

High power density, high efficiency, shielded drum core power inductors

Product specifications

| Part Number <sup>6</sup> | OCL <sup>1</sup><br>±20% (μH) | $I_{rms}^2$<br>(A) | $I_{sat}^{13}$<br>(A) | $I_{sat}^{24}$<br>(A) | DCR (Ω)<br>@ +25 °C<br>Typical | DCR (Ω)<br>@ +25 °C<br>Maximum | K-Factor <sup>5</sup> |
|--------------------------|-------------------------------|--------------------|-----------------------|-----------------------|--------------------------------|--------------------------------|-----------------------|
| DRA73-R33-R              | 0.29                          | 8.42               | 14.8                  | 11.8                  | 0.0040                         | 0.0048                         | 636.5                 |
| DRA73-1R0-R              | 0.91                          | 6.50               | 8.22                  | 6.58                  | 0.0067                         | 0.0080                         | 353.6                 |
| DRA73-1R5-R              | 1.36                          | 5.39               | 6.73                  | 5.38                  | 0.0097                         | 0.0117                         | 289.3                 |
| DRA73-2R2-R              | 2.52                          | 4.18               | 4.93                  | 3.95                  | 0.016                          | 0.019                          | 212.2                 |
| DRA73-3R3-R              | 3.18                          | 3.59               | 4.35                  | 3.48                  | 0.022                          | 0.026                          | 187.2                 |
| DRA73-4R7-R              | 4.86                          | 2.92               | 3.52                  | 2.82                  | 0.033                          | 0.040                          | 151.6                 |
| DRA73-6R8-R              | 6.63                          | 2.62               | 2.96                  | 2.37                  | 0.041                          | 0.049                          | 127.3                 |
| DRA73-8R2-R              | 8.06                          | 2.30               | 2.74                  | 2.19                  | 0.053                          | 0.064                          | 117.9                 |
| DRA73-100-R              | 10.27                         | 2.11               | 2.39                  | 1.91                  | 0.064                          | 0.077                          | 102.7                 |
| DRA73-150-R              | 14.98                         | 1.74               | 2.00                  | 1.60                  | 0.094                          | 0.112                          | 86.0                  |
| DRA73-220-R              | 22.39                         | 1.42               | 1.64                  | 1.32                  | 0.141                          | 0.170                          | 70.7                  |
| DRA73-330-R              | 31.84                         | 1.25               | 1.35                  | 1.08                  | 0.183                          | 0.219                          | 57.9                  |
| DRA73-470-R              | 47.83                         | 1.02               | 1.10                  | 0.884                 | 0.275                          | 0.330                          | 47.5                  |
| DRA73-680-R              | 66.89                         | 0.845              | 0.937                 | 0.749                 | 0.397                          | 0.476                          | 40.3                  |
| DRA73-820-R              | 83.77                         | 0.731              | 0.851                 | 0.680                 | 0.530                          | 0.636                          | 36.6                  |
| DRA73-101-R              | 101.7                         | 0.682              | 0.763                 | 0.610                 | 0.609                          | 0.731                          | 32.8                  |
| DRA73-151-R              | 151.1                         | 0.551              | 0.632                 | 0.506                 | 0.932                          | 1.12                           | 27.2                  |
| DRA73-221-R              | 218.8                         | 0.479              | 0.510                 | 0.408                 | 1.23                           | 1.48                           | 21.9                  |
| DRA73-331-R              | 326.4                         | 0.391              | 0.423                 | 0.338                 | 1.85                           | 2.22                           | 18.2                  |
| DRA73-471-R              | 472.6                         | 0.326              | 0.354                 | 0.283                 | 2.67                           | 3.20                           | 15.2                  |
| DRA73-681-R              | 682.9                         | 0.270              | 0.297                 | 0.238                 | 3.89                           | 4.66                           | 12.8                  |
| DRA73-821-R              | 825.3                         | 0.252              | 0.267                 | 0.214                 | 4.46                           | 5.35                           | 11.5                  |
| DRA73-102-R              | 991.9                         | 0.235              | 0.239                 | 0.192                 | 5.15                           | 6.18                           | 10.3                  |

1. Open Circuit Inductance (OCL) Test Parameters: 100 kHz, 0.25 V<sub>rms</sub>, 0.0A dc @ +25 °C
2.  $I_{rms}$ : DC current for an approximate temperature rise of 40 °C without core loss. Derating is necessary for AC currents. PCB layout, trace thickness and width, air-flow and proximity of other heat generating components will affect the temperature rise. It is recommended that the temperature of the part not exceed +165 °C under worst case operating conditions verified in the end application.
3.  $I_{sat}^{13}$ : Peak current for approximately 30% rolloff at +25 °C.

4.  $I_{sat}^{24}$ : Peak current for approximately 40% rolloff at +125 °C.
5. K-factor: Used to determine Bp-p for core loss (see graph).  $B_{p-p} = K * L * \Delta I$ .  $B_{p-p}$ : (Gauss), K: (K-factor from table), L: (Inductance in μH),  $\Delta I$ : (peak-to-peak ripple current in amps).
6. Part Number Definition: DRAxxx-yyy-R
  - DRAxxx = Product code and size
  - yyy= Inductance value in uH, R = decimal point, if no R is present then third character = number of zeros.
  - -R suffix = RoHS compliant

