| Series Number |
|---|
| DS6630 |
| DS1137 |
| DS1145 |
| DS1351 |
| DS1976 |


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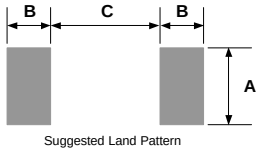
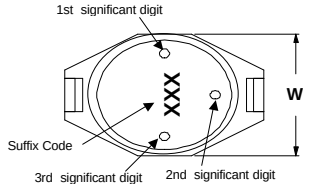
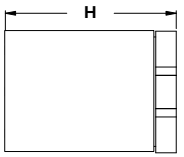
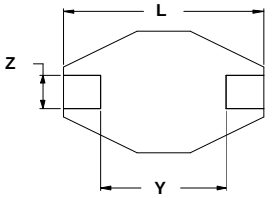
**Shielded Drum Core Inductors, Tape and Reel Easy Part Numbers: ( Series Number ) - ( Suffix Code )(Tolerance), example DS1137-150M**
**Bulk Packaging add (-B) to end of Part Numbering Sequence. example DS1137-150M-B**




**Parts will be marked with Significant Digit Dots OR Suffix code**

| Series Number | Maximum Dimensions | | | Reference Dimensions | | | | |
|---|---|---|---|---|---|---|---|---|
| | L | W | H | Y | Z | A | B | C |
| DS6630 | 0.260" [ 6.60 ] | 0.177" [ 4.50 ] | 0.115" [ 2.92 ] | 0.170" [ 4.32 ] | 0.050" [ 1.27 ] | 0.140" [ 3.56 ] | 0.055" [ 1.40 ] | 0.160" [ 4.06 ] |
| DS1137 | 0.421" [ 10.70 ] | 0.323" [ 8.20 ] | 0.146" [ 3.70 ] | 0.236" [ 6.00 ] | 0.079" [ 2.00 ] | 0.087" [ 2.20 ] | 0.094" [ 2.40 ] | 0.224" [ 5.70 ] |
| DS1145 | 0.421" [ 10.70 ] | 0.323" [ 8.20 ] | 0.177" [ 4.50 ] | 0.236" [ 6.00 ] | 0.079" [ 2.00 ] | 0.087" [ 2.20 ] | 0.094" [ 2.40 ] | 0.224" [ 5.70 ] |
| DS1351 | 0.510" [ 12.95 ] | 0.398" [ 10.10 ] | 0.201" [ 5.10 ] | 0.300" [ 7.62 ] | 0.100" [ 2.54 ] | 0.110" [ 2.80 ] | 0.118" [ 3.00 ] | 0.290" [ 7.37 ] |
| DS1976 | 0.730" [ 18.54 ] | 0.600" [ 15.25 ] | 0.300" [ 7.62 ] | 0.500" [ 12.70 ] | 0.100" [ 2.54 ] | 0.110" [ 2.79 ] | 0.115" [ 2.92 ] | 0.490" [ 12.45 ] |

