



**THE DATASHEET OF  
CTX10-4-R**



# ECONO-PAC™ /OCTA-PAC® OCTA-PAC® PLUS

## Dual winding toroid power inductors/transformers



### Product features

- Surface mount magnetics that can be used as single or coupled inductors or 1:1 transformers that provide isolation between two windings
- OCTA-PAC's are designed around high frequency, low loss core material
- ECONO-PAC's are a lower cost version of OCTA-PAC's offering high saturation flux density, Iron powder core material
- OCTA-PAC PLUS's offer higher current ratings and higher saturation flux densities than OCTA-PAC and ECONO-PAC, Amorphous metal core material
- Secure 4 Terminal Mounting
- Inductor more versatile inductance combination by series or parallel connections

### Applications

- Computer and portable power devices
- LCD panels, DVD players
- Inductor: DC-DC converters
- Buck, boost, forward, and resonant converters
- Noise filtering and filter chokes
- Transformers: 1:1 300 Vdc isolation, flyback, sepic

### Part number

- CTX\_\_\_-\_\_-R(First three digits CTX; Second 2-3 digits = Inductance Value; Last 1-2 digits, product size & type)
- -R indicates RoHS compliant

### Product size/type

- CTX\_\_\_-1 (-1 = size; no suffix = OCTA-PAC®)
- CTX\_\_\_-1P (-1 = size; P suffix = ECONO-PAC™)
- CTX\_\_\_-1A (-1 = size; A suffix = OCTA-PAC® PLUS)

### Environmental data

- Storage temperature range (component): -40 °C to +125 °C
- Operating temperature range: -40 °C to +125 °C (ambient plus self-temperature rise)
- Solder reflow temperature: J-STD-020 (latest revision) compliant



Octa-Pac Plus  
(-1A, -2A, -3A)  
discontinued October 31,  
2017 or until inventory is  
depleted.



