



# Planar Transformers

For National Semiconductor  
LM5030 Controller IC



Less than 10 mm high, Coilcraft's planar transformers are ideal for use in high-current telecom power supply applications that require high efficiency in a low-profile package.

These transformers are designed specifically to perform with the National Semiconductor LM5030 Push-Pull Current Mode PWM Controller. They provide three different output ratings to suit a variety of applications. All offer 1500 Vrms primary to secondary isolation.

Coilcraft's A9785-B, A0153-A and B0414-A are output chokes and include an extra winding for auxiliary voltage supply. Our MSS6132-103 functions as the input filter choke in the same circuit. Refer to separate data sheets for additional information on these parts.

Request free evaluation samples by contacting Coilcraft or visiting [www.coilcraft.com](http://www.coilcraft.com).

| Part number <sup>1</sup> | Output power (W) | Input voltage range (V) | Output voltage (V) | Output current <sup>2</sup> (A rms) | Primary inductance <sup>3</sup> min (mH) | Leakage inductance max (μH) | DCR max (Ohms) |       | Turns ratio pri : sec |
|--------------------------|------------------|-------------------------|--------------------|-------------------------------------|------------------------------------------|-----------------------------|----------------|-------|-----------------------|
|                          |                  |                         |                    |                                     |                                          |                             | pri            | sec   |                       |
| A9784-BL_                | 33               | 36 – 75                 | 3.3                | 10.0                                | 1.30                                     | 3.50                        | 0.850          | 0.016 | 6 : 1                 |
| A0152-AL_                | 35               | 36 – 75                 | 5.0                | 7.0                                 | 1.30                                     | 2.50                        | 0.850          | 0.018 | 4 : 1                 |
| B0310-AL_                | 60               | 36 – 75                 | 12.0               | 5.0                                 | 1.30                                     | 2.50                        | 0.850          | 0.060 | 2 : 1                 |

1. When ordering, please specify **packaging** code:

**B0310-AL D**

**Packaging:** **D** = 13" machine ready reel. EIA-481 embossed plastic tape (250 parts per full reel).

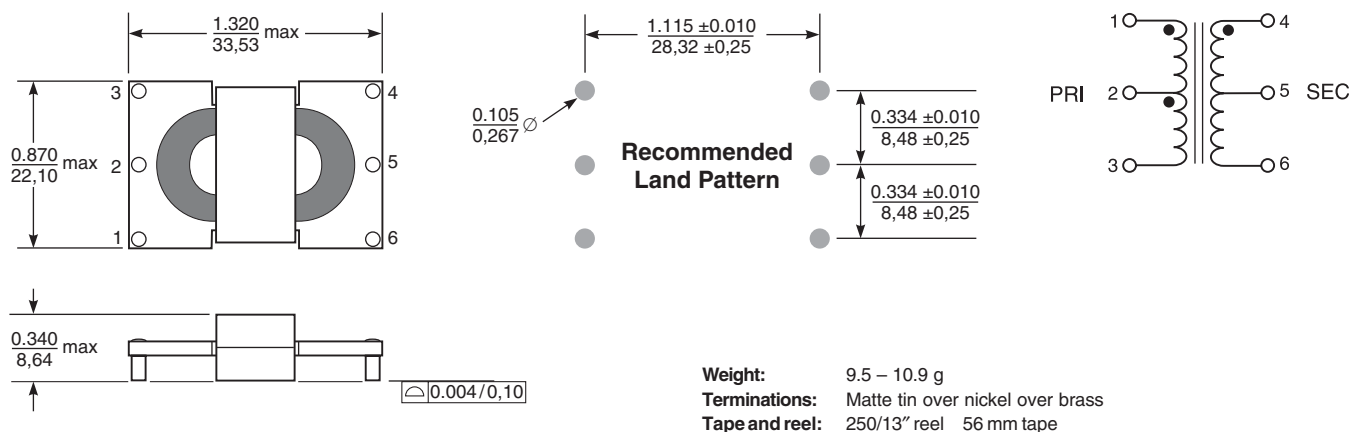
**B** = Less than full reel. In tape, but not machine ready. To have a leader and trailer added (\$25 charge), use code letter D instead.

2. 15°C temperature rise typical at output current.