**Product specifications**

| <b>Part Number<sup>6</sup></b> | <b>OCL<sup>1</sup><br/>±20% (μH)</b> | <b>I<sub>rms</sub><sup>2</sup><br/>(A)</b> | <b>I<sub>sat</sub><sup>13</sup><br/>(A)</b> | <b>I<sub>sat</sub><sup>24</sup><br/>(A)</b> | <b>DCR (Ω)<br/>@ +25 °C<br/>Typical</b> | <b>DCR (Ω)<br/>@ +25 °C<br/>Maximum</b> | <b>K-Factor<sup>5</sup></b> |
|--------------------------------|--------------------------------------|--------------------------------------------|---------------------------------------------|---------------------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------|
| DRA74-R33-R                    | 0.29                                 | 7.26                                       | 18.4                                        | 14.7                                        | 0.0054                                  | 0.0064                                  | 547.9                       |
| DRA74-1R0-R                    | 0.90                                 | 6.01                                       | 10.2                                        | 8.18                                        | 0.0078                                  | 0.0094                                  | 304.4                       |
| DRA74-1R5-R                    | 1.31                                 | 5.55                                       | 8.36                                        | 6.69                                        | 0.0092                                  | 0.0110                                  | 249.0                       |
| DRA74-2R2-R                    | 2.33                                 | 4.82                                       | 6.13                                        | 4.91                                        | 0.012                                   | 0.015                                   | 182.6                       |
| DRA74-3R3-R                    | 3.05                                 | 4.16                                       | 5.41                                        | 4.33                                        | 0.016                                   | 0.020                                   | 161.1                       |
| DRA74-4R7-R                    | 4.68                                 | 3.41                                       | 4.38                                        | 3.50                                        | 0.024                                   | 0.029                                   | 130.4                       |
| DRA74-6R8-R                    | 6.51                                 | 2.91                                       | 3.68                                        | 2.94                                        | 0.034                                   | 0.040                                   | 109.6                       |
| DRA74-8R2-R                    | 8.51                                 | 2.66                                       | 3.17                                        | 2.54                                        | 0.040                                   | 0.048                                   | 94.5                        |
| DRA74-100-R                    | 9.62                                 | 2.56                                       | 2.97                                        | 2.37                                        | 0.043                                   | 0.052                                   | 88.4                        |
| DRA74-150-R                    | 15.14                                | 2.06                                       | 2.36                                        | 1.89                                        | 0.067                                   | 0.080                                   | 70.2                        |
| DRA74-220-R                    | 22.25                                | 1.68                                       | 1.96                                        | 1.57                                        | 0.100                                   | 0.120                                   | 58.3                        |
| DRA74-330-R                    | 33.21                                | 1.37                                       | 1.61                                        | 1.29                                        | 0.151                                   | 0.181                                   | 48.1                        |
| DRA74-470-R                    | 46.56                                | 1.14                                       | 1.37                                        | 1.10                                        | 0.219                                   | 0.263                                   | 40.9                        |
| DRA74-680-R                    | 68.37                                | 0.996                                      | 1.11                                        | 0.887                                       | 0.286                                   | 0.343                                   | 33.0                        |
| DRA74-820-R                    | 81.45                                | 0.879                                      | 1.03                                        | 0.827                                       | 0.367                                   | 0.440                                   | 30.8                        |
| DRA74-101-R                    | 98.50                                | 0.822                                      | 0.929                                       | 0.743                                       | 0.419                                   | 0.503                                   | 27.7                        |
| DRA74-151-R                    | 150.9                                | 0.661                                      | 0.748                                       | 0.598                                       | 0.648                                   | 0.780                                   | 22.3                        |
| DRA74-221-R                    | 218.9                                | 0.544                                      | 0.626                                       | 0.501                                       | 0.960                                   | 1.15                                    | 18.6                        |
| DRA74-331-R                    | 328.9                                | 0.435                                      | 0.514                                       | 0.411                                       | 1.50                                    | 1.79                                    | 15.3                        |
| DRA74-471-R                    | 471.5                                | 0.383                                      | 0.420                                       | 0.336                                       | 1.93                                    | 2.31                                    | 12.5                        |
| DRA74-681-R                    | 682.8                                | 0.315                                      | 0.352                                       | 0.282                                       | 2.86                                    | 3.43                                    | 10.5                        |
| DRA74-821-R                    | 815.0                                | 0.279                                      | 0.327                                       | 0.262                                       | 3.63                                    | 4.35                                    | 9.7                         |
| DRA74-102-R                    | 1001.7                               | 0.260                                      | 0.292                                       | 0.234                                       | 4.19                                    | 5.02                                    | 8.7                         |

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2. I<sub>rms</sub>: DC current for an approximate temperature rise of 40 °C without core loss. Derating is necessary for AC currents. PCB layout, trace thickness and width, air-flow and proximity of other heat generating components will affect the temperature rise. It is recommended that the temperature of the part not exceed +165 °C under worst case operating conditions verified in the end application.
3. I<sub>sat</sub>1: Peak current for approximately 30% rolloff at +25 °C.

4. I<sub>sat</sub>2: Peak current for approximately 40% rolloff at +125 °C.
5. K-factor: Used to determine Bp-p for core loss (see graph).  $B_{p-p} = K * L * \Delta I$ . B<sub>p-p</sub>: (Gauss), K: (K-factor from table), L: (Inductance in μH), ΔI (peak-to-peak ripple current in amps).
6. Part Number Definition: DRAxxx-yyy-R
  - DRAxxx = Product code and size
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High power density, high efficiency, shielded drum core power inductors

Product specifications

| Part Number <sup>6</sup> | OCL <sup>1</sup><br>±20% (μH) | $I_{rms}^2$<br>(A) | $I_{sat}^1$<br>(A) | $I_{sat}^2$<br>(A) | DCR (Ω)<br>@ +25 °C<br>Typical | DCR (Ω)<br>@ +25 °C<br>Maximum | K-Factor <sup>5</sup> |
|--------------------------|-------------------------------|--------------------|--------------------|--------------------|--------------------------------|--------------------------------|-----------------------|
| DRA124-R47-R             | 0.42                          | 13.5               | 30.8               | 24.6               | 0.0024                         | 0.0028                         | 196.9                 |
| DRA124-1R0-R             | 0.82                          | 11.7               | 22.0               | 17.6               | 0.0031                         | 0.0038                         | 140.7                 |
| DRA124-1R5-R             | 1.36                          | 9.36               | 17.1               | 13.7               | 0.0049                         | 0.0058                         | 109.4                 |
| DRA124-2R2-R             | 2.04                          | 7.64               | 14.0               | 11.2               | 0.0070                         | 0.0090                         | 89.5                  |
| DRA124-3R3-R             | 2.79                          | 6.94               | 11.9               | 9.48               | 0.0090                         | 0.011                          | 75.7                  |
| DRA124-4R7-R             | 4.74                          | 5.47               | 9.06               | 7.25               | 0.014                          | 0.017                          | 57.9                  |
| DRA124-6R8-R             | 7.28                          | 4.46               | 7.33               | 5.87               | 0.021                          | 0.026                          | 46.9                  |
| DRA124-8R2-R             | 8.88                          | 3.87               | 6.70               | 5.36               | 0.028                          | 0.034                          | 42.8                  |
| DRA124-100-R             | 10.37                         | 3.67               | 6.16               | 4.93               | 0.031                          | 0.038                          | 39.4                  |
| DRA124-150-R             | 14.10                         | 3.10               | 5.31               | 4.25               | 0.044                          | 0.053                          | 34.0                  |
| DRA124-220-R             | 23.00                         | 2.44               | 4.16               | 3.33               | 0.071                          | 0.086                          | 26.6                  |
| DRA124-330-R             | 34.13                         | 1.98               | 3.42               | 2.74               | 0.108                          | 0.130                          | 21.9                  |
| DRA124-470-R             | 46.27                         | 1.78               | 2.91               | 2.33               | 0.134                          | 0.160                          | 18.6                  |
| DRA124-680-R             | 69.77                         | 1.45               | 2.37               | 1.90               | 0.201                          | 0.241                          | 15.1                  |
| DRA124-820-R             | 80.57                         | 1.29               | 2.23               | 1.79               | 0.257                          | 0.309                          | 14.3                  |
| DRA124-101-R             | 98.80                         | 1.20               | 2.00               | 1.60               | 0.296                          | 0.355                          | 12.8                  |
| DRA124-151-R             | 151.7                         | 0.967              | 1.62               | 1.30               | 0.454                          | 0.550                          | 10.4                  |
| DRA124-221-R             | 209.6                         | 0.865              | 1.36               | 1.09               | 0.568                          | 0.680                          | 8.7                   |
| DRA124-331-R             | 326.9                         | 0.690              | 1.09               | 0.874              | 0.892                          | 1.070                          | 7.0                   |
| DRA124-471-R             | 473.0                         | 0.568              | 0.911              | 0.729              | 1.32                           | 1.58                           | 5.8                   |
| DRA124-681-R             | 682.1                         | 0.466              | 0.759              | 0.607              | 1.96                           | 2.35                           | 4.9                   |
| DRA124-821-R             | 826.7                         | 0.406              | 0.697              | 0.557              | 2.57                           | 3.09                           | 4.5                   |
| DRA124-102-R             | 1001.0                        | 0.380              | 0.629              | 0.503              | 2.94                           | 3.52                           | 4.0                   |

