

Features

- High efficiency
- Excellent transient response
- Optional sense and Power OK pins
- Non-isolated
- Open-frame construction
- Vertical or horizontal mounting
- Water washable

Description

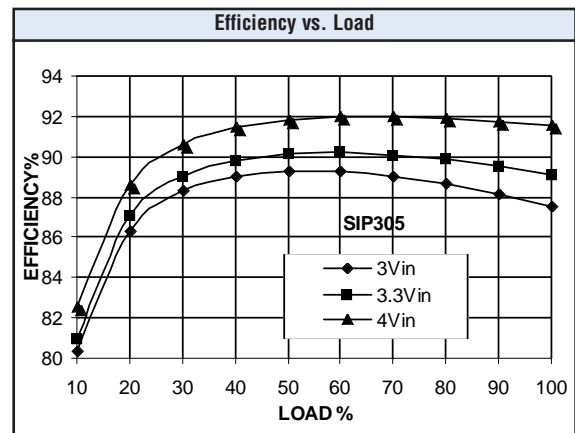
SIP305 non-isolated step-up DC/DC converters deliver high efficiency and excellent transient response in an industry-standard SIP package. The SIP305 can provide up to 20 watts of output power, and is the perfect tool for designers who are tight on board space and need to augment 3.3V circuit boards with 5V. Operating over a wide 3.0 to 4.0V input range and a frequency of 400 kHz, the SIP305 features surface-mount construction and an efficiency of 90%.

Technical Specifications

Input	
Voltage Range	3.0 - 4.0 VDC
3.3 VDC Nominal	
Turn-On Time	10 ms

Output	
Setpoint Accuracy	±1%
Line Regulation V_{in} Min. - V_{in} Max., I_{out} Rated	0.5%
Load Regulation I_{out} Min.- I_{out} Max., V_{in} Nom.	1% V_{out}
Ripple and Noise	100 mV
Dynamic Regulation, Loadstep	25% I_{out}
Pk Deviation	4% V_{out}
Settling Time	500 m s

General	
Switching Frequency	400 kHz
Temperature Coefficient	0.03%/°C
PCB Operating Temperature	0 to +100°C
Storage Range	-40 to +100°C
Humidity Max., Non-Condensing	95%
Vibration, 3 Axes, 5 Min Each	5 g, 10 - 55 Hz
MTBF† (Bellcore TR-NWT-000332)	Consult Factory



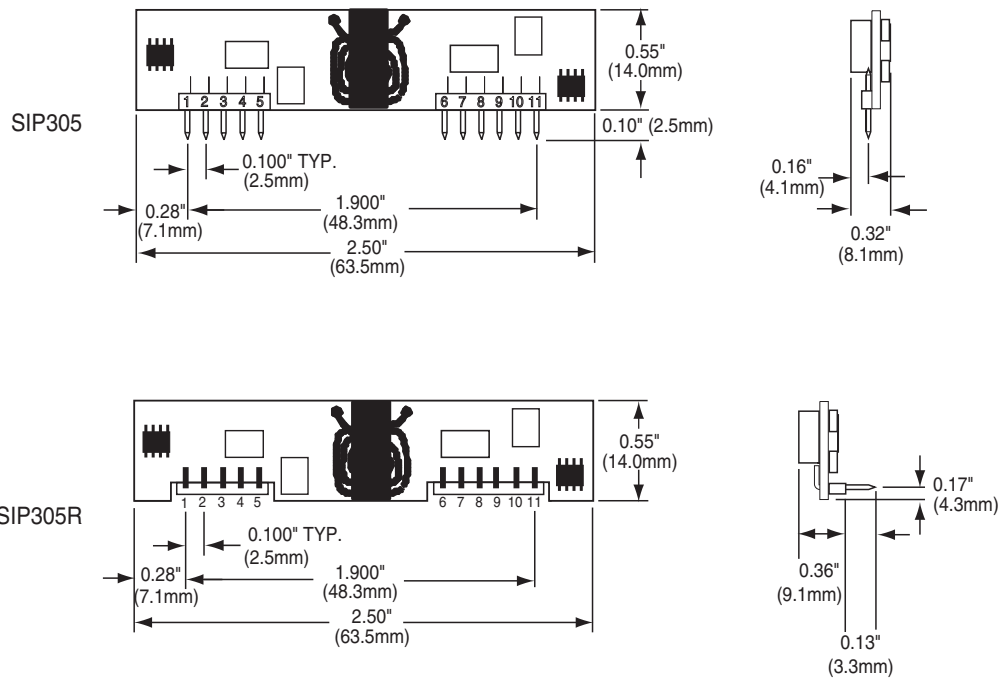
Notes
† MTBF predictions may vary slightly from model to model.
Specifications typically at 25°C, normal line, and full load, unless otherwise stated.
Soldering Conditions: I/O pins, 260°C, ten seconds; fully compatible with commercial wave-soldering equipment.
Safety: Agency approvals may vary from model to model. Please consult factory for specific model information.
Units are water-washable and fully compatible with commercial spray or immersion post wave-solder washing equipment.