Powering Business Worldwide

| Part Number  | PARALLEL                             |                                 |                           |                            | SERIES                               |                                 |                           |                            |
|--------------|--------------------------------------|---------------------------------|---------------------------|----------------------------|--------------------------------------|---------------------------------|---------------------------|----------------------------|
|              | Open Circuit Inductance<br>μH +/-20% | Full Load Inductance<br>μH min. | Full Load Current<br>A dc | DC Resistance<br>ohms max. | Open Circuit Inductance<br>μH +/-20% | Full Load Inductance<br>μH min. | Full Load Current<br>A dc | DC Resistance<br>ohms max. |
| CTX0.47-1P-R | .42                                  | .31                             | 5.50                      | .005                       | 1.67                                 | 1.25                            | 2.75                      | .021                       |
| CTX0.68-1P-R | .60                                  | .43                             | 5.10                      | .006                       | 2.40                                 | 1.74                            | 2.55                      | .025                       |
| CTX1-1P-R    | 1.07                                 | .73                             | 4.50                      | .008                       | 4.28                                 | 2.92                            | 2.25                      | .032                       |
| CTX2-1P-R    | 2.02                                 | 1.36                            | 3.40                      | .013                       | 8.08                                 | 5.44                            | 1.70                      | .054                       |
| CTX5-1P-R    | 4.83                                 | 3.37                            | 2.00                      | .040                       | 19.31                                | 13.47                           | 1.00                      | .161                       |
| CTX8-1P-R    | 8.08                                 | 5.31                            | 1.80                      | .052                       | 32.33                                | 21.23                           | .90                       | .207                       |
| CTX10-1P-R   | 9.62                                 | 6.23                            | 1.70                      | .057                       | 38.48                                | 24.94                           | .85                       | .227                       |
| CTX15-1P-R   | 15.03                                | 9.62                            | 1.40                      | .087                       | 60.12                                | 38.47                           | .70                       | .348                       |
| CTX20-1P-R   | 20.46                                | 14.12                           | 1.00                      | .158                       | 81.83                                | 56.47                           | .50                       | .634                       |
| CTX25-1P-R   | 25.40                                | 17.07                           | .96                       | .177                       | 101.60                               | 68.29                           | .48                       | .708                       |
| CTX33-1P-R   | 32.33                                | 22.27                           | .80                       | .250                       | 129.32                               | 89.06                           | .40                       | 1.001                      |
| CTX50-1P-R   | 50.52                                | 33.57                           | .70                       | .316                       | 202.07                               | 134.27                          | .35                       | 1.263                      |
| CTX68-1P-R   | 68.40                                | 43.65                           | .66                       | .373                       | 273.61                               | 174.61                          | .33                       | 1.490                      |
| CTX100-1P-R  | 99.01                                | 63.64                           | .54                       | .557                       | 396.06                               | 254.55                          | .27                       | 2.227                      |
| CTX150-1P-R  | 150.72                               | 96.64                           | .44                       | .844                       | 602.87                               | 386.56                          | .22                       | 3.376                      |
| CTX200-1P-R  | 198.41                               | 130.79                          | .36                       | 1.208                      | 793.65                               | 523.16                          | .18                       | 4.831                      |
| CTX300-1P-R  | 299.87                               | 190.05                          | .32                       | 1.525                      | 1199.46                              | 760.19                          | .16                       | 6.100                      |
| CTX0.47-2P-R | .54                                  | .42                             | 5.90                      | .006                       | 2.18                                 | 1.69                            | 2.95                      | .024                       |
| CTX0.68-2P-R | .85                                  | .64                             | 5.40                      | .007                       | 3.40                                 | 2.55                            | 2.70                      | .029                       |
| CTX1-2P-R    | 1.22                                 | .89                             | 5.00                      | .008                       | 4.90                                 | 3.57                            | 2.50                      | .033                       |
| CTX2-2P-R    | 2.18                                 | 1.56                            | 3.90                      | .014                       | 8.70                                 | 6.26                            | 1.95                      | .055                       |
| CTX5-2P-R    | 4.90                                 | 3.57                            | 2.50                      | .032                       | 19.58                                | 14.26                           | 1.25                      | .128                       |
| CTX8-2P-R    | 7.65                                 | 5.31                            | 2.30                      | .040                       | 30.60                                | 21.23                           | 1.15                      | .158                       |
| CTX10-2P-R   | 9.83                                 | 6.73                            | 2.10                      | .045                       | 39.30                                | 26.92                           | 1.05                      | .179                       |
| CTX15-2P-R   | 14.99                                | 10.51                           | 1.60                      | .085                       | 59.98                                | 42.02                           | .80                       | .339                       |
| CTX20-2P-R   | 19.58                                | 13.37                           | 1.50                      | .097                       | 78.34                                | 53.48                           | .75                       | .387                       |
| CTX25-2P-R   | 24.79                                | 16.60                           | 1.40                      | .109                       | 99.14                                | 66.38                           | .70                       | .436                       |
| CTX33-2P-R   | 32.67                                | 21.29                           | 1.30                      | .126                       | 130.70                               | 85.17                           | .65                       | .503                       |
| CTX50-2P-R   | 49.10                                | 35.31                           | .82                       | .305                       | 196.38                               | 141.24                          | .41                       | 1.221                      |
| CTX68-2P-R   | 68.85                                | 47.93                           | .76                       | .362                       | 275.40                               | 191.71                          | .38                       | 1.445                      |
| CTX100-2P-R  | 99.14                                | 69.56                           | .62                       | .541                       | 396.58                               | 278.22                          | .31                       | 2.162                      |
| CTX150-2P-R  | 148.10                               | 100.07                          | .56                       | .665                       | 592.42                               | 400.27                          | .28                       | 2.660                      |