3. Inductance measured between pins 1 and 3 at 250 kHz, 0.1 Vrms, 0 Adc.

4. Operating temperature range: -40°C to +85°C.

5. Electrical specifications at 25°C.



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1102 Silver Lake Road Cary, Illinois 60013 Phone 847/639-6400 Fax 847/639-1469

E-mail [info@coilcraft.com](mailto:info@coilcraft.com) Web <http://www.coilcraft.com>



# Output Choke Inductors

For National Semiconductor  
LM5030 Controller IC



These low-profile inductors are designed specifically for the National Semiconductor LM5030 Push-Pull Current Mode PWM Controllers. The 33 Watt design specifies our A9785-B, the 35 Watt design uses the A0153-A and the 60 Watt design uses the B0414-A.

They are the output chokes for Coilcraft's planar transformers (A9784-B, A0152-A and B0310-A). The auxiliary winding controls the input current to the PWM. All inductors offer 1500 Vrms main to auxiliary isolation.

The National Semiconductor design also specifies Coilcraft's MSS6132-103 power inductor for the input choke. Refer to separate data sheets for additional information on these Coilcraft parts.

Request free evaluation samples by contacting Coilcraft or visiting [www.coilcraft.com](http://www.coilcraft.com).

| Part number <sup>1</sup> | Power (W) | Inductance <sup>2</sup> at 0 Adc ±10% (μH) | Inductance <sup>2</sup> ±10% (μH) | DCR max (Ohms) |             | Turns ratio main : aux | Isat <sup>3</sup> (A) | Irms <sup>4</sup> (A) |
|--------------------------|-----------|--------------------------------------------|-----------------------------------|----------------|-------------|------------------------|-----------------------|-----------------------|
|                          |           |                                            |                                   | Main winding   | Aux winding |                        |                       |                       |
| A9785-BL_                | 33        | 7.0                                        | 6.71 @ 12.0 Adc                   | 0.0066         | 1.95        | 1 : 3.2                | 15.0                  | 12.5                  |
| A0153-AL_                | 35        | 7.0                                        | 6.20 @ 10.0 Adc                   | 0.0066         | 1.32        | 1 : 2.2                | 14.5                  | 12.5                  |
| B0414-AL_                | 60        | 13.8                                       | 13.80 @ 5.0 Adc                   | 0.0098         | 0.68        | 1 : 1.09               | 8.0                   | 9.5                   |

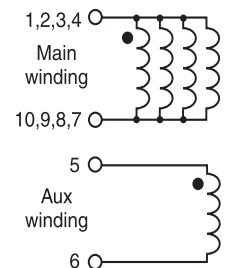
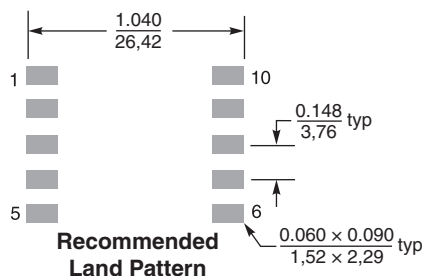
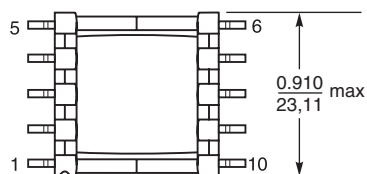
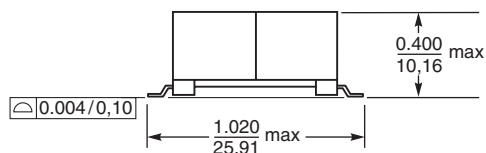
1. When ordering, please specify **packaging** code:

## B0414-ALD

**Packaging:** D = 13" machine ready reel. EIA-481 embossed plastic tape (200 parts per full reel).

B = Less than full reel. In tape, but not machine ready. To have a leader and trailer added (\$25 charge), use code letter D instead.

- Inductance measured at 10.0 kHz, 0.1 Vrms.
- DC current at which inductance drops 12% (typ) from its value without current.
- Average current for a 40°C rise from 25°C ambient.
- Operating temperature range -40°C to +85°C.
- Electrical specifications at 25°C.



