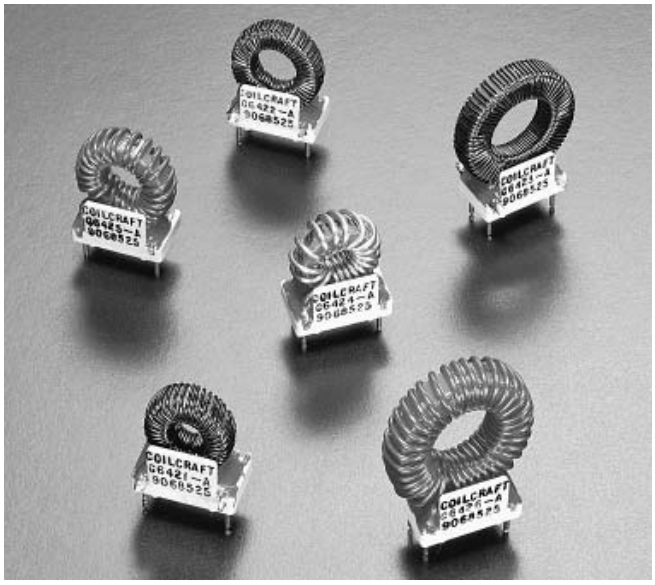
Mag Amp Toroids – G642X Series



These low cost saturable reactor (mag amp) coils are designed to regulate switching power supplies operating at frequencies from 20 kHz to over 100 kHz.

In multi-output circuits requiring tight crossregulation, mag amp control is simple and more cost-effective than adding conventional linear voltage regulators to each output. Mag amps are also particularly advantageous where load current exceeds 1 or 2 amps, because of their efficiency and low heat dissipation.

In addition to the standard 1 and 5 amp DC reactors shown, mag amps for other current or volt-time ratings can be custom-designed.

Coilcraft **Designer's Kit No. P206** contains samples of all values shown. To order, please contact Coilcraft or visit **http://order.coilcraft.com**.

Advantages

- Higher efficiency than linear regulators, especially at higher currents
- Simple cross-regulation of multi-output supplies
- Lower EMI
- Frequency range of 20 kHz to over 100 kHz
- Standardized construction for maximum economy

Electrical Specifications

	G6421-A	G6422-A	G6423-A	G6424-A	G6425-A	G6426-A
Current[1]	1 A	1 A	1 A	5 A	5 A	5 A
Volt-time product (typical)	93 v-µsec	133 v-µsec	372 v-µsec	42 v-µsec	66 v-µsec	186 v-µsec

(Further technical information on Mag Amps is available in Magnetics Inc. bulletin SR-4)

1. Based on 40°C maximum temperature rise.
2. Operating temperature range –40°C to +85°C.
3. Electrical specifications at 25°C.

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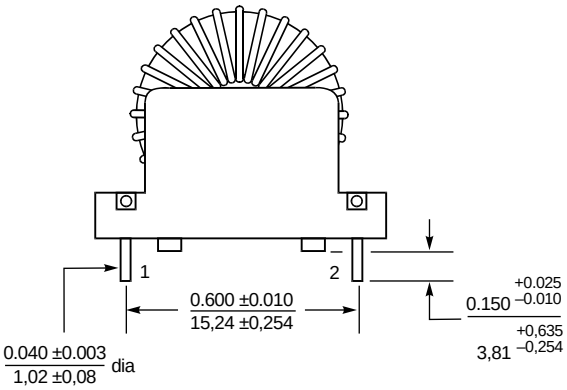
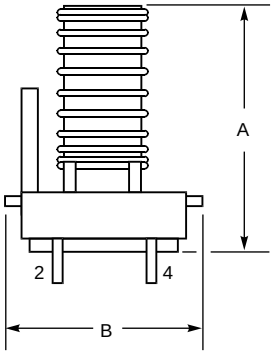
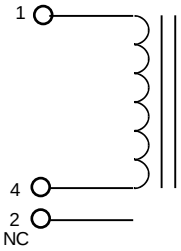
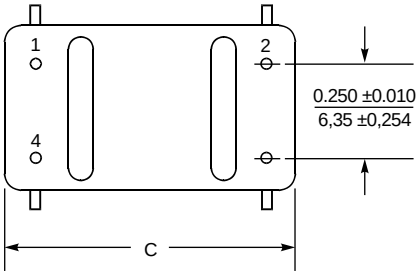
Dimensions









Part number	A max	B max	C max
G6421-A	0.85/21,59	0.65/16,51	0.825/20,96
G6422-A	1.00/25,40	0.65/16,51	0.825/20,96
G6423-A	1.25/31,75	0.65/16,51	1.150/29,21
G6424-A	0.90/22,86	0.55/13,97	0.825/20,96
G6425-A	1.05/26,67	0.55/13,97	0.825/20,96
G6426-A	1.30/33,02	0.55/13,97	1.150/29,21

Test Circuit

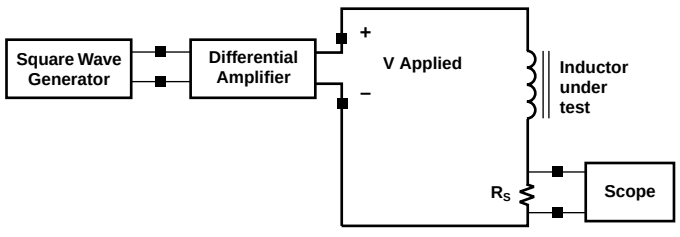
The test circuit below can be used to test the volt-time product supported by each of the mag amp coils.

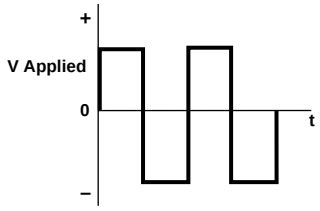
Apply the square wave to the coil and observe the current waveform (voltage across the series resistor). Increase the applied voltage until a spike appears at the end of each half cycle, indicating core saturation.

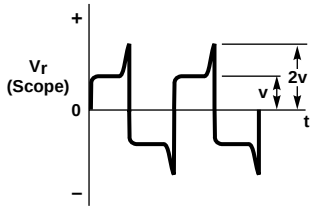
Saturation is defined as the point at which the magnitude of the spike has become twice the peak value of the square wave. (Actually the current square wave is not flat but gradually increases due to the magnetizing current.)

To record the volt-time product, multiply the applied peak voltage by the time required to reach saturation and divide by two.

The series resistor should be as small as possible, without loading the square wave supply. If the square wave generator is powerful enough, the differential amp may not be necessary.







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