| CTX200-2P-R  | 201.59                               | 138.49                          | .46                       | .951                       | 806.34                               | 553.97                          | .23                       | 3.804                      |
| CTX300-2P-R  | 300.42                               | 197.52                          | .42                       | 1.176                      | 1201.70                              | 790.08                          | .21                       | 4.703                      |
| CTX0.47-3P-R | .46                                  | .35                             | 6.20                      | .006                       | 1.85                                 | 1.42                            | 3.10                      | .025                       |
| CTX0.68-3P-R | .67                                  | .50                             | 5.70                      | .007                       | 2.66                                 | 1.98                            | 2.85                      | .028                       |
| CTX1-3P-R    | .91                                  | .65                             | 5.40                      | .008                       | 3.63                                 | 2.62                            | 2.70                      | .032                       |
| CTX2-3P-R    | 1.85                                 | 1.24                            | 4.60                      | .011                       | 7.40                                 | 4.97                            | 2.30                      | .045                       |
| CTX5-3P-R    | 4.74                                 | 3.04                            | 3.20                      | .022                       | 18.94                                | 12.15                           | 1.60                      | .090                       |
| CTX8-3P-R    | 8.16                                 | 4.90                            | 2.80                      | .030                       | 32.63                                | 19.60                           | 1.40                      | .119                       |
| CTX10-3P-R   | 9.79                                 | 5.71                            | 2.70                      | .033                       | 39.15                                | 22.85                           | 1.35                      | .131                       |
| CTX15-3P-R   | 14.50                                | 8.50                            | 2.20                      | .050                       | 58.02                                | 34.01                           | 1.10                      | .198                       |
| CTX20-3P-R   | 20.15                                | 13.12                           | 1.50                      | .111                       | 80.59                                | 52.48                           | .75                       | .443                       |
| CTX25-3P-R   | 25.33                                | 16.16                           | 1.40                      | .125                       | 101.31                               | 64.66                           | .70                       | .499                       |
| CTX33-3P-R   | 32.63                                | 20.32                           | 1.30                      | .146                       | 130.54                               | 81.30                           | .65                       | .571                       |
| CTX50-3P-R   | 50.02                                | 33.06                           | .92                       | .277                       | 200.10                               | 132.24                          | .46                       | 1.108                      |
| CTX68-3P-R   | 68.84                                | 44.15                           | .84                       | .328                       | 275.35                               | 176.61                          | .42                       | 1.312                      |
| CTX100-3P-R  | 101.31                               | 65.50                           | .68                       | .501                       | 405.22                               | 262.02                          | .34                       | 2.005                      |
| CTX150-3P-R  | 149.85                               | 90.92                           | .64                       | .621                       | 599.40                               | 363.68                          | .32                       | 2.483                      |
| CTX200-3P-R  | 200.10                               | 116.51                          | .60                       | .731                       | 800.38                               | 466.03                          | .30                       | 2.925                      |
| CTX300-3P-R  | 298.39                               | 172.12                          | .50                       | .926                       | 1193.55                              | 688.50                          | .25                       | 3.702                      |
| CTX0.47-4P-R | .49                                  | .37                             | 7.90                      | .005                       | 1.95                                 | 1.49                            | 3.95                      | .019                       |
| CTX0.68-4P-R | .76                                  | .56                             | 7.20                      | .006                       | 3.05                                 | 2.24                            | 3.60                      | .023                       |
| CTX1-4P-R    | 1.10                                 | .81                             | 5.90                      | .008                       | 4.39                                 | 3.24                            | 2.95                      | .033                       |
| CTX2-4P-R    | 1.95                                 | 1.42                            | 4.60                      | .014                       | 7.81                                 | 5.69                            | 2.30                      | .055                       |
| CTX5-4P-R    | 5.15                                 | 3.56                            | 3.30                      | .027                       | 20.62                                | 14.23                           | 1.65                      | .107                       |
| CTX8-4P-R    | 7.81                                 | 5.15                            | 3.00                      | .033                       | 31.23                                | 20.61                           | 1.50                      | .131                       |
| CTX10-4P-R   | 9.88                                 | 6.70                            | 2.50                      | .047                       | 39.53                                | 26.79                           | 1.25                      | .187                       |
| CTX15-4P-R   | 14.76                                | 9.52                            | 2.30                      | .057                       | 59.05                                | 38.09                           | 1.15                      | .228                       |
| CTX20-4P-R   | 20.62                                | 13.44                           | 1.90                      | .084                       | 82.47                                | 53.76                           | .95                       | .337                       |
| CTX25-4P-R   | 25.65                                | 17.17                           | 1.60                      | .115                       | 102.60                               | 68.68                           | .80                       | .461                       |
| CTX33-4P-R   | 33.21                                | 22.93                           | 1.30                      | .166                       | 132.86                               | 91.72                           | .65                       | .662                       |
| CTX50-4P-R   | 48.80                                | 32.21                           | 1.20                      | .201                       | 195.20                               | 128.83                          | .60                       | .805                       |
| CTX68-4P-R   | 67.37                                | 43.04                           | 1.10                      | .238                       | 269.50                               | 172.16                          | .55                       | .952                       |
| CTX100-4P-R  | 99.09                                | 69.54                           | .72                       | .565                       | 396.38                               | 278.15                          | .36                       | 2.259                      |
| CTX150-4P-R  | 149.45                               | 101.46                          | .64                       | .696                       | 597.80                               | 405.83                          | .32                       | 2.784                      |
| CTX200-4P-R  | 200.11                               | 131.37                          | .60                       | .810                       | 800.44                               | 525.47                          | .30                       | 3.240                      |
| CTX300-4P-R  | 298.93                               | 188.03                          | .54                       | 1.003                      | 1195.72                              | 752.13                          | .27                       | 4.011                      |