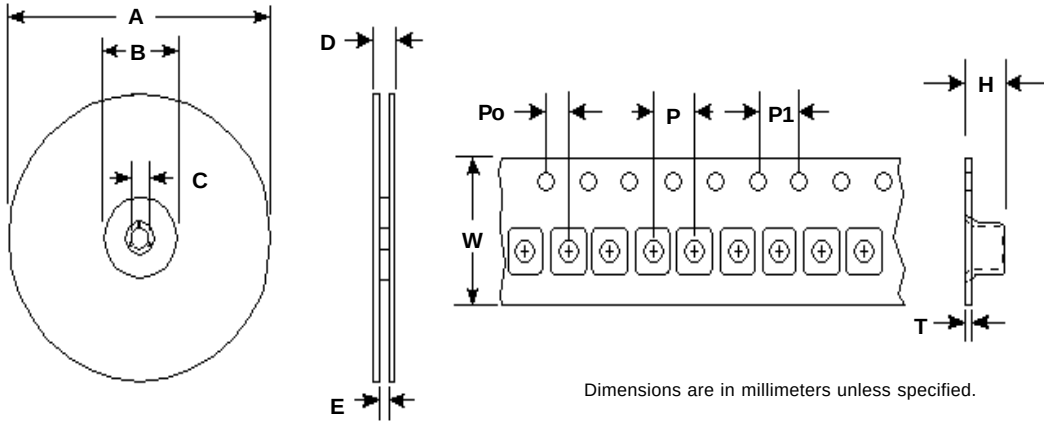
**Features:**

- High energy storage and low resistance.
- Ideal for DC-DC buck or boost conversion.
- Reliable surface mounting.
- Drop-in replacements for industry prevalent competitor series.
- Robust temperature deflection to prevent damage during solder reflow.
- Tape and Reel mechanical specifications available upon request.
- Operating temperature range -40°C to +85°C.

| | | DS6630 | | | DS1137 | | | | DS1145 | | | | DS1351 | | | | DS1976 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L[7] µH | Suffix Codes | DCR[1] W | $I_{MAX}$[2-4] A | Tolerance Suffix[6] | DCR[1] W | $I_{SAT}$[3] A | $I_{RMS}$[5] A | Tolerance Suffix[6] | DCR[1] W | $I_{SAT}$[3] A | $I_{RMS}$[5] A | Tolerance Suffix[6] | DCR[1] W | $I_{SAT}$[3] A | $I_{RMS}$[5] A | Tolerance Suffix[6] | DCR[1] W | $I_{SAT}$[3] A | $I_{RMS}$[5] A | Tolerance Suffix[6] |
| 1.0 | 1R0 | 0.040 | 3.0 | M | | | | | | | | | 0.021 | 5.80 | 5.00 | M | | | | |
| 1.5 | 1R5 | 0.045 | 2.8 | M | | | | | | | | | 0.022 | 5.20 | 4.50 | M | | | | |
| 2.2 | 2R2 | 0.050 | 1.8 | M | | | | | 0.040 | 2.50 | 2.50 | M | 0.032 | 5.00 | 3.80 | M | | | | |
| 3.3 | 3R3 | 0.055 | 1.6 | M | | | | | | | | | 0.039 | 3.90 | 3.30 | M | | | | |
| 3.9 | 3R9 | | | | | | | | 0.055 | 2.10 | 2.10 | M | | | | | | | | |
| 4.7 | 4R7 | 0.060 | 1.4 | M | | | | | | | | | 0.054 | 2.80 | 2.70 | M | | | | |
| 5.0 | 5R0 | | | | 0.080 | 1.70 | 1.70 | M | | | | | | | | | | | | |
| 5.6 | 5R6 | | | | | | | | 0.065 | 1.95 | 1.95 | M | | | | | | | | |
| 6.8 | 6R8 | 0.065 | 1.2 | M | | | | | | | | | 0.075 | 2.80 | 2.20 | M | | | | |
| 7.5 | 7R5 | | | | 0.100 | 1.40 | 1.40 | M | | | | | | | | | | | | |
| 8.2 | 8R2 | | | | | | | | 0.080 | 1.75 | 1.75 | M | | | | | | | | |
| 10 | 100 | 0.075 | 1.0 | M | 0.165 | 1.20 | 1.20 | M | 0.100 | 1.50 | 1.50 | M | 0.101 | 2.40 | 2.00 | M | 0.040 | 7.00 | 3.60 | M |
| 12 | 120 | | | | 0.172 | 1.10 | 1.10 | M | 0.120 | 1.40 | 1.40 | M | | | | | | | | |
| 15 | 150 | 0.090 | 0.80 | M | 0.181 | 1.00 | 1.00 | M | 0.140 | 1.30 | 1.30 | M | 0.150 | 2.00 | 1.50 | M | 0.048 | 5.60 | 3.20 | M |
