

SERIES:

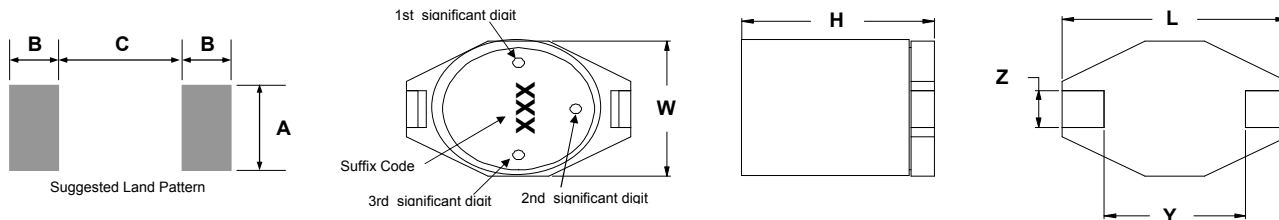
MGDS4



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Shielded, Low Profile, High Current Power Inductors



Parts will be marked with Significant Digit Dots OR Suffix code

| Series Number | Maximum Dimensions | | | | Reference Dimensions | | | | |
|---------------|--------------------|---------|---------|--------|----------------------|--------|--------|--------|--------|
| | Units | L | W | H | Y | Z | A | B | C |
| MGDS4 | inches | 0.510" | 0.398" | 0.201" | 0.300" | 0.100" | 0.110" | 0.118" | 0.290" |
| | [mm] | [12.95] | [10.10] | [5.10] | [7.62] | [2.54] | [2.80] | [3.00] | [7.37] |

Features:

- High energy storage and low resistance
- Reliable surface mounting, flat top for pick and place.
- Smaller real estate than other common inductors.
- Robust temperature deflection to prevent damage during solder reflow.
- Tape and Reel mechanical specifications available upon request.
- Operating Temperature -40°C to +85°C.

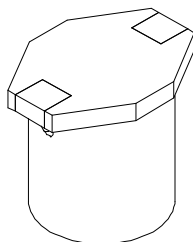
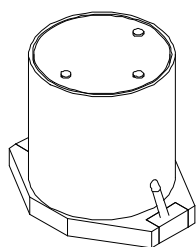
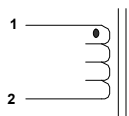


Terminal Plating is Gold Flash over Ni
260°C Maximum reflow temperature per J-STD020

Notes:

- Inductance measured at 100kHz and 250mVrms.
- Isat is a maximum applied AC + DC current.
- Isat current is applied to produce a typical 10% drop in nominal inductance.
- Irms current is applied to produce a typical 40°C temperature rise.
- Tolerance suffix of M = ±20%.
- DCR is a maximum at 20°C.

Schematic Diagram

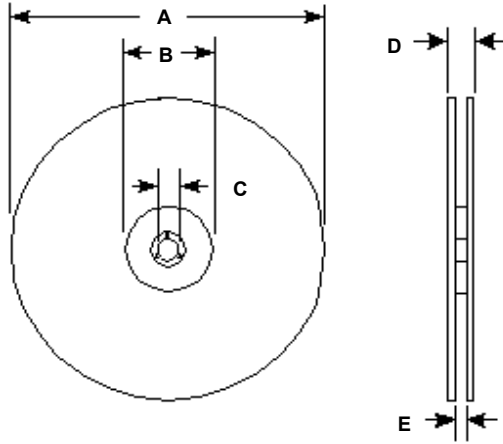


Contact CoEv for additional inductance values

| Lead Free Part Number | L μH | MGDS4 | | | |
|-----------------------|---------|----------|-----------------------|-----------------------|---------------------|
| | | DCR Ω | I _{SAT} A | I _{RMS} A | Tolerance Suffix |
| MGDS4-00001 | 1.0 | 0.021 | 5.80 | 5.00 | M |
| MGDS4-00002 | 1.5 | 0.022 | 5.20 | 4.50 | M |
| MGDS4-00003 | 2.2 | 0.032 | 5.00 | 3.80 | M |
| MGDS4-00004 | 3.3 | 0.039 | 3.90 | 3.30 | M |
| MGDS4-00005 | 4.7 | 0.054 | 2.80 | 2.70 | M |
| MGDS4-00006 | 6.8 | 0.075 | 2.80 | 2.20 | M |
| MGDS4-00007 | 10 | 0.101 | 2.40 | 2.00 | M |
| MGDS4-00012 | 15 | 0.150 | 2.00 | 1.50 | M |
| MGDS4-00008 | 22 | 0.207 | 1.50 | 1.30 | M |
| MGDS4-00009 | 33 | 0.334 | 1.40 | 1.10 | M |
| MGDS4-00010 | 47 | 0.472 | 1.00 | 0.80 | M |
| MGDS4-00011 | 100 | 1.00 | 0.9 | 0.70 | M |
| MGDS4-00013 | 150 | 1.68 | 0.5 | 0.39 | M |
| MGDS4-00014 | 220 | 2.55 | 0.4 | 0.30 | M |
| MGDS4-00015 | 390 | 4.51 | 0.3 | 0.23 | M |