| Part Number | PARALLEL   |   |                       |                         | SERIES   |   |                       |                         |
|-------------|--|---|-----------------------|-------------------------|--|---|-----------------------|-------------------------|
|             | Open Circuit Inductance $\mu\text{H}$ $\pm 20\%$ | Full Load Inductance $\mu\text{H}$ min. | Full Load Current Adc | DC Resistance ohms max. | Open Circuit Inductance $\mu\text{H}$ $\pm 20\%$ | Full Load Inductance $\mu\text{H}$ min. | Full Load Current Adc | DC Resistance ohms max. |
| CTX0.47-1-R | .40  | .26                                     | 5.50                  | .005                    | 1.60   | 1.05                                    | 2.75                  | .020                    |
| CTX0.68-1-R | .63  | .41                                     | 4.50                  | .006                    | 2.50   | 1.63                                    | 2.25                  | .024                    |
| CTX1-1-R    | .90  | .56                                     | 4.20                  | .007                    | 3.60   | 2.24                                    | 2.10                  | .028                    |
| CTX2-1-R    | 2.03   | 1.00                                    | 4.10                  | .010                    | 8.10   | 4.01                                    | 2.05                  | .040                    |
| CTX5-1-R    | 4.90   | 2.66                                    | 2.30                  | .030                    | 19.60  | 10.64                                   | 1.15                  | .122                    |
| CTX8-1-R    | 8.10   | 4.08                                    | 2.00                  | .039                    | 32.40  | 16.34                                   | 1.00                  | .157                    |
| CTX10-1-R   | 10.00  | 4.85                                    | 1.90                  | .044                    | 40.00  | 19.40                                   | .95                   | .176                    |
| CTX15-1-R   | 14.40  | 8.74                                    | 1.10                  | .080                    | 57.60  | 34.96                                   | .55                   | .319                    |
| CTX20-1-R   | 19.60  | 11.54                                   | 1.00                  | .146                    | 78.40  | 46.15                                   | .50                   | .583                    |
| CTX25-1-R   | 25.60  | 16.35                                   | .74                   | .167                    | 102.40   | 65.42                                   | .37                   | .668                    |
| CTX33-1-R   | 32.40  | 19.84                                   | .72                   | .293                    | 129.60   | 79.37                                   | .36                   | 1.171                   |
| CTX50-1-R   | 50.63  | 29.34                                   | .64                   | .365                    | 202.50   | 117.38                                  | .32                   | 1.461                   |
| CTX68-1-R   | 67.60  | 39.73                                   | .54                   | .516                    | 270.40   | 158.92                                  | .27                   | 2.064                   |
| CTX100-1-R  | 99.23  | 58.72                                   | .44                   | .784                    | 396.90   | 234.88                                  | .22                   | 3.137                   |
| CTX150-1-R  | 148.23   | 85.16                                   | .38                   | .965                    | 592.90   | 340.64                                  | .19                   | 3.861                   |
| CTX200-1-R  | 202.50   | 107.60                                  | .37                   | 1.142                   | 810.00   | 430.39                                  | .19                   | 4.567                   |
| CTX300-1-R  | 302.50   | 191.38                                  | .22                   | 1.431                   | 1210.00  | 765.54                                  | .11                   | 5.724                   |
| CTX0.47-2-R | .42  | .29                                     | 6.50                  | .005                    | 1.69   | 1.17                                    | 3.25                  | .019                    |
| CTX0.68-2-R | .75  | .50                                     | 5.50                  | .006                    | 3.01   | 1.98                                    | 2.75                  | .024                    |
| CTX1-2-R    | 1.18   | .76                                     | 4.60                  | .007                    | 4.70   | 3.04                                    | 2.30                  | .028                    |
| CTX2-2-R    | 2.30   | 1.27                                    | 4.50                  | .010                    | 9.21   | 5.07                                    | 2.25                  | .038                    |
| CTX5-2-R    | 4.70   | 2.66                                    | 3.00                  | .021                    | 18.80  | 10.65                                   | 1.50                  | .084                    |
| CTX8-2-R    | 7.94   | 4.18                                    | 2.60                  | .027                    | 31.77  | 16.72                                   | 1.30                  | .108                    |
| CTX10-2-R   | 10.58  | 5.18                                    | 2.50                  | .031                    | 42.30  | 20.72                                   | 1.25                  | .125                    |
| CTX15-2-R   | 15.23  | 8.53                                    | 1.70                  | .059                    | 60.91  | 34.10                                   | .85                   | .236                    |
| CTX20-2-R   | 20.73  | 12.36                                   | 1.30                  | .107                    | 82.91  | 49.46                                   | .65                   | .426                    |
| CTX25-2-R   | 24.86  | 16.09                                   | 1.00                  | .117                    | 99.45  | 64.35                                   | .50                   | .466                    |
| CTX33-2-R   | 31.77  | 15.90                                   | 1.40                  | .105                    | 127.09   | 63.59                                   | .70                   | .420                    |
| CTX50-2-R   | 51.18  | 28.79                                   | .92                   | .210                    | 204.73   | 115.16                                  | .46                   | .839                    |
| CTX68-2-R   | 67.87  | 38.71                                   | .78                   | .303                    | 271.47   | 154.83                                  | .39                   | 1.214                   |
| CTX100-2-R  | 99.45  | 57.45                                   | .63                   | .457                    | 397.81   | 229.79                                  | .32                   | 1.828                   |
| CTX150-2-R  | 147.39   | 93.46                                   | .43                   | .560                    | 589.57   | 373.84                                  | .22                   | 2.241                   |
| CTX200-2-R  | 198.58   | 122.94                                  | .39                   | .796                    | 794.30   | 491.76                                  | .20                   | 3.184                   |