Model Selection

MODEL	INPUT VOLTAGE (VOLTS)	INPUT VOLTAGE RANGE (VOLTS)	MAXIMUM INPUT CURRENT (AMPS)*	OUTPUT VOLTAGE (VOLTS)	RATED OUTPUT CURRENT (AMPS)	TYPICAL EFFICIENCY**
SIP305	3.3	3.0 - 4.0	8	5.0	4.0	90%

NOTES: * Maximum input current at minimum input voltage, maximum rated output power.
 ** At nominal V_{in} , rated output.
 For right-angle pins, add suffix "R" to model number.

Mechanical Drawing



Thermal Impedance	
Natural Convection	24.4 °C/W
100 LFM	18.3 °C/W
200 LFM	15.0 °C/W
300 LFM	11.1 °C/W
400 LFM	7.9 °C/W
Note: Thermal impedance data is dependent on many environmental factors. The exact thermal performance should be validated for specific application.	

Pin	Function
1	+V _{out}
2	+V _{out}
3	+V _{out}
4	-V _{out}
5	-V _{out}
6	-V _{in}
7	-V _{in}
8	+V _{in}
9	+V _{in}
10	+V _{in}
11	+V _{in}

Tolerances	
Inches: (Millimeters)	
.XX ± 0.020	.X ± 0.5
.XXX ± 0.010	.XX ± 0.25
Pin: ± 0.002 ± 0.05	
(Dimensions as listed unless otherwise specified.)	

This page is offered as a reference. Consult factory for actual availability of options. When ordering equipment options, use the following suffix information. Select preferred option(s) and add the suffix to the model number. Ordering option examples are located below the options table.

OPTION	SUFFIX	APPLICABLE SERIES	REMARKS
Negative Logic	N	HAS, HBD, HBS, HES, HLS, HLD, LES, QBS, QES, QLS, TES, TQD	TTL "Low" Turns Module ON TTL "High" Turns Module OFF
Lucent-Compatible Trim	T	HAS, HBD, HBS, HES, HLS, QBS, QES, QLS	
Trim	1	IAS, LES	
Enable	2	IAD, IAS, LES, SMS	
Trim and Enable	3	IAS, LES	
Pin Length and Heatsink Options			Standard Pin Length is 0.180" (4.6mm)
0.110" (2.8mm) Pin Length	8	All Leaded Models	
0.150" (3.8mm) Pin Length	9	All Leaded Models	
0.24" (6.1mm) Horizontal Heatsink	1H	All 1/4-Bricks, 1/2-Bricks, 3/4-Bricks, Full-Bricks (Except HLS, HLD, QLS, TLD, and TKD Packages)	Includes Thermal Pad
0.24" (6.1mm) Vertical Heatsink	1V	All 1/4-Bricks, 1/2-Bricks, 3/4-Bricks, Full-Bricks (Except HLS, HLD, QLS, TLD, and TKD Packages)	Includes Thermal Pad
0.45" (11.4mm) Horizontal Heatsink	2H	All 1/4-Bricks, 1/2-Bricks, 3/4-Bricks, Full-Bricks (Except HLS, HLD, QLS, TLD, and TKD Packages)	Includes Thermal Pad
0.45" (11.4mm) Vertical Heatsink	2V	All 1/4-Bricks, 1/2-Bricks, 3/4-Bricks, Full-Bricks (Except HLS, HLD, QLS, TLD, and TKD Packages)	Includes Thermal Pad
0.95" (24.1mm) Horizontal Heatsink	3H	All 1/4-Bricks, 1/2-Bricks, 3/4-Bricks, Full-Bricks (Except HLS, HLD, QLS, TLD, and TKD Packages)	Includes Thermal Pad
0.95" (24.1mm) Vertical Heatsink	3V	All 1/4-Bricks, 1/2-Bricks, 3/4-Bricks, Full-Bricks (Except HLS, HLD, QLS, TLD, and TKD Packages)	Includes Thermal Pad

Example Options:

HBS050ZG-ANT3V = HBS050ZG-A with negative logic, Lucent-compatible trim, and 0.95" vertical heatsink.

LES015YJ-3N = LES015YJ with optional trim and enable, negative logic.

QBS066ZG-AT8 = QBS066ZG-A with Lucent-compatible trim and 0.110" pin length.

NUCLEAR AND MEDICAL APPLICATIONS - Power-One products are not authorized for use as critical components in life support systems, equipment used in hazardous environments, or nuclear control systems without the express written consent of the respective divisional president of Power-One, Inc.

TECHNICAL REVISIONS - The appearance of products, including safety agency certifications pictured on labels, may change depending on the date manufactured. Specifications are subject to change without notice.