Specifications subject to change

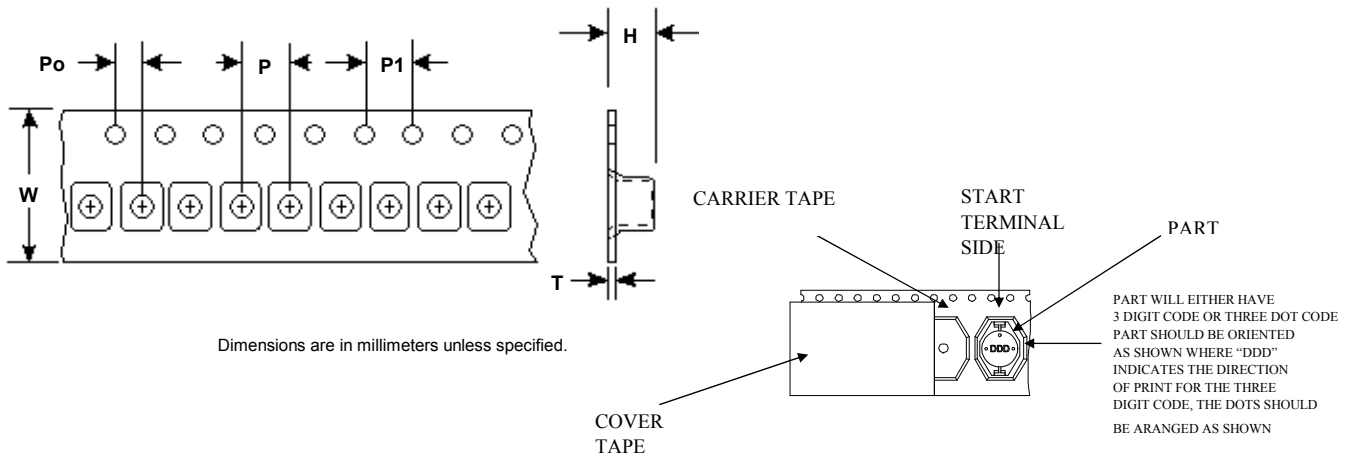
Call Toll Free: 888-978-2638 Website: www.tycopowercomponents.com



Dimensions are in millimeters unless specified.

| Series Number | Reel dimensions | | | | | Reel Qty | Carton (Box) Qty. | Packaging Specification |
|---------------|-----------------|--------|---------|-------------|-----------------|----------|-------------------|-------------------------|
| | Units | A MAX | B MIN | C ± 0.5 | D MAX E MAX | | | |
| MGDS4 | in. | 14.17" | 3.94" | 0.51" | 1.20" 1.08" | 700 | 3500 | 90-0055 |
| | [mm] | [360] | [100.0] | [13.0] | [30.40] [27.40] | | | |

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



| Series | W ± 0.3 | P ± 0.1 | Po ± 0.1 | P1 ± 0.1 | H ± 0.05 | T ± 0.05 |
|--------|-------------|-------------|--------------|--------------|--------------|--------------|
| DS1351 | 24.0 | 16.0 | 2.0 | 4.0 | 5.7 | 0.35 |

Customer Packaging Specifications

For Print Distribution to Customers

Series
MGDS4

Revision
A0

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| 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: 30 minutes exposure to +85°C 30 minutes exposure to -40°C 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: 30 minutes exposure to -45°C 30 minutes exposure to +125°C 15 seconds maximum transition between temperatures | |
| General | | | |
| Range | -40°C to +85°C | | |
| Operating | -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 | Dip pads in RMA flux, 63/37 solder (Sn/Pb) at 232°C for 5 seconds | |
| Component Adhesion | 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. 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. | |
| For Print Distribution to Customers | | <div><div><div><div></div><div>Pb</div></div><div>RoHS Compliant</div></div></div> | |
| | | Series | Revision |
| | | MGDS4 | A0 |
| Sheet 3 of 3 | | | |