| CTX300-2-R  | 300.80   | 169.06                                  | .38                   | 1.231                   | 1203.20  | 676.24                                  | .19                   | 4.929                   |
| CTX0.47-3-R | .38  | .27                                     | 6.00                  | .005                    | 1.54   | 1.08                                    | 3.00                  | .020                    |
| CTX0.68-3-R | .60  | .42                                     | 5.00                  | .006                    | 2.40   | 1.67                                    | 2.50                  | .024                    |
| CTX1-3-R    | .86  | .57                                     | 4.80                  | .007                    | 3.46   | 2.28                                    | 2.40                  | .028                    |
| CTX2-3-R    | 1.94   | 1.05                                    | 4.70                  | .010                    | 7.78   | 4.22                                    | 2.35                  | .040                    |
| CTX5-3-R    | 4.70   | 2.56                                    | 3.00                  | .019                    | 18.82  | 10.26                                   | 1.50                  | .077                    |
| CTX8-3-R    | 7.78   | 3.74                                    | 2.80                  | .025                    | 31.10  | 14.98                                   | 1.40                  | .099                    |
| CTX10-3-R   | 9.60   | 4.38                                    | 2.70                  | .028                    | 38.40  | 17.54                                   | 1.35                  | .111                    |
| CTX15-3-R   | 15.00  | 7.26                                    | 2.00                  | .043                    | 60.00  | 29.06                                   | 1.00                  | .172                    |
| CTX20-3-R   | 20.18  | 10.76                                   | 1.50                  | .078                    | 80.74  | 43.04                                   | .75                   | .312                    |
| CTX25-3-R   | 24.58  | 15.64                                   | .98                   | .086                    | 98.30  | 62.56                                   | .49                   | .346                    |
| CTX33-3-R   | 32.86  | 19.69                                   | .96                   | .083                    | 131.42   | 78.77                                   | .48                   | .331                    |
| CTX50-3-R   | 50.78  | 27.18                                   | .94                   | .239                    | 203.14   | 108.71                                  | .47                   | .956                    |
| CTX68-3-R   | 67.42  | 36.53                                   | .80                   | .277                    | 269.66   | 146.11                                  | .40                   | 1.109                   |
| CTX100-3-R  | 101.40   | 52.48                                   | .70                   | .345                    | 405.60   | 209.93                                  | .35                   | 1.381                   |
| CTX150-3-R  | 149.78   | 97.16                                   | .38                   | .430                    | 599.14   | 388.63                                  | .19                   | 1.718                   |
| CTX200-3-R  | 198.74   | 119.18                                  | .39                   | .619                    | 794.98   | 476.71                                  | .20                   | 2.475                   |
| CTX300-3-R  | 301.06   | 157.44                                  | .40                   | .951                    | 1204.22  | 629.75                                  | .20                   | 3.083                   |
| CTX0.47-4-R | .44  | .32                                     | 7.00                  | .004                    | 1.76   | 1.29                                    | 3.50                  | .016                    |
| CTX0.68-4-R | .78  | .55                                     | 6.00                  | .005                    | 3.14   | 2.21                                    | 3.00                  | .020                    |
| CTX1-4-R    | 1.23   | .85                                     | 5.00                  | .006                    | 4.90   | 3.41                                    | 2.50                  | .024                    |
| CTX2-4-R    | 1.76   | 1.06                                    | 4.90                  | .007                    | 7.06   | 4.24                                    | 2.45                  | .028                    |
| CTX5-4-R    | 4.90   | 2.59                                    | 4.40                  | .014                    | 19.60  | 10.37                                   | 2.20                  | .056                    |
| CTX8-4-R    | 8.28   | 4.29                                    | 3.50                  | .018                    | 33.12  | 17.14                                   | 1.75                  | .072                    |
| CTX10-4-R   | 9.60   | 4.82                                    | 3.40                  | .019                    | 38.42  | 19.28                                   | 1.70                  | .078                    |
| CTX15-4-R   | 14.16  | 6.76                                    | 3.00                  | .024                    | 56.64  | 27.03                                   | 1.50                  | .096                    |
| CTX20-4-R   | 19.60  | 10.68                                   | 2.10                  | .055                    | 78.40  | 42.73                                   | 1.05                  | .220                    |
| CTX25-4-R   | 25.92  | 13.32                                   | 2.00                  | .063                    | 103.68   | 53.27                                   | 1.00                  | .253                    |
| CTX33-4-R   | 33.12  | 16.82                                   | 1.80                  | .072                    | 132.50   | 67.27                                   | .90                   | .287                    |
| CTX50-4-R   | 50.18  | 25.03                                   | 1.50                  | .111                    | 200.70   | 100.11                                  | .75                   | .443                    |
| CTX68-4-R   | 67.08  | 35.29                                   | 1.20                  | .157                    | 268.32   | 141.15                                  | .60                   | .630                    |
| CTX100-4-R  | 99.23  | 54.56                                   | .92                   | .302                    | 396.90   | 218.25                                  | .46                   | 1.210                   |
| CTX150-4-R  | 148.23   | 77.17                                   | .82                   | .372                    | 592.90   | 308.69                                  | .41                   | 1.488                   |
| CTX200-4-R  | 200.70   | 111.08                                  | .64                   | .545                    | 802.82   | 444.32                                  | .32                   | 2.180                   |
| CTX300-4-R  | 298.12   | 147.92                                  | .62                   | .672                    | 1192.46  | 591.66                                  | .31                   | 2.687                   |

