |
| CM453232-560<1>L                           | 56               | ±10 %             | K                 | ±5 %             | J                | 50        | 2.52              | 9               | 5.5            | 135           |
| CM453232-680<1>L                           | 68               | ±10 %             | K                 | ±5 %             | J                | 50        | 2.52              | 9               | 6              | 130           |
| CM453232-820<1>L                           | 82               | ±10 %             | K                 | ±5 %             | J                | 50        | 2.52              | 8               | 7              | 120           |
| CM453232-101<1>L                           | 100              | ±10 %             | K                 | ±5 %             | J                | 40        | 2.52              | 8               | 8              | 110           |
| CM453232-121<1>L                           | 120              | ±10 %             | K                 | ±5 %             | J                | 40        | 0.796             | 6               | 8              | 110           |
| CM453232-151<1>L                           | 150              | ±10 %             | K                 | ±5 %             | J                | 40        | 0.796             | 5               | 9              | 105           |
| CM453232-181<1>L                           | 180              | ±10 %             | K                 | ±5 %             | J                | 40        | 0.796             | 5               | 9.5            | 102           |
| CM453232-221<1>L                           | 220              | ±10 %             | K                 | ±5 %             | J                | 40        | 0.796             | 4               | 10             | 100           |
| CM453232-271<1>L                           | 270              | ±10 %             | K                 | ±5 %             | J                | 40        | 0.796             | 4               | 12             | 92            |
| CM453232-331<1>L                           | 330              | ±10 %             | K                 | ±5 %             | J                | 40        | 0.796             | 3.5             | 14             | 85            |
| CM453232-391<1>L                           | 390              | ±10 %             | K                 | ±5 %             | J                | 40        | 0.796             | 3               | 18             | 80            |
| CM453232-471<1>L                           | 470              | ±10 %             | K                 | ±5 %             | J                | 40        | 0.796             | 3               | 26             | 62            |
| CM453232-561<1>L                           | 560              | ±10 %             | K                 | ±5 %             | J                | 30        | 0.796             | 3               | 30             | 50            |
| CM453232-681<1>L                           | 680              | ±10 %             | K                 | ±5 %             | J                | 30        | 0.796             | 3               | 30             | 50            |
| CM453232-821<1>L                           | 820              | ±10 %             | K                 | ±5 %             | J                | 30        | 0.796             | 2.5             | 35             | 30            |
| CM453232-102<1>L                           | 1000             | ±10 %             | K                 | ±5 %             | J                | 30        | 0.252             | 2.5             | 40             | 30            |

<1> Enter tolerance code from standard or 1/2 tolerance column. Example: CM453232-1R2KL is standard tolerance; CM453232-1R2JL is 1/2 tolerance.

REV. 07/15

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