| 18 | 180 | | | | 0.190 | 0.90 | 0.90 | M | 0.160 | 1.20 | 1.20 | M | | | | | | | | |
| 22 | 220 | 0.110 | 0.70 | M | 0.250 | 0.80 | 0.80 | M | 0.180 | 1.10 | 1.10 | M | 0.207 | 1.50 | 1.30 | M | 0.059 | 5.00 | 2.80 | M |
| 27 | 270 | | | | 0.270 | 0.70 | 0.70 | M | 0.200 | 1.00 | 1.00 | M | | | | | | | | |
| 33 | 330 | 0.190 | 0.60 | M | 0.300 | 0.65 | 0.65 | M | 0.240 | 0.92 | 0.92 | M | 0.334 | 1.40 | 1.10 | M | 0.075 | 4.50 | 2.60 | M |
| 39 | 390 | | | | 0.380 | 0.60 | 0.60 | M | 0.350 | 0.84 | 0.84 | M | | | | | | | | |
| 47 | 470 | 0.230 | 0.50 | M | 0.580 | 0.55 | 0.55 | M | 0.425 | 0.75 | 0.75 | M | 0.472 | 1.00 | 0.80 | M | 0.097 | 4.00 | 2.40 | M |
| 56 | 560 | | | | 0.620 | 0.50 | 0.50 | M | 0.530 | 0.68 | 0.68 | M | | | | | | | | |
| 68 | 680 | 0.290 | 0.40 | M | 0.920 | 0.45 | 0.45 | M | 0.668 | 0.60 | 0.60 | M | | | | | 0.138 | 3.00 | 2.00 | M |
| 82 | 820 | | | | 0.980 | 0.40 | 0.40 | M | 0.730 | 0.54 | 0.54 | M | | | | | | | | |
| 100 | 101 | 0.480 | 0.3 | M | | | | | 1.050 | 0.50 | 0.50 | M | | | | | 0.207 | 2.40 | 1.70 | M |
| 120 | 121 | | | | | | | | 1.120 | 0.45 | 0.45 | M | | | | | | | | |
| 150 | 151 | 0.590 | 0.26 | M | | | | | | | | | | | | | 0.293 | 2.10 | 1.30 | M |
| 180 | 181 | | | | | | | | | | | | | | | | | | | |
| 220 | 221 | 0.770 | 0.22 | M | | | | | | | | | | | | | 0.470 | 1.90 | 1.10 | M |
| 270 | 271 | | | | | | | | | | | | | | | | | | | |
| 330 | 331 | 1.40 | 0.2 | M | | | | | | | | | | | | | 0.780 | 1.10 | 0.86 | M |
| 390 | 391 | | | | | | | | | | | | | | | | | | | |
| 470 | 471 | 1.80 | 0.19 | M | | | | | | | | | | | | | 1.080 | 1.10 | 0.73 | M |
| 680 | 681 | 2.20 | 0.18 | M | | | | | | | | | | | | | 1.400 | 0.96 | 0.64 | M |
| 1000 | 102 | 3.40 | 0.15 | M | | | | | | | | | | | | | 2.010 | 0.80 | 0.53 | M |
| 1500 | 152 | 4.20 | 0.12 | M | | | | | | | | | | | | | | | | |
| 2200 | 222 | 8.50 | 0.10 | M | | | | | | | | | | | | | | | | |
| 3300 | 332 | 11.00 | 0.08 | M | | | | | | | | | | | | | | | | |
| 4700 | 472 | 25.20 | 0.06 | M | | | | | | | | | | | | | | | | |
| 6800 | 682 | 30.80 | 0.04 | M | | | | | | | | | | | | | | | | |
| 10000 | 103 | 39.60 | 0.02 | M | | | | | | | | | | | | | | | | |