| Part Number  | Parallel Ratings      |                             |                         |                    |                        |                | Series Ratings              |                         |                    |                        |                |
|--------------|-----------------------|-----------------------------|-------------------------|--------------------|------------------------|----------------|-----------------------------|-------------------------|--------------------|------------------------|----------------|
|              | Rated Inductance (µH) | OCL (1) nominal +/-25% (µH) | I sat. (2) Amperes Peak | I rms. (3) Amperes | DCR Ω (4) max. @ 20°C. | Volt (7) µ-Sec | OCL (1) nominal +/-25% (µH) | I sat. (2) Amperes Peak | I rms. (3) Amperes | DCR Ω (4) max. @ 20°C. | Volt (7) µ-Sec |
| CTX0.33-1A-R | 0.33                  | 0.402                       | 12.5                    | 10.0               | 0.0037                 | .93            | 1.61                        | 6.25                    | 4.98               | 0.015                  | 1.86           |
| CTX0.68-1A-R | 0.68                  | 0.752                       | 9.4                     | 9.0                | 0.0046                 | 1.24           | 3.01                        | 4.69                    | 4.48               | 0.0185                 | 2.49           |
| CTX1-1A-R    | 1.0                   | 1.18                        | 7.5                     | 7.26               | 0.0070                 | 1.55           | 4.70                        | 3.75                    | 3.63               | 0.0282                 | 3.11           |
| CTX2-1A-R    | 2.0                   | 2.30                        | 5.36                    | 5.64               | 0.012                  | 2.17           | 9.21                        | 2.68                    | 2.82               | 0.0470                 | 4.35           |
| CTX5-1A-R    | 5.0                   | 4.70                        | 3.75                    | 4.27               | 0.020                  | 3.11           | 18.8                        | 1.88                    | 2.13               | 0.082                  | 6.21           |
| CTX8-1A-R    | 8.0                   | 7.94                        | 2.88                    | 3.37               | 0.033                  | 4.04           | 31.77                       | 1.44                    | 1.69               | 0.130                  | 8.08           |
| CTX10-1A-R   | 10.0                  | 10.58                       | 2.5                     | 2.84               | 0.046                  | 4.66           | 42.30                       | 1.25                    | 1.42               | 0.183                  | 9.32           |
| CTX15-1A-R   | 15.0                  | 15.23                       | 2.08                    | 2.07               | 0.087                  | 5.59           | 60.91                       | 1.04                    | 1.03               | 0.348                  | 11.2           |
| CTX20-1A-R   | 20.0                  | 20.73                       | 1.79                    | 1.71               | 0.127                  | 6.52           | 82.91                       | 0.89                    | 0.86               | 0.507                  | 13.0           |
| CTX25-1A-R   | 25.0                  | 24.86                       | 1.63                    | 1.46               | 0.173                  | 7.14           | 99.45                       | 0.82                    | 0.73               | 0.693                  | 14.3           |
| CTX33-1A-R   | 33.0                  | 34.26                       | 1.39                    | 1.22               | 0.249                  | 8.39           | 137.1                       | 0.61                    | 0.61               | 0.95                   | 16.8           |
| CTX50-1A-R   | 50.0                  | 51.18                       | 1.14                    | 0.99               | 0.381                  | 10.3           | 204.7                       | 0.57                    | 0.49               | 1.24                   | 20.5           |
| CTX68-1A-R   | 68.0                  | 67.87                       | 0.99                    | 0.92               | 0.437                  | 11.8           | 271.3                       | 0.49                    | 0.46               | 1.749                  | 23.6           |
| CTX100-1A-R  | 100.0                 | 99.45                       | 0.82                    | 0.74               | 0.686                  | 14.3           | 397.8                       | 0.41                    | 0.37               | 2.745                  | 28.6           |
| CTX150-1A-R  | 150.0                 | 147.4                       | 0.67                    | 0.67               | 0.832                  | 17.4           | 589.6                       | 0.33                    | 0.33               | 3.329                  | 34.8           |
| CTX200-1A-R  | 200.0                 | 198.6                       | 0.58                    | 0.62               | 0.967                  | 20.2           | 794.3                       | 0.29                    | 0.31               | 3.854                  | 40.4           |
| CTX300-1A-R  | 300.0                 | 300.8                       | 0.47                    | 0.56               | 1.181                  | 24.9           | 1203                        | 0.23                    | 0.24               | 4.726                  | 49.7           |
| CTX0.33-2A-R | 0.33                  | 0.284                       | 18.8                    | 11.9               | 0.0033                 | .85            | 1.14                        | 9.38                    | 5.47               | 0.0132                 | 1.71           |
| CTX0.68-2A-R | 0.68                  | 0.675                       | 12.5                    | 9.4                | 0.0045                 | 1.23           | 2.70                        | 6.25                    | 4.68               | 0.0180                 | 2.56           |
| CTX1-2A-R    | 1.0                   | 1.26                        | 9.38                    | 8.22               | 0.0058                 | 1.71           | 5.06                        | 4.69                    | 4.11               | 0.0233                 | 3.42           |
| CTX2-2A-R    | 2.0                   | 1.9                         | 7.50                    | 6.74               | 0.0090                 | 2.14           | 11.90                       | 3.75                    | 3.37               | 0.035                  | 4.27           |
| CTX5-2A-R    | 5.0                   | 5.06                        | 4.69                    | 4.64               | 0.021                  | 3.12           | 20.22                       | 2.34                    | 2.17               | 0.084                  | 6.84           |
| CTX8-2A-R    | 8.0                   | 7.90                        | 3.75                    | 3.50               | 0.032                  | 4.27           | 31.60                       | 1.88                    | 1.75               | 0.129                  | 8.55           |
| CTX10-2A-R   | 10.0                  | 11.38                       | 3.13                    | 2.89               | 0.047                  | 5.13           | 45.50                       | 1.56                    | 1.45               | 0.188                  | 10.3           |
| CTX15-2A-R   | 15.0                  | 15.48                       | 2.68                    | 2.69               | 0.054                  | 5.98           | 61.94                       | 1.34                    | 1.35               | 0.218                  | 12.0           |
| CTX20-2A-R   | 20.0                  | 21.22                       | 2.34                    | 2.24               | 0.078                  | 6.84           | 80.90                       | 1.17                    | 1.12               | 0.313                  | 13.7           |
| CTX25-2A-R   | 25.0                  | 25.60                       | 2.08                    | 1.89               | 0.111                  | 7.69           | 102.38                      | 1.04                    | 0.94               | 0.443                  | 15.4           |
| CTX33-2A-R   | 33.0                  | 34.84                       | 1.79                    | 1.56               | 0.162                  | 8.97           | 139.4                       | 0.89                    | 0.78               | 0.649                  | 17.9           |
| CTX50-2A-R   | 50.0                  | 49.38                       | 1.50                    | 1.28               | 0.240                  | 10.7           | 197.5                       | 0.75                    | 0.64               | 0.961                  | 21.4           |
| CTX68-2A-R   | 68.0                  | 66.14                       | 1.29                    | 1.07               | 0.342                  | 12.4           | 265.8                       | 0.65                    | 0.54               | 1.367                  | 24.8           |
| CTX100-2A-R  | 100.0                 | 102.38                      | 1.04                    | 0.75               | 0.695                  | 15.4           | 409.5                       | 0.52                    | 0.38               | 2.778                  | 30.8           |
| CTX150-2A-R  | 150.0                 | 152.9                       | 0.85                    | 0.68               | 0.842                  | 18.8           | 611.8                       | 0.43                    | 0.34               | 3.366                  | 37.6           |
| CTX200-2A-R  | 200.0                 | 197.5                       | 0.75                    | 0.64               | 0.950                  | 21.4           | 790.0                       | 0.38                    | 0.32               | 3.800                  | 42.7           |
| CTX300-2A-R  | 300.0                 | 303.7                       | 0.60                    | 0.58               | 1.174                  | 26.5           | 1215                        | 0.30                    | 0.29               | 4.697                  | 53.0           |
| CTX0.33-3A-R | 0.33                  | 0.368                       | 15.0                    | 11.4               | 0.0032                 | 0.97           | 1.47                        | 7.50                    | 5.72               | 0.0128                 | 1.93           |
| CTX0.68-3A-R | 0.68                  | 0.688                       | 11.3                    | 9.3                | 0.0048                 | 1.29           | 2.75                        | 5.63                    | 4.64               | 0.0194                 | 2.58           |
| CTX1-3A-R    | 1.0                   | 1.08                        | 9.0                     | 8.38               | 0.0059                 | 1.61           | 4.20                        | 4.50                    | 4.19               | 0.0238                 | 3.22           |
| CTX2-3A-R    | 2.0                   | 2.11                        | 6.43                    | 7.26               | 0.0079                 | 2.26           | 8.43                        | 3.21                    | 3.63               | 0.0317                 | 4.51           |
| CTX5-3A-R    | 5.0                   | 5.20                        | 4.09                    | 5.24               | 0.015                  | 3.54           | 20.81                       | 2.05                    | 2.62               | 0.061                  | 7.09           |
| CTX8-3A-R    | 8.0                   | 8.43                        | 3.21                    | 4.23               | 0.023                  | 4.51           | 33.77                       | 1.61                    | 2.12               | 0.093                  | 9.02           |
| CTX10-3A-R   | 10.0                  | 9.68                        | 3.00                    | 3.64               | 0.032                  | 4.83           | 38.70                       | 1.50                    | 1.82               | 0.126                  | 9.67           |
| CTX15-3A-R   | 15.0                  | 15.52                       | 2.37                    | 3.25               | 0.039                  | 6.12           | 62.09                       | 1.18                    | 1.63               | 0.158                  | 12.2           |
| CTX20-3A-R   | 20.0                  | 20.81                       | 2.05                    | 2.43               | 0.071                  | 7.09           | 83.25                       | 1.02                    | 1.22               | 0.282                  | 14.2           |
| CTX25-3A-R   | 25.0                  | 24.77                       | 1.88                    | 2.34               | 0.076                  | 7.73           | 99.07                       | 0.94                    | 1.17               | 0.306                  | 15.5           |
| CTX33-3A-R   | 33.0                  | 33.71                       | 1.61                    | 1.93               | 0.112                  | 9.02           | 134.8                       | 0.80                    | 0.96               | 0.449                  | 18.0           |
| CTX50-3A-R   | 50.0                  | 49.71                       | 1.32                    | 1.56               | 0.171                  | 11.0           | 198.8                       | 0.66                    | 0.78               | 0.686                  | 21.9           |

