

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.

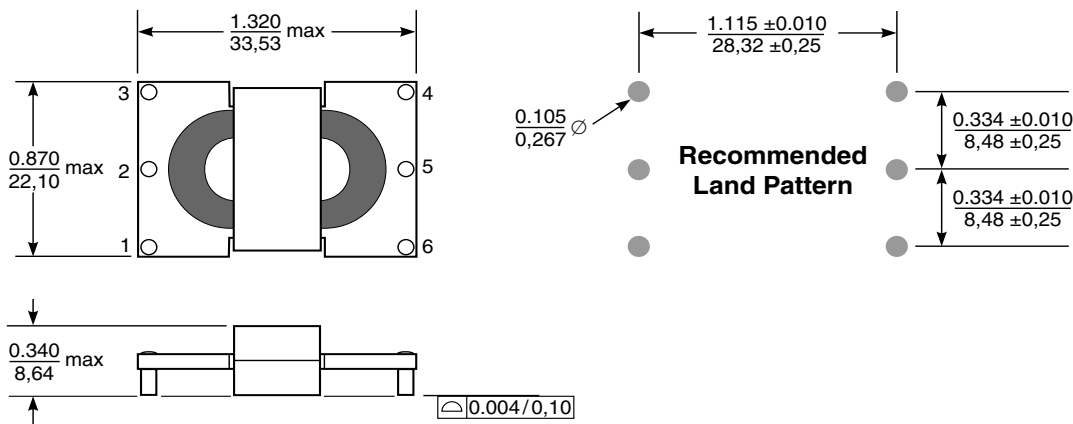
These transformers are designed specifically to perform with the National Semiconductor LM5030 Push-Pull Current Mode PWM Controller. They provide three different output ratings to suit a variety of applications. All offer 1500 Vrms primary to secondary isolation.

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.

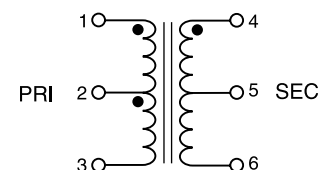
| Part number | Output power (W) | Input voltage range (V) | Output voltage (V) | Output current ¹ (A rms) | Primary inductance ² min (mH) | Leakage inductance max (μH) | DCR max (Ohms) | | Turns ratio pri : sec |
|-------------|------------------|-------------------------|--------------------|-------------------------------------|--|----------------------------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

- 15°C temperature rise typical at output current.
- Inductance measured between pins 1 and 3 at 250 kHz, 0.1 Vrms, 0 Adc.
- Operating temperature range: -40°C to +85°C.
- Electrical specifications at 25°C.



Tape and reel: 250/13" 56 mm tape width

Schematic



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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.

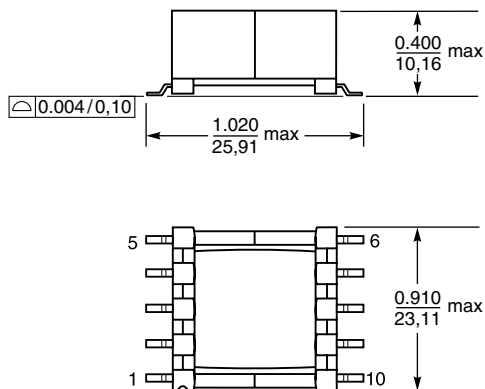
They are the output chokes for Coilcraft's planar transformers (A9784-B, A0152-A and B0310-A). The auxiliary winding controls the input current to the PWM. All inductors offer 1500 Vrms main to auxiliary isolation.

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.

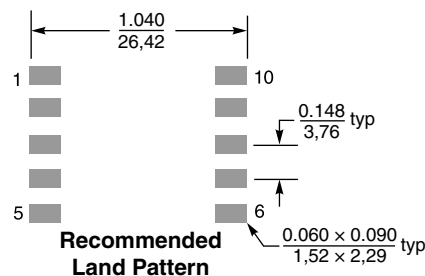
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| Part number | Power (W) | Inductance ¹ at 0 Adc ±10% (µH) | Inductance ¹ ±10% (µH) | DCR max (Ohms) | | Turns ratio main : aux | Isat ² (A) | Irms ³ (A) |
|-------------|-----------|--|-----------------------------------|----------------|-------------|------------------------|-----------------------|--------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

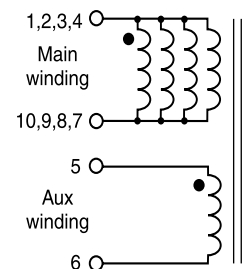
1. Inductance measured at 10.0 kHz, 0.1 Vrms.
2. DC current at which inductance drops 12% (typ) from its value without current.
3. Average current for a 40°C rise from 25°C ambient.
4. Operating temperature range -40°C to +85°C.
5. Electrical specifications at 25°C.