1. Open Circuit Inductance (OCL) Test Parameters: 100 kHz, 0.25 V<sub>rms</sub>, 0.0 Adc @ +25 °C
2.  $I_{rms}$ : DC current for an approximate temperature rise of 40 °C without core loss. Derating is necessary for AC currents. PCB layout, trace thickness and width, air-flow and proximity of other heat generating components will affect the temperature rise. It is recommended that the temperature of the part not exceed +165 °C under worst case operating conditions verified in the end application.
3.  $I_{sat}^1$ : Peak current for approximately 30% rolloff at +25 °C.

4.  $I_{sat}^2$ : Peak current for approximately 40% rolloff at +125 °C.
5. K-factor: Used to determine Bp-p for core loss (see graph).  $B_{p-p} = K * L * \Delta I$ .  $B_{p-p}$ : (Gauss), K: (K-factor from table), L: (Inductance in μH),  $\Delta I$  (peak-to-peak ripple current in amps).
6. Part Number Definition: DRAxxx-yyy-R
  - DRAxxx = Product code and size
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Product specifications

| Part Number <sup>6</sup> | OCL <sup>1</sup><br>±20% (μH) | $I_{rms}^2$<br>(A) | $I_{sat}^1$<br>(A) | $I_{sat}^2$<br>(A) | DCR (Ω)<br>@ +25 °C<br>Typical | DCR (Ω)<br>@ +25 °C<br>Maximum | K-Factor <sup>5</sup> |
|--------------------------|-------------------------------|--------------------|--------------------|--------------------|--------------------------------|--------------------------------|-----------------------|
| DRA125-R47-R             | 0.45                          | 14.7               | 33.2               | 26.6               | 0.0025                         | 0.0030                         | 176.9                 |
| DRA125-1R0-R             | 0.85                          | 12.7               | 23.7               | 19.0               | 0.0034                         | 0.0042                         | 126.4                 |
| DRA125-1R5-R             | 1.41                          | 12.9               | 18.4               | 14.8               | 0.0033                         | 0.0039                         | 98.3                  |
| DRA125-2R2-R             | 2.12                          | 10.6               | 15.1               | 12.1               | 0.0048                         | 0.0058                         | 80.4                  |
| DRA125-3R3-R             | 2.89                          | 8.63               | 12.8               | 10.2               | 0.0073                         | 0.0087                         | 68.0                  |
| DRA125-4R7-R             | 4.90                          | 7.67               | 9.76               | 7.81               | 0.0092                         | 0.011                          | 52.0                  |
| DRA125-6R8-R             | 6.23                          | 6.81               | 8.74               | 6.99               | 0.012                          | 0.014                          | 46.6                  |
| DRA125-8R2-R             | 7.49                          | 6.41               | 7.90               | 6.32               | 0.013                          | 0.016                          | 42.1                  |
| DRA125-100-R             | 9.22                          | 5.57               | 7.22               | 5.77               | 0.017                          | 0.021                          | 38.5                  |
| DRA125-150-R             | 14.67                         | 4.45               | 5.72               | 4.58               | 0.027                          | 0.033                          | 30.5                  |
| DRA125-220-R             | 20.65                         | 3.95               | 4.74               | 3.79               | 0.035                          | 0.042                          | 25.3                  |
| DRA125-330-R             | 31.47                         | 3.19               | 3.86               | 3.09               | 0.053                          | 0.064                          | 20.6                  |
| DRA125-470-R             | 47.83                         | 2.59               | 3.13               | 2.51               | 0.081                          | 0.097                          | 16.7                  |
| DRA125-680-R             | 68.48                         | 2.13               | 2.64               | 2.11               | 0.120                          | 0.144                          | 14.0                  |
| DRA125-820-R             | 80.86                         | 2.01               | 2.41               | 1.93               | 0.135                          | 0.162                          | 12.8                  |
| DRA125-101-R             | 97.60                         | 1.75               | 2.21               | 1.77               | 0.178                          | 0.214                          | 11.8                  |
| DRA125-151-R             | 150.0                         | 1.41               | 1.79               | 1.43               | 0.273                          | 0.330                          | 9.5                   |
| DRA125-221-R             | 222.8                         | 1.14               | 1.47               | 1.18               | 0.416                          | 0.500                          | 7.8                   |
| DRA125-331-R             | 325.1                         | 1.00               | 1.19               | 0.96               | 0.543                          | 0.650                          | 6.4                   |
| DRA125-471-R             | 466.3                         | 0.826              | 1.01               | 0.805              | 0.790                          | 0.950                          | 5.4                   |
| DRA125-681-R             | 683.3                         | 0.673              | 0.834              | 0.667              | 1.200                          | 1.440                          | 4.4                   |
| DRA125-821-R             | 813.6                         | 0.632              | 0.758              | 0.606              | 1.360                          | 1.630                          | 4.0                   |
| DRA125-102-R             | 992.8                         | 0.552              | 0.695              | 0.556              | 1.780                          | 2.130                          | 3.7                   |

1. Open Circuit Inductance (OCL) Test Parameters: 100 kHz, 0.25 V<sub>rms</sub>, 0.0 Adc @ +25 °C
2.  $I_{rms}$ : DC current for an approximate temperature rise of 40 °C without core loss. Derating is necessary for AC currents. PCB layout, trace thickness and width, air-flow and proximity of other heat generating components will affect the temperature rise. It is recommended that the temperature of the part not exceed +165 °C under worst case operating conditions verified in the end application.
3.  $I_{sat}^1$ : Peak current for approximately 30% rolloff at +25 °C.