**Weight:** 11.3 – 11.9 g  
**Terminations:** Nickel/tin over phos bronze  
**Tape and reel:** 200/13" 44 mm tape width

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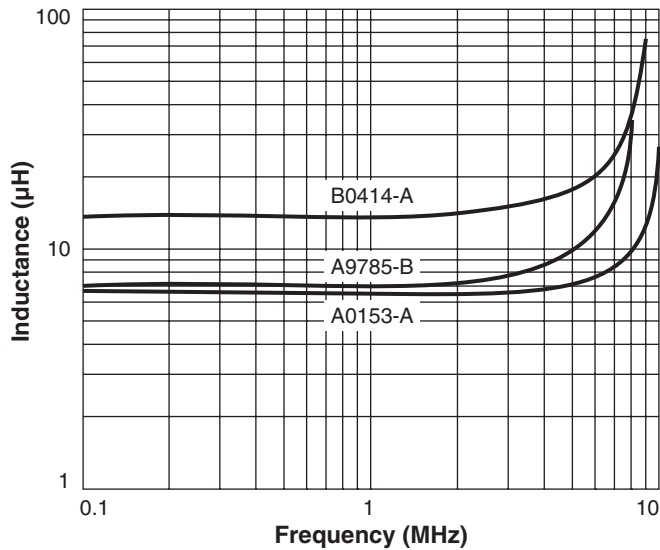
1102 Silver Lake Road Cary, Illinois 60013 Phone 847/639-6400 Fax 847/639-1469

E-mail [info@coilcraft.com](mailto:info@coilcraft.com) Web <http://www.coilcraft.com>

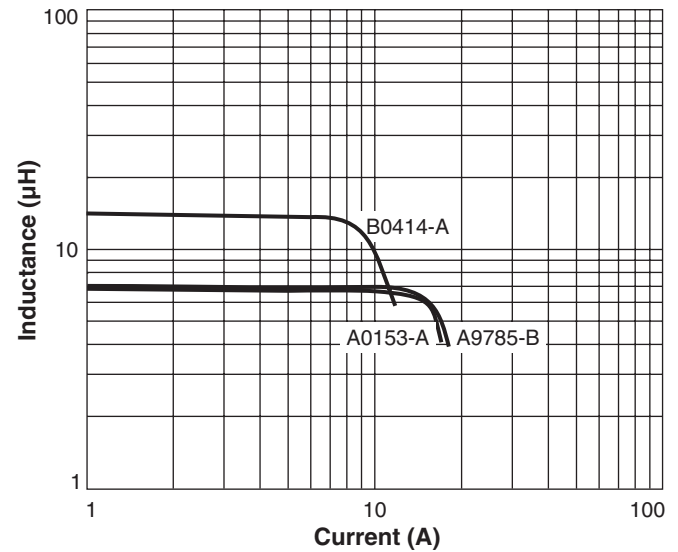


# Output Choke Inductors for LM5030 IC

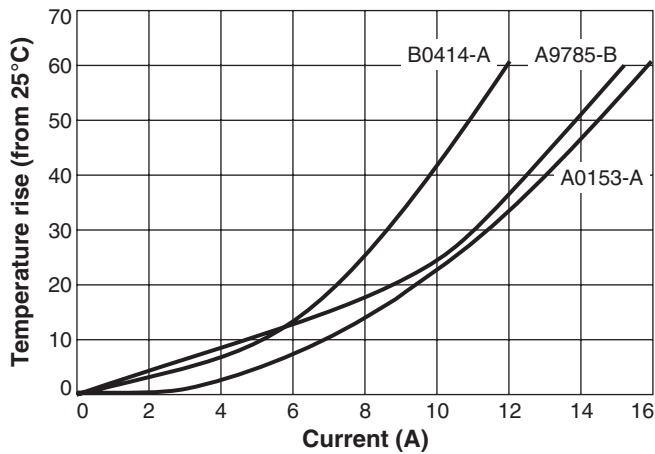
## Typical L vs Frequency



## Typical L vs Current



## Typical Temperature Rise vs Current



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1102 Silver Lake Road Cary, Illinois 60013 Phone 847/639-6400 Fax 847/639-1469

E-mail [info@coilcraft.com](mailto:info@coilcraft.com) Web <http://www.coilcraft.com>