1) Open Circuit Inductance Test Parameters: 100kHz, 0.250 Vrms, 0.0 Adc  
Parallel: (1,4 - 3,2) Series: (1 - 3) tie (2 - 4)  
2) Peak current for approximately 30% roll-off  
3) RMS current, delta temp. of 40° C ambient temperature of 85° C  
4) DCR @ 20°C

5) Hipot rating: winding to winding: 300Vdc min.  
6) Turns Ratio: (1-2):(4-3) 1:1  
7) Applied volt-time product (v-us) across the inductor. This value represents the applied V-us at 300KHz necessary to generate a core loss equal to 10% of the total losses for a 40°C temperature rise.

| Part Number  | Rated Inductance (μH) | Parallel Ratings            |                         |                    |                        |                | Series Ratings              |                         |                    |                        |                |
|--------------|-----------------------|-----------------------------|-------------------------|--------------------|------------------------|----------------|-----------------------------|-------------------------|--------------------|------------------------|----------------|
|              |                       | OCL (1) nominal +/-25% (μH) | I sat. (2) Amperes Peak | I rms. (3) Amperes | DCR Ω (4) max. @ 20°C. | Volt (7) μ-Sec | OCL (1) nominal +/-25% (μH) | I sat. (2) Amperes Peak | I rms. (3) Amperes | DCR Ω (4) max. @ 20°C. | Volt (7) μ-Sec |
| CTX68-3A-R   | 68.0                  | 68.80                       | 1.13                    | 1.28               | 0.253                  | 12.9           | 275.2                       | 0.56                    | 0.64               | 1.013                  | 25.8           |
| CTX100-3A-R  | 100.0                 | 99.07                       | 0.94                    | 1.05               | 0.379                  | 15.5           | 396.3                       | 0.47                    | 0.53               | 1.514                  | 30.9           |
| CTX150-3A-R  | 150.0                 | 149.7                       | 0.76                    | 0.86               | 0.571                  | 19.0           | 598.7                       | 0.38                    | 0.43               | 2.283                  | 38.0           |
| CTX200-3A-R  | 200.0                 | 198.8                       | 0.66                    | 0.71               | 0.829                  | 21.9           | 795.3                       | 0.33                    | 0.35               | 3.315                  | 43.8           |
| CTX300-3A-R  | 300.0                 | 296.2                       | 0.54                    | 0.56               | 1.309                  | 26.7           | 1185                        | 0.27                    | 0.28               | 5.236                  | 53.5           |
| CTX0.33-4A-R | 0.33                  | 0.313                       | 22.5                    | 12.2               | 0.0030                 | 0.98           | 1.25                        | 11.25                   | 6.09               | 0.0119                 | 1.96           |
| CTX0.68-4A-R | 0.68                  | 0.744                       | 15.0                    | 10.6               | 0.0040                 | 1.47           | 2.98                        | 7.50                    | 5.28               | 0.0158                 | 2.94           |
| CTX1-4A-R    | 1.0                   | 1.39                        | 11.25                   | 9.23               | 0.0052                 | 1.96           | 5.57                        | 5.63                    | 4.62               | 0.0207                 | 3.93           |
| CTX2-4A-R    | 2.0                   | 2.18                        | 9.00                    | 8.38               | 0.0063                 | 2.45           | 8.70                        | 4.50                    | 4.19               | 0.0251                 | 4.91           |
| CTX5-4A-R    | 5.0                   | 4.26                        | 6.43                    | 7.21               | 0.0085                 | 3.44           | 17.05                       | 3.21                    | 3.61               | 0.0339                 | 6.87           |
| CTX8-4A-R    | 8.0                   | 8.70                        | 4.50                    | 5.49               | 0.015                  | 4.91           | 34.80                       | 2.25                    | 2.74               | 0.059                  | 9.81           |
| CTX10-4A-R   | 10.0                  | 10.53                       | 4.09                    | 4.67               | 0.020                  | 5.40           | 42.11                       | 2.05                    | 2.33               | 0.081                  | 10.8           |
| CTX15-4A-R   | 15.0                  | 14.70                       | 3.46                    | 3.87               | 0.029                  | 6.38           | 58.81                       | 1.73                    | 1.94               | 0.117                  | 12.8           |
| CTX20-4A-R   | 20.0                  | 19.58                       | 3.00                    | 3.62               | 0.034                  | 7.36           | 78.30                       | 1.50                    | 1.81               | 0.135                  | 14.7           |
| CTX25-4A-R   | 25.0                  | 25.14                       | 2.65                    | 3.02               | 0.048                  | 8.34           | 100.51                      | 1.32                    | 1.51               | 0.193                  | 16.7           |
| CTX33-4A-R   | 33.0                  | 34.80                       | 2.25                    | 2.49               | 0.071                  | 9.81           | 139.2                       | 1.13                    | 1.25               | 0.283                  | 19.6           |
| CTX50-4A-R   | 50.0                  | 50.11                       | 1.88                    | 2.05               | 0.104                  | 11.8           | 200.4                       | 0.94                    | 1.03               | 0.418                  | 23.6           |
| CTX68-4A-R   | 68.0                  | 68.21                       | 1.61                    | 1.70               | 0.153                  | 13.7           | 272.8                       | 0.80                    | 0.85               | 0.612                  | 27.5           |
| CTX100-4A-R  | 100.0                 | 100.57                      | 1.32                    | 1.37               | 0.235                  | 16.7           | 402.3                       | 0.66                    | 0.69               | 0.939                  | 33.4           |
| CTX150-4A-R  | 150.0                 | 153.5                       | 1.07                    | 1.10               | 0.365                  | 20.6           | 613.9                       | 0.54                    | 0.55               | 1.462                  | 41.2           |
| CTX200-4A-R  | 200.0                 | 200.4                       | 0.94                    | 0.92               | 0.521                  | 23.6           | 801.8                       | 0.47                    | 0.46               | 2.085                  | 47.1           |
| CTX300-4A-R  | 300.0                 | 302.8                       | 0.76                    | 0.75               | 0.787                  | 29.0           | 1211                        | 0.38                    | 0.37               | 3.148                  | 57.9           |

- 1) Open Circuit Inductance Test Parameters: 100kHz, 0.250 Vrms, 0.0 Adc  
Parallel: (1,4 - 3,2) Series: (1 - 3) tie (2 - 4)
- 2) Peak current for approximately 30% roll-off
- 3) RMS current, delta temp. of 40° C ambient temperature of 85° C
- 4) DCR @ 20°C

- 5) Hipot rating: winding to winding: 300Vdc min.
- 6) Turns Ratio: (1-2):(4-3) 1:1
- 7) Applied volt-time product (v-us) across the inductor. This value represents the applied V-us at 300KHz necessary to generate a core loss equal to 10% of the total losses for a 40°C temperature rise.