1) DCRs (DC resistances) are maximums @20°C.
2) Total current rating (IDC + IAC)
3) DC (Direct Current) current applied to produce a typical 10% drop in nominal inductance.
4) DC (Direct Current) current applied to produce a typical 30°C temperature rise.
5) DC (Direct Current) current applied to produce a typical 40°C temperature rise.
6) Suffix of M = ±20%
7) Inductance measured at 100kHz and 100mV

**Specifications subject to change without notice**




Dimensions are in millimeters unless specified.

| Series Number | Tape and Reel dimensions (mm) | | | | | | | | | | | Reel Quantity | Packaging Specification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A MAX | B MIN | C ± 0.5 | D MAX | E MAX | W ± 0.3 | P ± 0.1 | Po ± 0.1 | P1 ± 0.1 | H ± 0.05 | T ± 0.05 | | |
| **DS6630** | 360.0 | 100.0 | 13.0 | 22.4 | 19.4 | 16.0 | 8.0 | 2.0 | 4.0 | 3.5 | 0.35 | **2500** | **90-0057** |
| **DS1137** | 360.0 | 100.0 | 13.0 | 30.4 | 27.4 | 24.0 | 12.0 | 2.0 | 4.0 | 3.8 | 0.35 | **1000** | **90-0062** |
| **DS1145** | 360.0 | 100.0 | 13.0 | 30.4 | 27.4 | 24.0 | 12.0 | 2.0 | 4.0 | 4.6 | 0.35 | **1000** | **90-0063** |
| **DS1351** | 360.0 | 100.0 | 13.0 | 30.4 | 27.4 | 24.0 | 16.0 | 2.0 | 4.0 | 5.7 | 0.35 | **750** | **90-0055** |
| **DS1976** | 360.0 | 100.0 | 13.0 | 50.4 | 47.4 | 44.0 | 24.0 | 2.0 | 4.0 | 6.9 | 0.35 | **250** | **90-0065** |

**PACKAGING NOTE: Only pressure sensitive cover tape is to be used.**

| Item | Specification | Test Method/Condition |
|---|---|---|
| **Environmental** | | |
| Static Humidity | After exposure part remains within specified electrical parameters for L, Q and DCR. | Expose parts to an environment of +50°C with 90 to 95% R.H. for 100 hours. After exposure, allow parts to dry for 2 hours before measurements are taken. |
| Storage Life | After exposure part remains within specified electrical parameters for L, Q and DCR. | Subject parts to an environment of +50°C 90 to 100% R.H. for 46 to 50 hours. After exposure, allow parts to dry for 2 hours before measurements are taken. |
| Moisture Resistance | After exposure, part shall not have a shorted or open winding. | Per MIL-STD 202 Method 106, ten 24 hour cycles at +25°C to +65°C at 80 to 95% R.H. During any of the first 9 cycles, inductors are revolved from the chamber and exposed to -10°C for 3 hours. Allow parts to dry for 2 hours before measurements are taken. |
| Temperature Cycle | After exposure part remains within specified electrical parameters for L, Q and DCR. | 10 cycles (Air to Air) 1 cycle shall consist of:<br>30 minutes exposure to +85°C<br>30 minutes exposure to -40°C<br>Allow 20 minutes transition between extremes. |
| Temperature Shock | After exposure part remains within specified electrical parameters for L, Q and DCR. | 10 cycles (Air to Air) 1 cycle shall consist of:<br>30 minutes exposure to -45°C<br>30 minutes exposure to +125°C<br>15 seconds maximum transition between temperatures |
| **General** | | |
| Storage Temperature Range | -40°C to +85°C | |
| Operating Temperature Range | -40°C to +85°C | |
| Flammability | IEC 695-2-2 | Withstands needle-flame test |
| **Other** | | |
| Vibration | After exposure part remains within specified electrical parameters for L, Q and DCR. | Inductors shall be randomly vibrated per NAVMAT P9492 profile. Samples shall be subjected to 0.04G/Hz for a minimum of 15 minutes per axis, for each of the three axes. |
| Mechanical Shock | After exposure part remains within specified electrical parameters for L, Q and DCR. | Test per MIL-STD 202 method 213 test condition A, test mounted samples 3 axes, 6 times, totaling 18 shocks. (50Gs, 11ms, half-sine). |
| Solderability | Wetting shall cover 90% minimum of each termination | Dip pads in RMA flux, 63/37 solder (Sn/Pb) at 232°C for 5 seconds ±2 seconds. |
| Component Adhesion (Push Test) | 4 pounds | Apply and measure force with a digital force gauge set. |
| Resistance to Solvent | No sign of degradation in appearance or marking detail. | Withstands 6 minutes of alcohol.<br>Withstands 3 minutes forced spray Freon TMS |
| Load Life | After exposure, part shall not have a shorted or open winding. | Parts to be stored at 110°C for 1000 hours with rated current applied. Parts to be tested at: start, 500 and 1000 hours. Allow 2 hours at room temperature before testing. |