Tape and reel: 200/13" 44 mm tape width



Schematic



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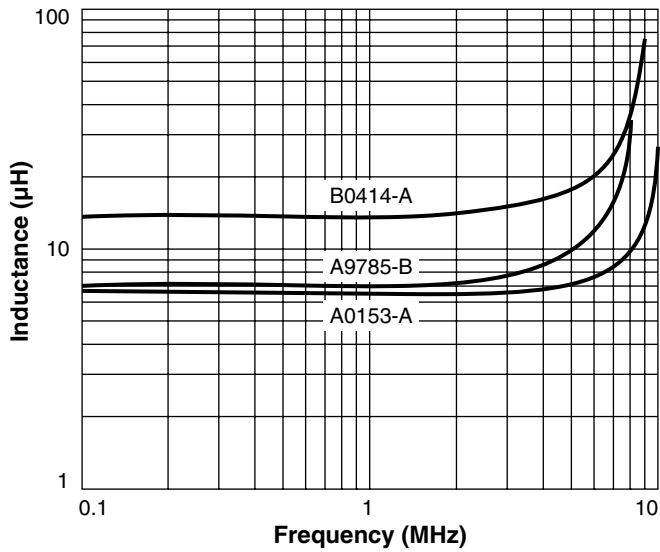
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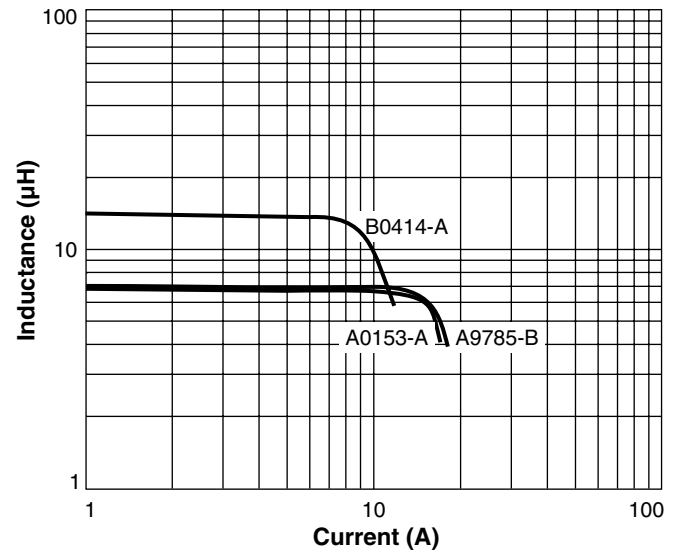
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Output Choke Inductors for LM5030 IC

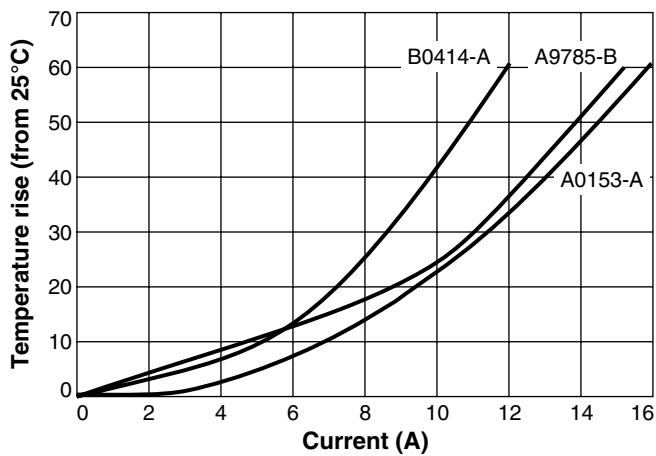
Typical L vs Frequency



Typical L vs Current



Typical Temperature Rise vs Current



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Input Choke Inductor

For National Semiconductor
LM5030 Controller IC



The MSS6132 power inductor is specified by National Semiconductor for its LM5030 controller IC. It acts as the input choke for Coilcraft's A9784-B planar transformer (see separate data sheet).

This magnetically shielded, low-profile power inductor is designed for high-density mounting and is available on tape and reel for auto-insertion. Its industry-standard shape and flat top design ensures reliable pick and place handling.

Request free evaluation samples by contacting Coilcraft or visiting www.coilcraft.com.

| Part number ¹ | L ±20% ² (μH) | DCR max (Ω) | SRF ³ typ (MHz) | Isat ⁴ (A) | I _{rms} (A) ⁵ | |
|--------------------------|-----------------------------|-------------------|----------------------------------|--------------------------|-----------------------------------|--------------|
| | | | | | 20°C rise | 40°C rise |
| MSS6132-103MX_ | 10 | 0.085 | 39.0 | 1.30 | 1.90 | 2.50 |

1. When ordering, please specify packaging code:

MSS6132-103MX_

Packaging code: _____

C = 7" machine-ready reel EIA-481 embossed plastic tape (500 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 C instead.