Octa-Pac Plus  
(-1A, -2A-3A) discontinued  
October 31, 2017 or until  
inventory is depleted.

**Mechanical Diagrams**

**CTX 1, 1P, 1A Series**



**CTX 2, 2P, 2A Series**



**CTX 3, 3P, 3A Series**



**CTX 4, 4P, 4A Series**



Dimensions in Millimeters.

wwllyy = (date code) R = revision level

**Packaging Information**

**CTX 1, 1P, 1A Series**



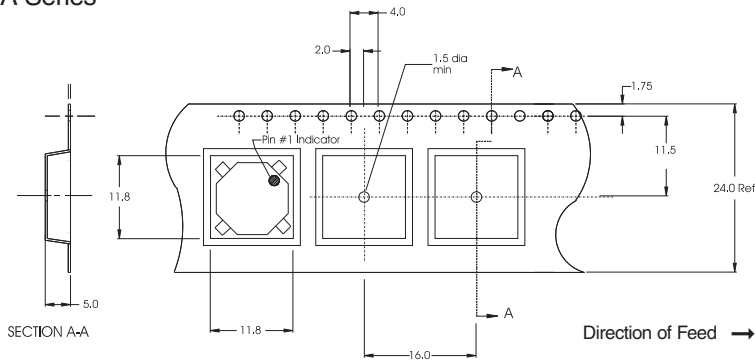
Parts packaged on 13" Diameter reel,  
 1,100 parts per reel.

**CTX 2, 2P, 2A Series**



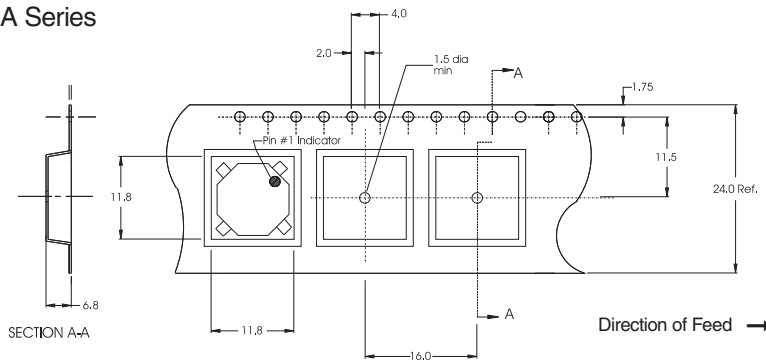
Parts packaged on 13" Diameter reel,  
 800 parts per reel.

**CTX 3, 3P, 3A Series**



Parts packaged on 13" Diameter reel,  
 800 parts per reel.

**CTX 4, 4P, 4A Series**



Parts packaged on 13" Diameter reel,  
 600 parts per reel.

Dimensions are in millimeters.

Performance Characteristics



- **INDUCTANCE VS. CURRENT:**  
Inductance will fall off as DC Current is increased. (See Inductance vs. Current graph).
- **FREQUENCY RESPONSE:**  
Wide-band frequency response to 1 megaHertz.
- **CURRENT LIMITATION:**  
The maximum allowable currents are defined by the internal "hot-spot" temperatures which are limited to 130°C, including ambient.

OCTA-PAC® PLUS Typical Inductance vs. DC Current



OCTA-PAC® PLUS Winding Loss Derating with Core Loss



### Solder Reflow Profile



Table 1 - Standard SnPb Solder ( $T_c$ )

| Package Thickness   | Volume $\text{mm}^3$ <350 | Volume $\text{mm}^3$ $\geq 350$ |
|---------------------|---------------------------|---------------------------------|
| <2.5mm              | 235°C                     | 220°C                           |
| $\geq 2.5\text{mm}$ | 220°C                     | 220°C                           |

Table 2 - Lead (Pb) Free Solder ( $T_c$ )

| Package Thickness | Volume $\text{mm}^3$ <350 | Volume $\text{mm}^3$ 350 - 2000 | Volume $\text{mm}^3$ >2000 |
|-------------------|---------------------------|---------------------------------|----------------------------|
| <1.6mm            | 260°C                     | 260°C                           | 260°C                      |
| 1.6 - 2.5mm       | 260°C                     | 250°C                           | 245°C                      |
| >2.5mm            | 250°C                     | 245°C                           | 245°C                      |

### Reference JDEC J-STD-020

| Profile Feature  | Standard SnPb Solder                          | Lead (Pb) Free Solder |
|--|---|-----------------------|
| Preheat and Soak   | • Temperature min. ( $T_{smin}$ )             | 100°C                 |
|  | • Temperature max. ( $T_{smax}$ )             | 150°C                 |
|  | • Time ( $T_{smin}$ to $T_{smax}$ ) ( $t_s$ ) | 60-120 Seconds        |
| Average ramp up rate $T_{smax}$ to $T_p$   | 3°C/ Second Max.                              | 3°C/ Second Max.      |
| Liquidous temperature ( $T_L$ )  | 183°C   | 217°C                 |
| Time at liquidous ( $t_L$ )  | 60-150 Seconds                                | 60-150 Seconds        |
| Peak package body temperature ( $T_p$ )*   | Table 1                                       | Table 2               |
| Time ( $t_p$ )** within 5 °C of the specified classification temperature ( $T_c$ ) | 20 Seconds**                                  | 30 Seconds**          |
| Average ramp-down rate ( $T_p$ to $T_{smax}$ )                                     | 6°C/ Second Max.                              | 6°C/ Second Max.      |
| Time 25°C to Peak Temperature  | 6 Minutes Max.                                | 8 Minutes Max.        |

\* Tolerance for peak profile temperature ( $T_p$ ) is defined as a supplier minimum and a user maximum.

\*\* Tolerance for time at peak profile temperature ( $t_p$ ) is defined as a supplier minimum and a user maximum.

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July 2017

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