

Reference Design-6

STR-W6756 Universal-input 140 W power supply



SANKEN Power ICs from
Allegro MicroSystems, Inc.,

1. Description

This reference design describes a general use universal input, dual output (15 V, 140 W) ac/dc power supply design using the STR-W6756.

2. Feature and specifications

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| <ul style="list-style-type: none"> AC input: 85 to 264 Vac Output: 140 W 15 V ± 5.0 % (0 to 9.33 A) Efficiency: 84 % (85 Vac, max load condition) | <ul style="list-style-type: none"> Operation: Quasi-resonant topology IC with bottom skip function EMI noise: CISPR Class B (conductive) Protection: Overload, Overvoltage / Open loop (secondary sensing), short circuit |
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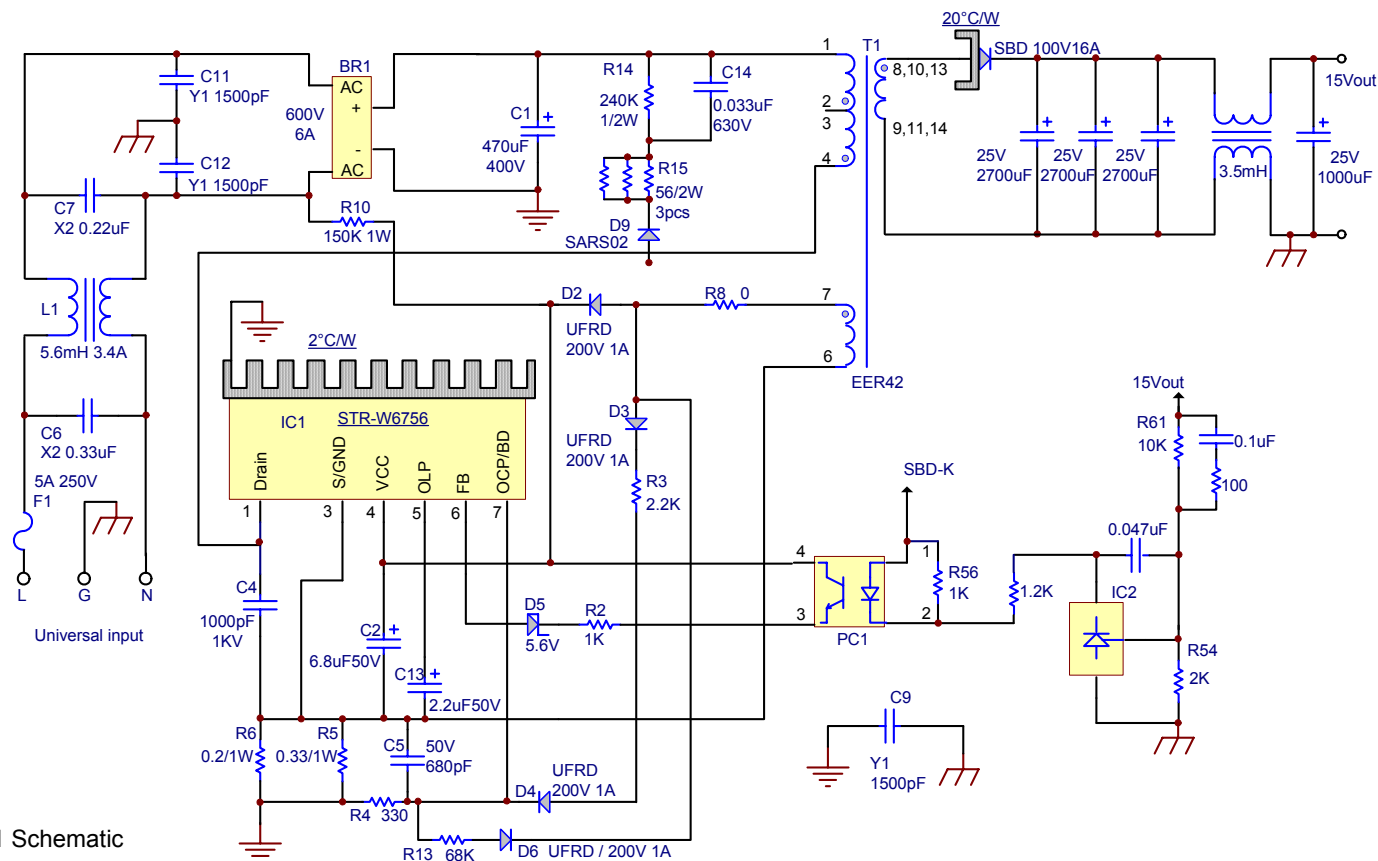


Fig. 1 Schematic

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Allegro/Sanken does not assume any responsibility for the use of any information described herein.

3. Transformer design

- Parameters

Primary inductance: 165 μH , AI-value: 286 nH/N^2

- Schematic / Structure

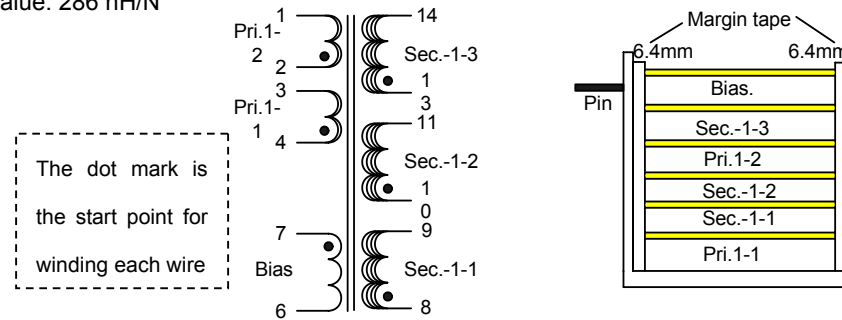


Fig. 2 Transformer Schematic / Structure

- Material information

Material	Description
Core	TDK PC40 EER-42 or equivalent
Bobbin	TDK BEER-42-1112CP or equivalent
Primary and Secondary wires	AWG24 Double-coated magnetic wire
Bias wire	AWG30 Double-coated magnetic wire

- Wiring information

Symbol	No. of wires	No. of layers	No. of turns	Methodology
Bias	1	1	4	Space winding over the width
Sec.1-3	4	1	4	Space winding over the width
Pri.1-2	2	1	12	Close windings over 1 layer
Sec.1-2	4	1	4	Space winding over the width
Sec.1-1	4	1	4	Space winding over the width
Pri1-1	2	1	12	Close windings over 1 layer