D = 13" machine-ready reel EIA-481 embossed plastic tape. Factory order only, not stocked (1500 per reel per full reel).

2. Inductance tested at 100 kHz, 0.1 V_{rms}, 0 Adc.

3. SRF measured using Agilent/HP4191A or equivalent.

4. The DC current at which the inductance drops 10% (typ) from its value without current.

5. Average current for temperature rise above 25°C ambient.

6. Operating temperature range -40°C to +85°C.

7. Electrical specifications at 25°C.

See Qualification Standards section for environmental and test data.

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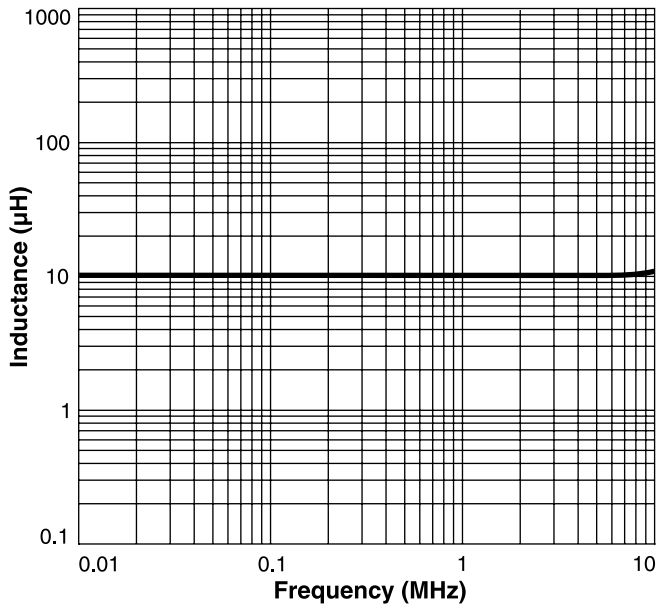
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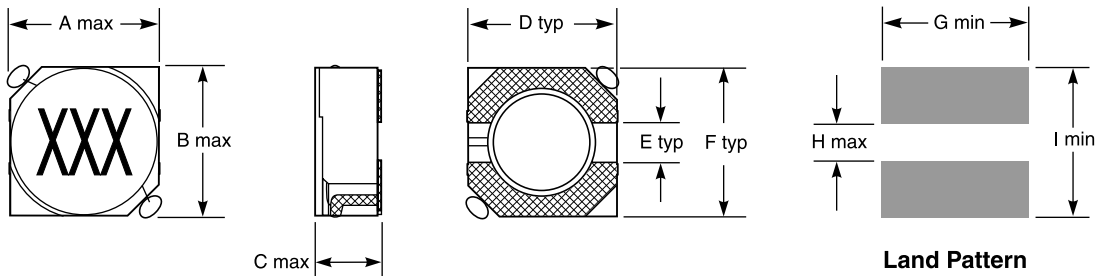
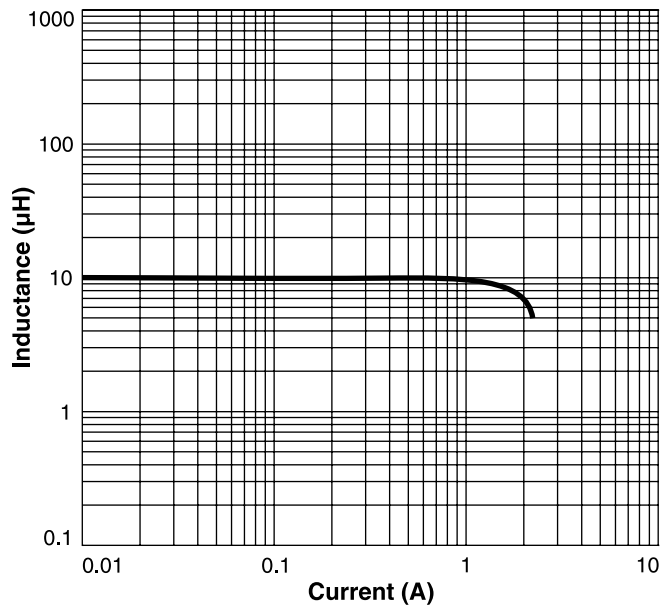
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MSS6132-103 for National Semiconductor LM5030

Typical L vs Frequency



Typical L vs Current



Parts/reel: 7" 500; 13" 1500 Tape width: 16 mm
 For packaging data see Tape and Reel Specifications section.

| A max | B max | C max | D typ | E typ | F typ | G min | H max | I min |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0.240 | 0.240 | 0.126 | 0.220 | 0.079 | 0.220 | 0.237 | 0.079 | 0.237 |
| 6,1 | 6,1 | 3,2 | 5,6 | 2,0 | 5,6 | 6,0 | 2,0 | 6,0 |



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