

SERIES:

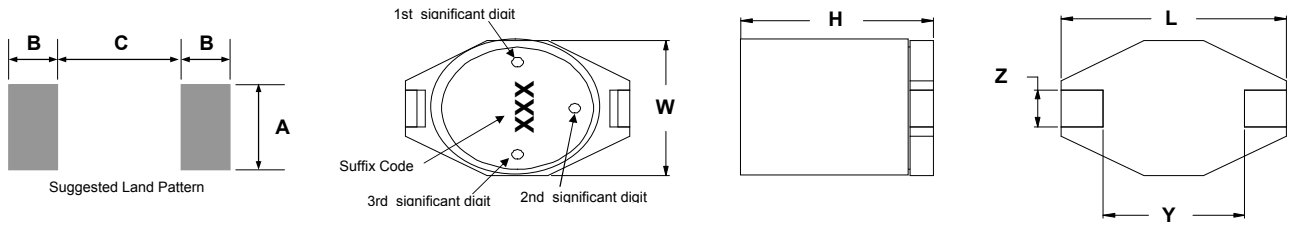
MGDS5



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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 |
| MGDS5 | inches | 0.730" | 0.600" | 0.300" | 0.500" | 0.100" | 0.110" | 0.115" | 0.490" |
| | [mm] | [18.54] | [15.25] | [7.62] | [12.70] | [2.54] | [2.79] | [2.92] | [12.45] |

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.

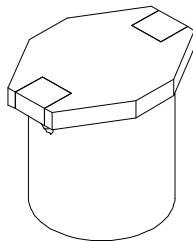
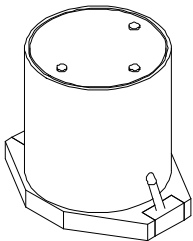
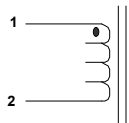


Terminal Plating is Gold Flash over Ni
260°C Maximum reflow temperature per J-STD020

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

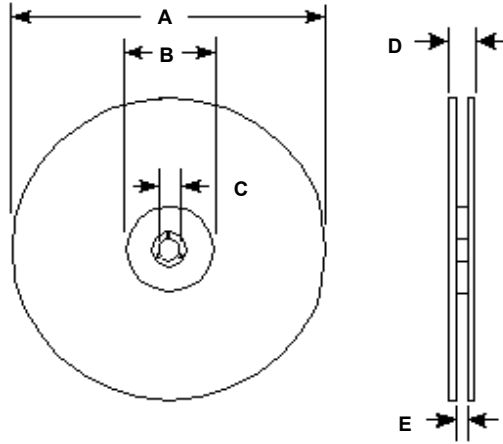


Contact CoEv for additional inductance values

| Lead Free Part Number | L µH | MGDS5 | | | |
|-----------------------|---------|----------|-----------|-----------|---------------------|
| | | DCR Ω | Isat A | Irms A | Tolerance Suffix |
| MGDS5-00014 | 1.2 | 0.0045 | 20 | 10 | M |
| MGDS5-00015 | 10 | 0.040 | 7.00 | 3.60 | M |
| MGDS5-00002 | 15 | 0.048 | 5.60 | 3.20 | M |
| MGDS5-00003 | 22 | 0.059 | 5.00 | 2.80 | M |
| MGDS5-00004 | 33 | 0.075 | 4.50 | 2.60 | M |
| MGDS5-00005 | 47 | 0.097 | 4.00 | 2.40 | M |
| MGDS5-00006 | 68 | 0.138 | 3.00 | 2.00 | M |
| MGDS5-00007 | 100 | 0.207 | 2.40 | 1.70 | M |
| MGDS5-00008 | 150 | 0.293 | 2.10 | 1.30 | M |
| MGDS5-00009 | 220 | 0.470 | 1.90 | 1.10 | M |
| MGDS5-00010 | 330 | 0.780 | 1.10 | 0.86 | M |
| MGDS5-00011 | 470 | 1.080 | 1.10 | 0.73 | M |
| MGDS5-00012 | 680.0 | 1.400 | 0.96 | 0.64 | M |
| MGDS5-00013 | 1000.0 | 2.010 | 0.80 | 0.53 | M |

Specifications subject to change

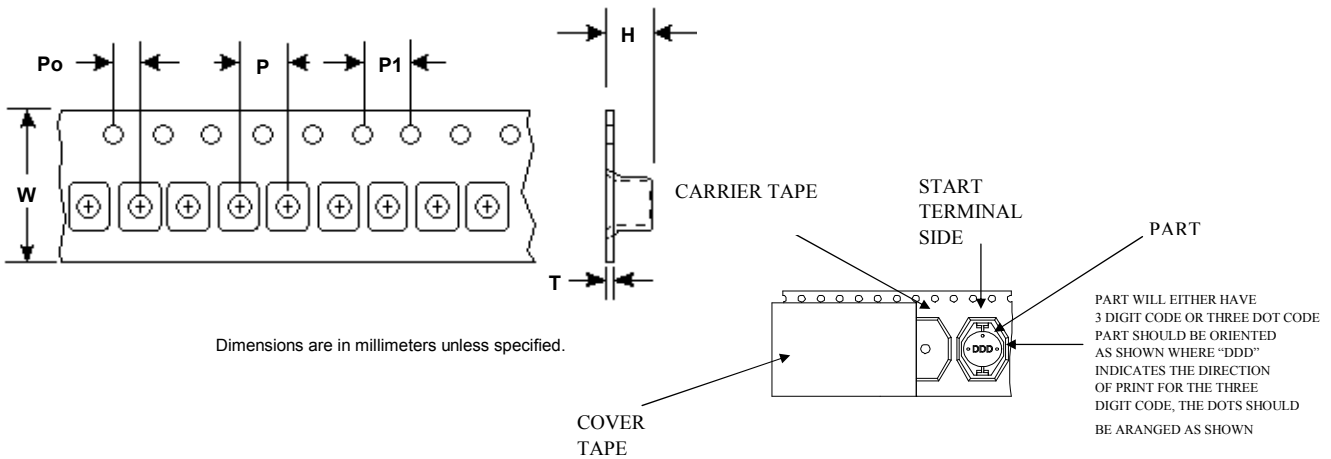
Call Toll Free: 888-978-2638 Website: www.tycopowercomponents.com



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 | | | |
| MGDS5 | in. | 14.17" | 3.94" | 0.51" | 1.98" | 250 | 1000 | 90-0065 |
| | [mm] | [360] | [100.0] | [13.0] | [50.40] | | | |

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



Dimensions are in millimeters unless specified.

| Series | W ±0.3 | P ±0.1 | Po ±0.1 | P1 ±0.1 | H ±0.05 | T ±0.05 |
|--------|--------|--------|---------|---------|---------|---------|
| DS1145 | 44.0 | 24.0 | 2.0 | 4.0 | 6.9 | 0.35 |

Customer Packaging Specifications
For Print Distribution to Customers

| Series | Revision |
|--------------|-----------|
| MGDS5 | B0 |
| Sheet 2 of 7 | |

| 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 | Series | Revision |
| | MGDS5 | B0 |
| | Sheet 3 of 3 | |