4.  $I_{sat}^2$ : Peak current for approximately 40% rolloff at +125 °C.
5. K-factor: Used to determine Bp-p for core loss (see graph).  $B_{p-p} = K * L * \Delta I$ .  $B_{p-p}$ :(Gauss), K: (K-factor from table), L: (Inductance in μH),  $\Delta I$  (peak-to-peak ripple current in amps).
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  - DRAxxx = Product code and size
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## Product specifications

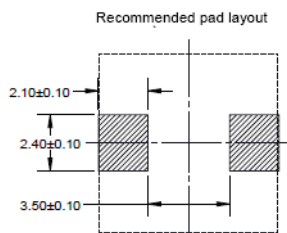
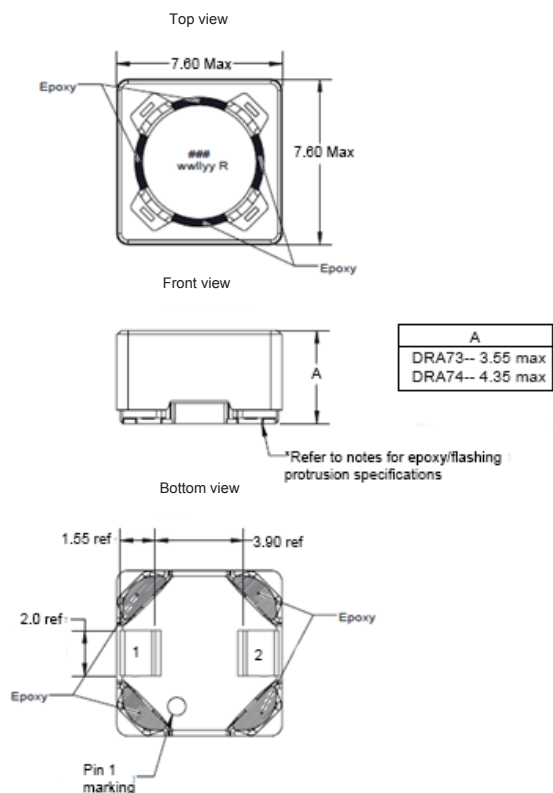
| Part Number <sup>6</sup> | OCL <sup>1</sup><br>±20% (μH) | I <sub>rms</sub> <sup>2</sup><br>(A) | I <sub>sat</sub> <sup>13</sup><br>(A) | I <sub>sat</sub> <sup>24</sup><br>(A) | DCR (Ω) @<br>+25 °C<br>Typical | DCR (Ω) @<br>+25 °C<br>Maximum | K-Factor <sup>5</sup> |
|--------------------------|-------------------------------|--------------------------------------|---------------------------------------|---------------------------------------|--------------------------------|--------------------------------|-----------------------|
| DRA127-R47-R             | 0.41                          | 15.9                                 | 56.0                                  | 44.8                                  | 0.0024                         | 0.0030                         | 120.0                 |
| DRA127-1R0-R             | 0.77                          | 13.6                                 | 40.0                                  | 32.0                                  | 0.0034                         | 0.0040                         | 85.7                  |
| DRA127-1R5-R             | 1.27                          | 12.2                                 | 31.1                                  | 24.9                                  | 0.0043                         | 0.0051                         | 66.7                  |
| DRA127-2R2-R             | 1.92                          | 12.5                                 | 25.5                                  | 20.4                                  | 0.0040                         | 0.0048                         | 54.6                  |
| DRA127-3R3-R             | 3.51                          | 8.54                                 | 18.7                                  | 14.9                                  | 0.0086                         | 0.0104                         | 40.0                  |
| DRA127-4R7-R             | 4.58                          | 8.14                                 | 16.5                                  | 13.2                                  | 0.0094                         | 0.011                          | 35.3                  |
| DRA127-6R8-R             | 6.72                          | 6.52                                 | 13.3                                  | 10.7                                  | 0.015                          | 0.018                          | 28.6                  |
| DRA127-8R2-R             | 8.33                          | 6.33                                 | 12.2                                  | 9.74                                  | 0.016                          | 0.019                          | 26.1                  |
| DRA127-100-R             | 9.63                          | 6.02                                 | 11.2                                  | 8.96                                  | 0.017                          | 0.021                          | 24.0                  |
| DRA127-150-R             | 14.90                         | 4.83                                 | 9.03                                  | 7.23                                  | 0.027                          | 0.032                          | 19.4                  |
| DRA127-220-R             | 21.47                         | 3.98                                 | 7.57                                  | 6.05                                  | 0.040                          | 0.047                          | 16.2                  |
| DRA127-330-R             | 32.01                         | 3.22                                 | 6.22                                  | 4.98                                  | 0.060                          | 0.072                          | 13.3                  |
| DRA127-470-R             | 47.91                         | 2.62                                 | 5.09                                  | 4.07                                  | 0.091                          | 0.110                          | 10.9                  |
| DRA127-680-R             | 68.22                         | 2.33                                 | 4.18                                  | 3.34                                  | 0.115                          | 0.138                          | 9.0                   |
| DRA127-820-R             | 83.91                         | 2.01                                 | 3.84                                  | 3.07                                  | 0.155                          | 0.186                          | 8.2                   |
| DRA127-101-R             | 100.8                         | 1.89                                 | 3.46                                  | 2.77                                  | 0.175                          | 0.210                          | 7.4                   |
| DRA127-151-R             | 151.2                         | 1.52                                 | 2.83                                  | 2.26                                  | 0.269                          | 0.320                          | 6.1                   |
| DRA127-221-R             | 219.8                         | 1.25                                 | 2.35                                  | 1.88                                  | 0.398                          | 0.480                          | 5.0                   |
| DRA127-331-R             | 328.3                         | 1.01                                 | 1.93                                  | 1.54                                  | 0.612                          | 0.730                          | 4.1                   |
| DRA127-471-R             | 474.5                         | 0.827                                | 1.62                                  | 1.29                                  | 0.910                          | 1.10                           | 3.5                   |
| DRA127-681-R             | 676.6                         | 0.736                                | 1.33                                  | 1.06                                  | 1.15                           | 1.39                           | 2.8                   |
| DRA127-821-R             | 824.6                         | 0.637                                | 1.22                                  | 0.978                                 | 1.54                           | 1.85                           | 2.6                   |
| DRA127-102-R             | 998.7                         | 0.598                                | 1.10                                  | 0.878                                 | 1.75                           | 2.10                           | 2.4                   |

1. Open Circuit Inductance (OCL) Test Parameters: 100 kHz, 0.25 V<sub>rms</sub>, 0.0 Adc @ +25 °C
2. I<sub>rms</sub>: DC current for an approximate temperature rise of 40 °C without core loss. Derating is necessary for AC currents. PCB layout, trace thickness and width, air-flow and proximity of other heat generating components will affect the temperature rise. It is recommended that the temperature of the part not exceed +165 °C under worst case operating conditions verified in the end application.
3. I<sub>sat</sub><sup>1</sup>: Peak current for approximately 30% rolloff at +25 °C.

