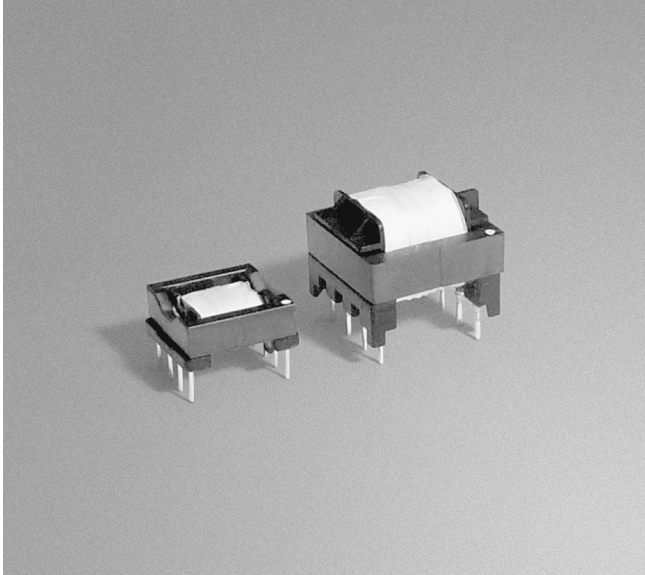




# Magnetics for 300 W Power Supply with PFC



- Specified by Texas Instruments in Reference Design SLUU341 for 300 Watt Isolated PFC Power Supply
- HA3950-AL, Flyback transformer (T201) for 5 W bias supply operates with an input voltage range of 100 – 450 V.
- HA3858-AL, Gate drive transformer (T301)

**Core material** Ferrite

**Terminations** RoHS compliant tin-silver over tin over copper. Other terminations available at additional cost.

**Weight** HA3950-AL: 13.5 g; HA3858-AL: 4.1 g

**Ambient temperature** –40°C to +85°C

**Storage temperature** Component: –40°C to +85°C.  
Tray packaging: –40°C to +80°C

**Moisture Sensitivity Level (MSL)** 1 (unlimited floor life at <30°C / 85% relative humidity)

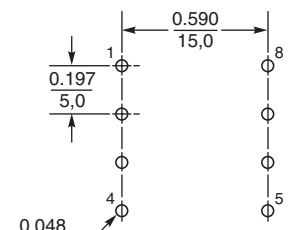
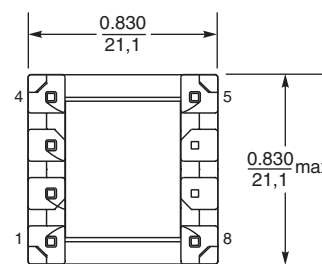
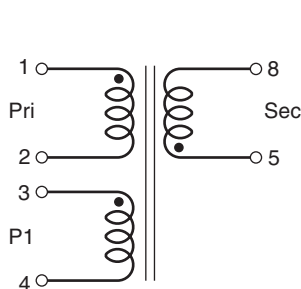
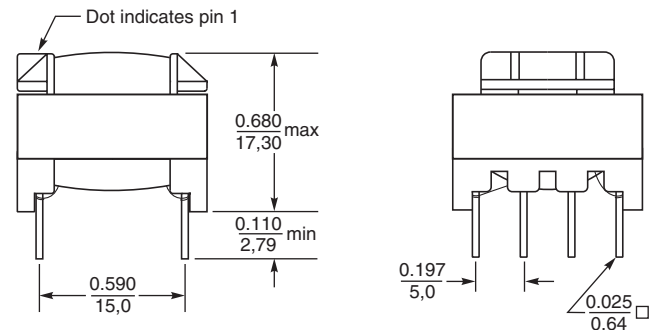
**Packaging** 100 per tray

**PCB washing** Tested with pure water or alcohol only. For other solvents, see Doc787\_PCB\_Washing.pdf.

## HA3950-AL Flyback Transformer

Part number	Inductance at 0 A <sup>1</sup> ±10% (mH)	Inductance at I <sub>pk</sub> <sup>2</sup> (mH)	DCR max (Ohms)	Leakage inductance max (µH) <sup>3</sup>	Turns ratio Pri:Sec:P1	I <sub>pk</sub> <sup>2</sup> (A)	Output <sup>4</sup>
HA3950-AL	2.3	1.61	0.860 (pri) 0.109 (sec) 0.080 (P1)	16.5	1 : 0.16 : 0.11	0.3	15 V, 0.33 A

1. Inductance measured at 100 kHz, 0.1 Vrms, 0 Adc using an Agilent/HP 4263B impedance analyzer or equivalent.
2. Peak primary current drawn at minimum input voltage.
3. Leakage inductance is for the primary and is measured with the secondary shorted.
4. Output of the P1 winding is 10 V, 20 mA.
5. Isolation: 3000 Vrms, one minute primary to secondary; 500 Vrms, one minute windings to core
6. Electrical specifications at 25°C.



Dimensions are in  $\frac{\text{inches}}{\text{mm}}$

**Recommended PC Board Layout**



# Magnetics for 300 W PFC Power Supply

## HA3858-AL Gate Drive Transformer

Part number	Turns ratio	Primary inductance <sup>1</sup> ±25% (μH)	Leakage inductance <sup>2</sup> max (μH)	DCR max (Ohms)	Volt-time product (V-μsec)	SRF typ <sup>3</sup> (MHz)	Capacitance max (pF)
HA3858-AL	1 : 1 : 1	460	1.87 (1 – 2) 2.06 (3 – 4)	0.380 (Pri [A]) 0.472 ((Pri [B]) 0.424 (sec)	150	1.15	8.48 (pri) 28.66 (sec)

1. Inductance is for each winding, measured at 200 kHz, 0.4 Vrms, 0 Adc.
2. Leakage inductance is for each primary, measured at 200 kHz, 0.4 Vrms with secondary pins shorted.
3. SRF measured with coils connected in series using an Agilent/HP 4192 or equivalent.
4. Operating temperature range –40°C to +85°C.
5. Isolation: 3000 Vrms, one minute primary to secondary; 500 Vrms, one minute windings to core
6. Electrical specifications at 25°C.