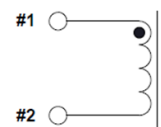
4. I<sub>sat</sub><sup>2</sup>: Peak current for approximately 40% rolloff at +125 °C.
5. K-factor: Used to determine Bp-p for core loss (see graph).  $B_{p-p} = K * L * \Delta I$ .  
B<sub>p-p</sub>: (Gauss), K: (K-factor from table), L: (Inductance in μH), ΔI (peak-to-peak ripple current in amps).
6. Part Number Definition: DRAxxx-yyy-R
  - DRAxxx = Product code and size
  - yyy= Inductance value in μH, R = decimal point, if no R is present then third character = number of zeros.
  - -R suffix = RoHS compliant

## Dimensions - mm

### DRA73 & DRA74

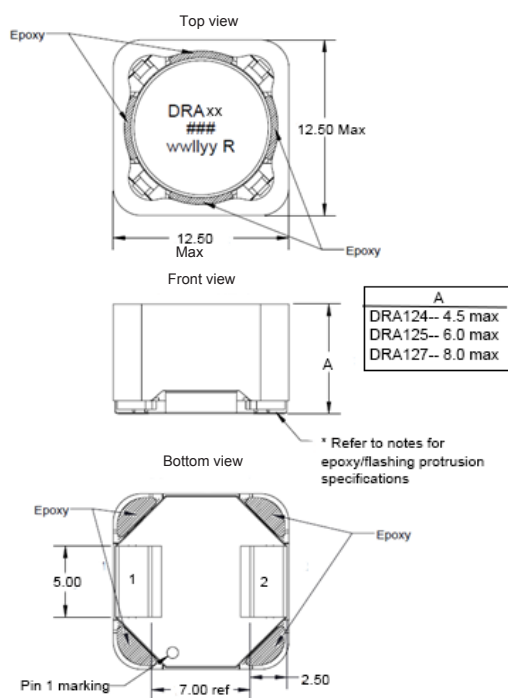


Schematic

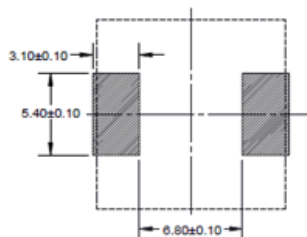


Part Marking: ### = inductance value in  $\mu\text{H}$ , R = decimal point; if no R is present, then 3rd digit equals number of zeros  
wwllyy = Date code, R = revision level  
All soldering surfaces to be coplanar within 0.10 millimeters  
Tolerances are  $\pm 0.2$  millimeters unless stated otherwise.  
Do not route traces or vias underneath the inductor  
\*Special Characteristic epoxy protrusion or any flashing from the plastic on the header/base can be below the terminal surface and must not exceed 0.08 mm beyond the bottom surface of the terminal.

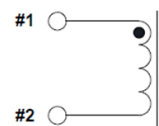
### DRA124, DRA125 & DRA127



Recommended pad layout



Schematic



Part Marking: DRAx, xx = 124, 125 or 127, ### = inductance value in  $\mu\text{H}$ , R = decimal point; if no R is present, then 3rd digit equals number of zeros  
wwllyy = Date code, R = revision level  
All soldering surfaces to be coplanar within 0.10 millimeters  
Tolerances are  $\pm 0.2$  millimeters unless stated otherwise.  
Do not route traces or vias underneath the inductor  
\*Special Characteristic epoxy protrusion or any flashing from the plastic on the header/base can be below the terminal surface and must not exceed 0.08 mm beyond the bottom surface of the terminal.

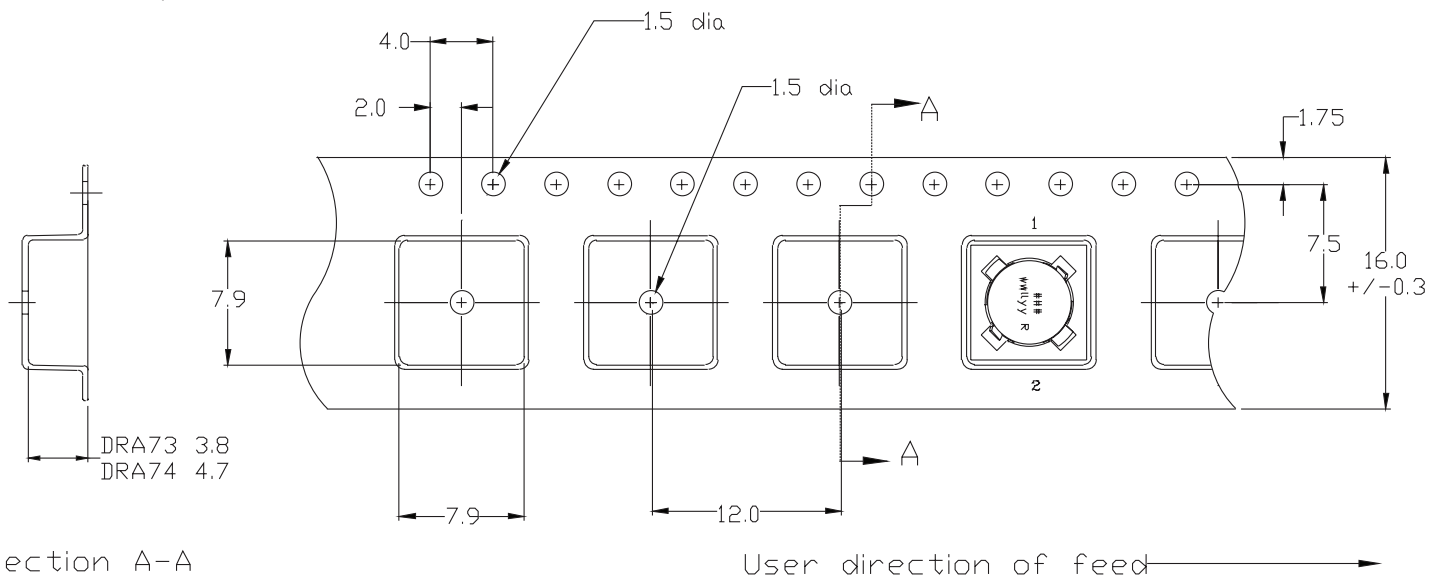
# High power density, high efficiency, shielded drum core power inductors

## Packaging information - mm

### DRA73 & DRA74

Supplied in tape and reel packaging, on a 13" diameter reel:

- DRA73 - 1350 pieces
- DRA74 - 1100 pieces

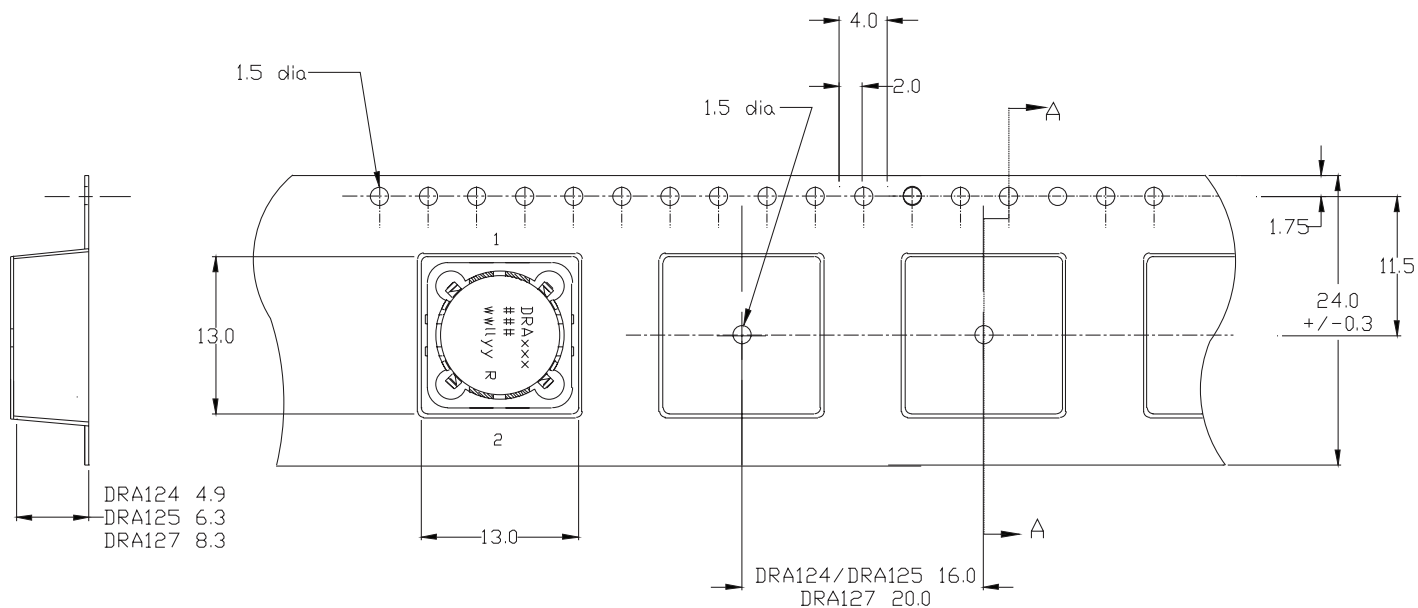


Section A-A

### DRA124, DRA125 & DRA127

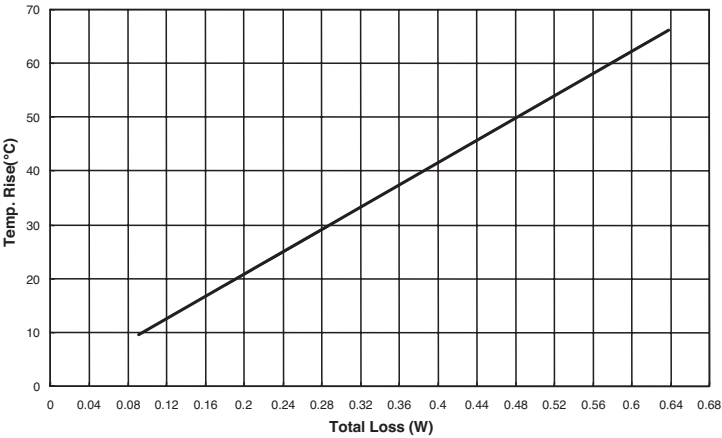
Supplied in tape and reel packaging, on a 13" diameter reel:

- DRA124 - 750 pieces
- DRA125 - 600 pieces
- DRA127 - 350 pieces

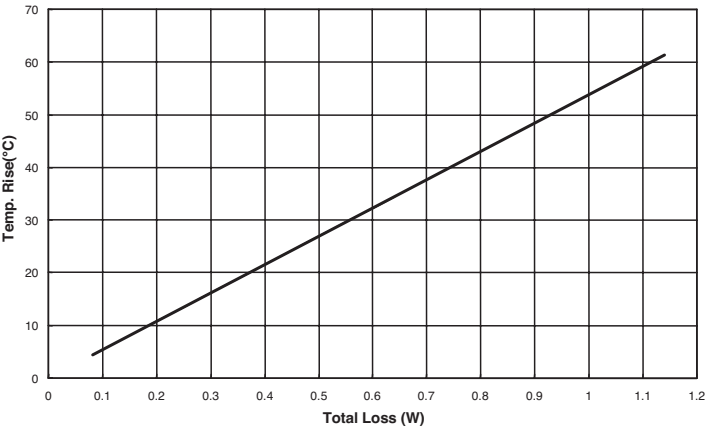


Temperature rise vs. total loss

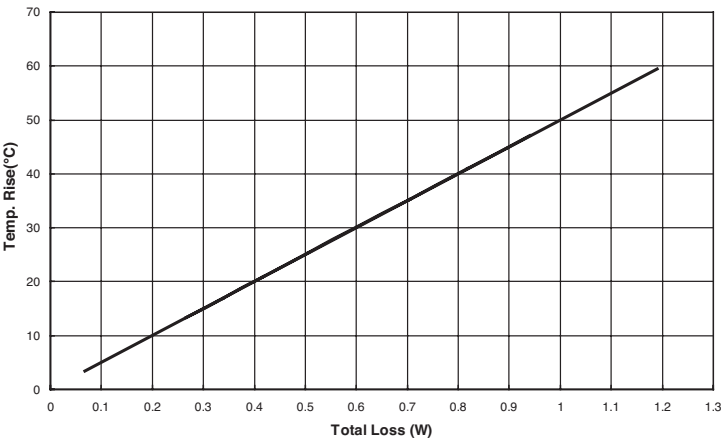
DRA73



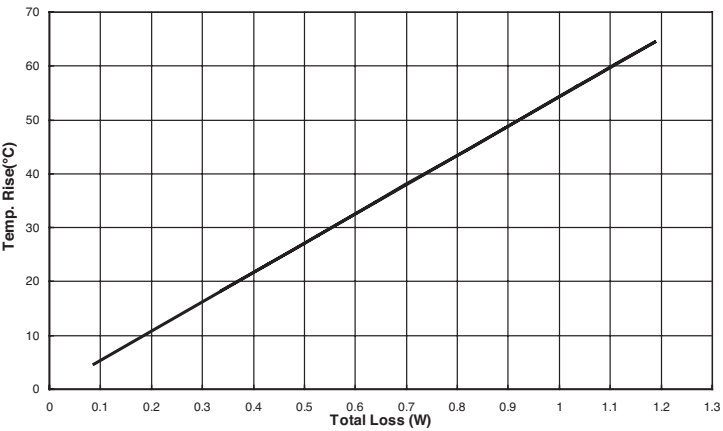
DRA74



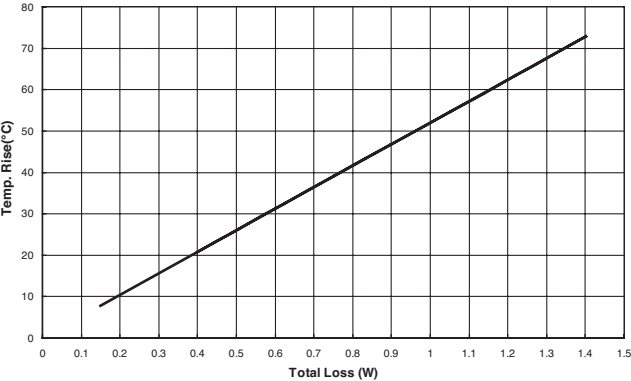
DRA124



DRA125



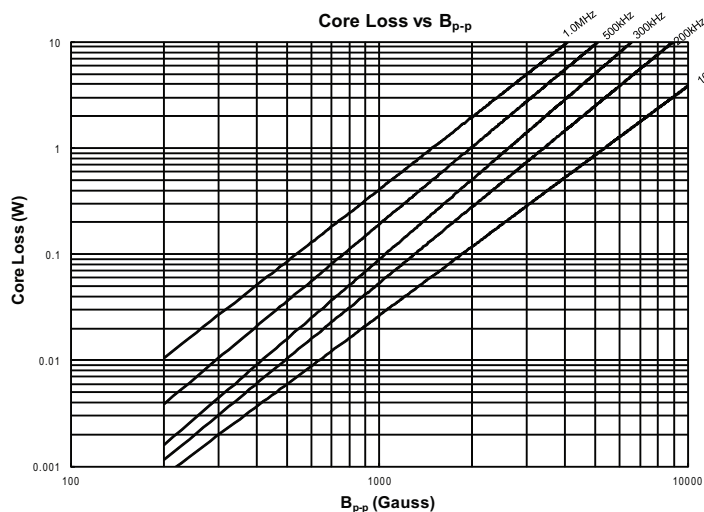
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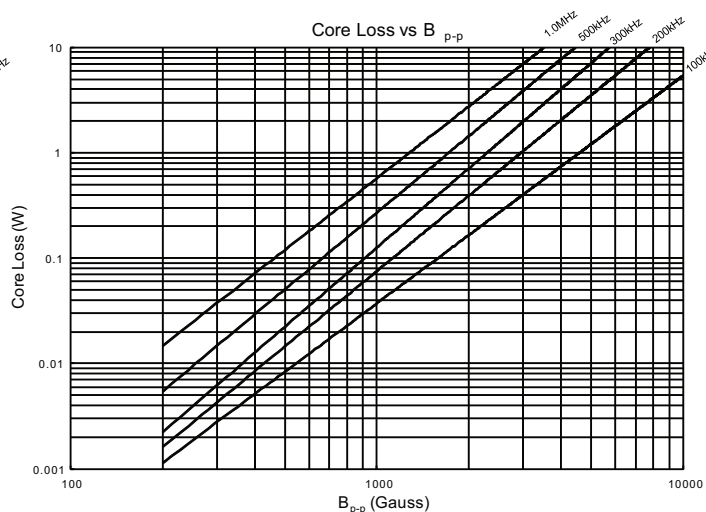
# High power density, high efficiency, shielded drum core power inductors

## Core loss vs. Bp-p

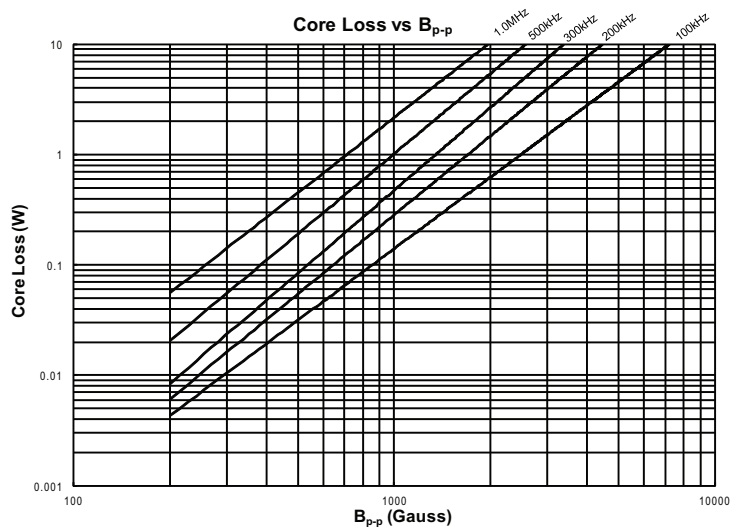
DRA73



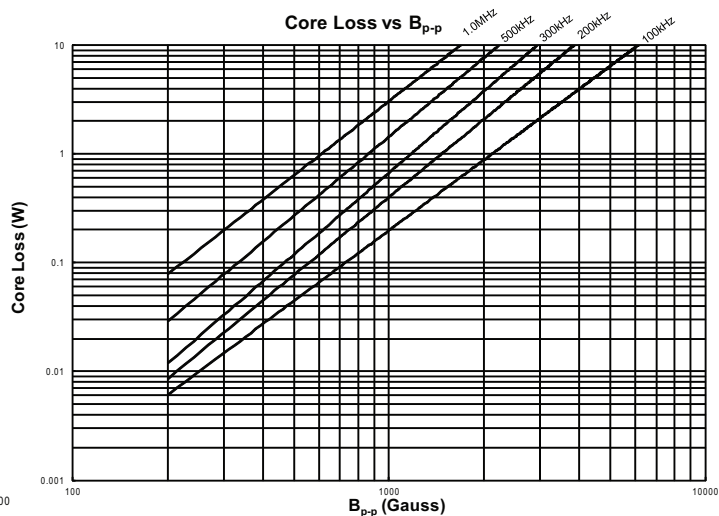
DRA74



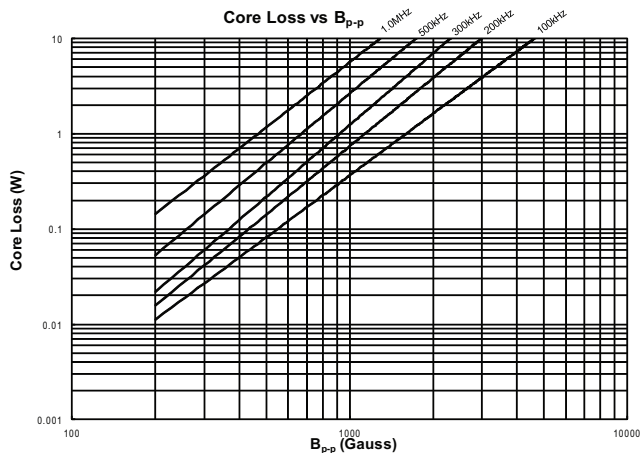
DRA124



DRA125

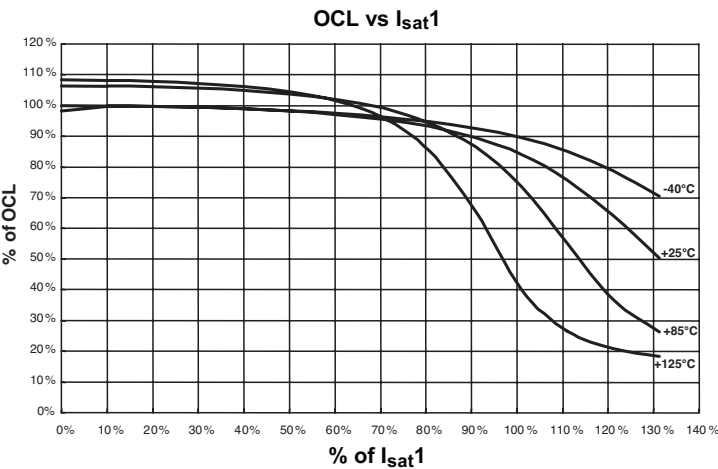


DRA127

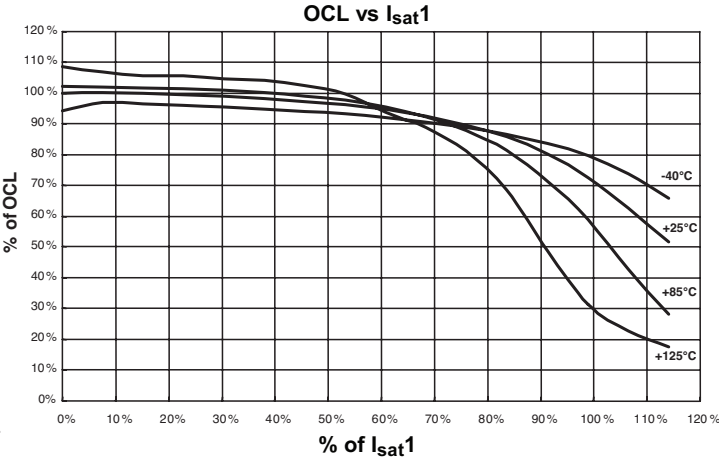


Inductance characteristics

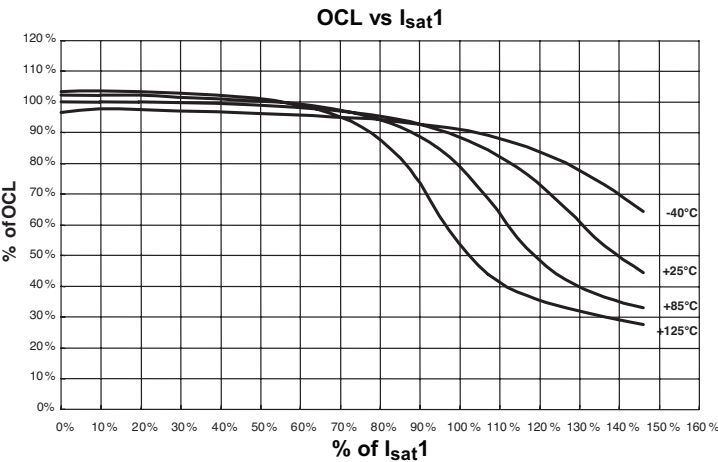
DRA73



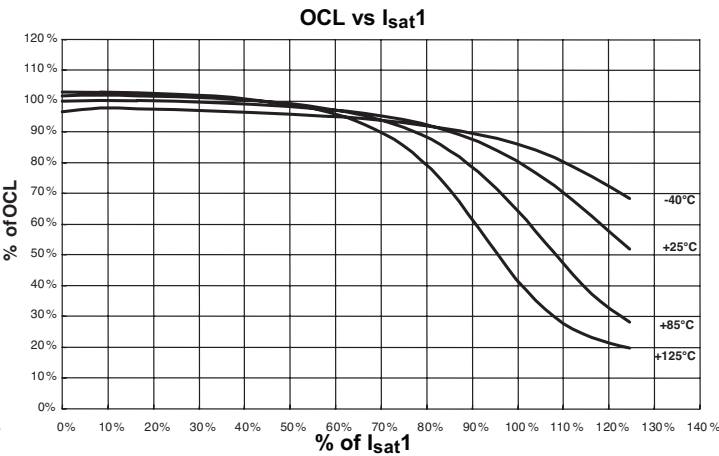
DRA74



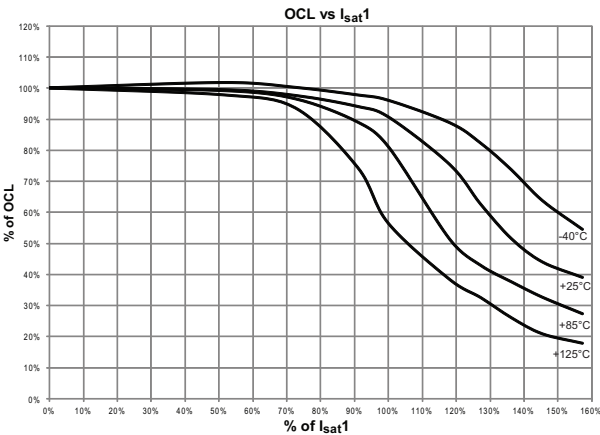
DRA124



DRA125



DRA127



# High power density, high efficiency, shielded drum core power inductors

## Solder Reflow Profile

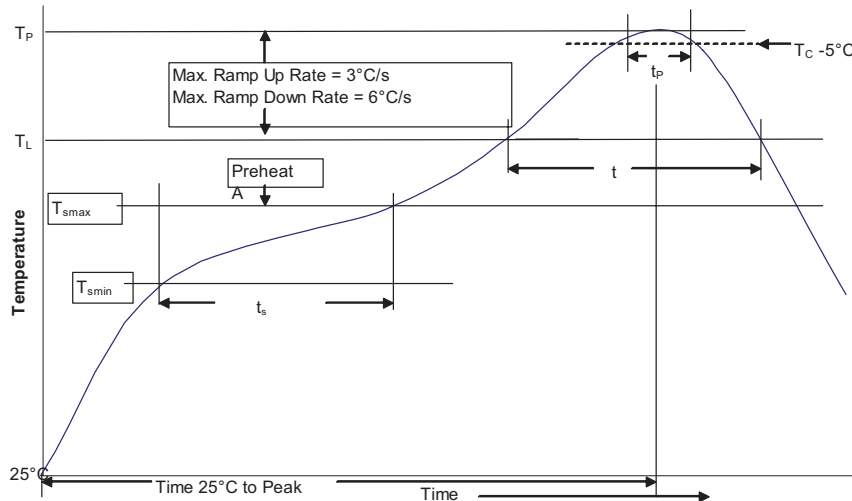


Table 1 - Standard SnPb Solder ( $T_P$ )

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

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

| Package Thickness | Volume $mm^3$ <350 | Volume $mm^3$ 350 - 2000 | Volume $mm^3$ >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                | 150°C                 |
| • Temperature max. ( $T_{smax}$ )                                                  | 150°C                | 200°C                 |
| • Time ( $T_{smin}$ to $T_{smax}$ ) ( $t_s$ )                                      | 60-120 Seconds       | 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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