

- Regulated Single & Dual Output
- SIP or DIP Package
- Wide 2:1 Input Range
- 1000 VDC Isolation, 3000 VDC Option
- Continuous Short Circuit Protection
- Efficiency up to 78%
- -40 °C to +85 °C Operating Temperature

Specification

Input

Input Voltage Range	<ul style="list-style-type: none"> • 5 V models: 4.5 - 9.0 V • 12 V models: 9.0 - 18.0 V • 24 V models: 18.0 - 36.0 V • 48 V models: 36.0 - 72.0 V
Input Current	<ul style="list-style-type: none"> • See table
Input Reflected Ripple	<ul style="list-style-type: none"> • 35 mA pk-pk through 12 μH inductor, 5 Hz to 20 MHz
Input Filter	<ul style="list-style-type: none"> • Capacitor

Output

Output Voltage	<ul style="list-style-type: none"> • See tables
Output Voltage Balance	<ul style="list-style-type: none"> • $\pm 1\%$ between dual output rails
Initial Set Accuracy	<ul style="list-style-type: none"> • $\pm 2\%$
Start Up Rise Time	<ul style="list-style-type: none"> • 100 ms typical
Line Regulation	<ul style="list-style-type: none"> • $\pm 0.5\%$
Load Regulation	<ul style="list-style-type: none"> • $\pm 1\%$ for 25-100% load change
Cross Regulation	<ul style="list-style-type: none"> • $\pm 5\%$
Transient Response	<ul style="list-style-type: none"> • $\pm 3\%$ deviation recovering to $< 1\%$ within 300 μs for 25% load change
Ripple & Noise	<ul style="list-style-type: none"> • 80 mV pk-pk, 20 MHz BW. See note 6.
Short Circuit Protection	<ul style="list-style-type: none"> • Continuous with auto recovery
Current Limiting	<ul style="list-style-type: none"> • Typically 110% of max lout
Remote On/Off	<ul style="list-style-type: none"> • Applying 5 V via 1 kΩ current limiting resistor & diode to pin 3 turns output off
Temperature Coefficient	<ul style="list-style-type: none"> • $\pm 0.02/^{\circ}\text{C}$ max
Maximum Capacitive Load	<ul style="list-style-type: none"> • See table
Remote On/Off	<ul style="list-style-type: none"> • Optional on SIP package models applying 5 V via 1 kΩ current limiting resistor and diode turns output off (see note 4)

General

Efficiency	<ul style="list-style-type: none"> • See table
Isolation Voltage	<ul style="list-style-type: none"> • 1000 VDC input to output 1 min • Optional 3000 VDC (see note 2)
Input to Output Capacitance	<ul style="list-style-type: none"> • 60 pF
Switching Frequency	<ul style="list-style-type: none"> • 100-650 kHz variable
MTBF	<ul style="list-style-type: none"> • > 2.7 Mhrs to MIL-STD-217F

Physical

Case Material	<ul style="list-style-type: none"> • Non-conductive black plastic (UL94V-0 rated). Optional metal: nickel coated copper
Pin Material	<ul style="list-style-type: none"> • SIP case: Alloy 42 solder coated • DIP case: $\varnothing 0.5$ mm brass solder coated
Potting Material	<ul style="list-style-type: none"> • Epoxy (UL94V-0 rated)
Lead Soldering Temperature	<ul style="list-style-type: none"> • 260 °C 1.5 mm from case for 10 s

Environmental

Operating Temperature	<ul style="list-style-type: none"> • -40 °C to +85 °C, derate from 100% load at +85 °C to 0% load at +100 °C
Storage Temperature	<ul style="list-style-type: none"> • -40 °C to +125 °C
Case Temperature	<ul style="list-style-type: none"> • +100 °C max
Humidity	<ul style="list-style-type: none"> • Up to 95% RH, non-condensing
Cooling	<ul style="list-style-type: none"> • Convection-cooled

Input Voltage	No Load Input Current	Full Load Input Current	Output Voltage	Output Current	Efficiency	Max Capacitive load		Model Number ^(1,2,3,4,5)
						Single Output	Dual Output	
4.5-9.0 V	15 mA	492 mA	3.3 V	500 mA	67%	3300 µF	±1000 µF	IU0503SA
	15 mA	571 mA	5.0 V	400 mA	70%	3300 µF	±1000 µF	IU0505SA
	30 mA	555 mA	9.0 V	222 mA	72%	470 µF	±220 µF	IU0509SA
	30 mA	555 mA	12.0 V	167 mA	72%	470 µF	±220 µF	IU0512SA
	30 mA	547 mA	15.0 V	133 mA	73%	470 µF	±220 µF	IU0515SA
9.0-18.0 V	60 mA	533 mA	24.0 V	83 mA	75%	220 µF	±100 µF	IU0524SA
	15 mA	205 mA	3.3 V	500 mA	67%	3300 µF	±1000 µF	IU1203SA
	15 mA	216 mA	5.0 V	400 mA	77%	3300 µF	±1000 µF	IU1205SA
	15 mA	213 mA	9.0 V	222 mA	78%	470 µF	±220 µF	IU1209SA
	15 mA	208 mA	12.0 V	167 mA	80%	470 µF	±220 µF	IU1212SA
18.0-36.0 V	15 mA	213 mA	15.0 V	133 mA	78%	470 µF	±220 µF	IU1215SA
	15 mA	208 mA	24.0 V	83 mA	80%	220 µF	±100 µF	IU1224SA
	8 mA	98 mA	3.3 V	500 mA	70%	3300 µF	±1000 µF	IU2403SA
	8 mA	108 mA	5.0 V	400 mA	77%	3300 µF	±1000 µF	IU2405SA
	8 mA	104 mA	9.0 V	222 mA	80%	470 µF	±220 µF	IU2409SA
36.0-72.0 V	8 mA	104 mA	12.0 V	167 mA	80%	470 µF	±220 µF	IU2412SA
	8 mA	104 mA	15.0 V	133 mA	80%	470 µF	±220 µF	IU2415SA
	8 mA	104 mA	24.0 V	83 mA	80%	220 µF	±100 µF	IU2424SA
	6 mA	48 mA	3.3 V	500 mA	71%	3300 µF	±1000 µF	IU4803SA
	6 mA	56 mA	5.0 V	400 mA	74%	3300 µF	±1000 µF	IU4805SA
6 mA	6 mA	53 mA	9.0 V	222 mA	78%	470 µF	±220 µF	IU4809SA
	6 mA	53 mA	12.0 V	167 mA	78%	470 µF	±220 µF	IU4812SA
	6 mA	53 mA	15.0 V	133 mA	78%	470 µF	±220 µF	IU4815SA
	6 mA	52 mA	24.0 V	83 mA	80%	220 µF	±100 µF	IU4824SA

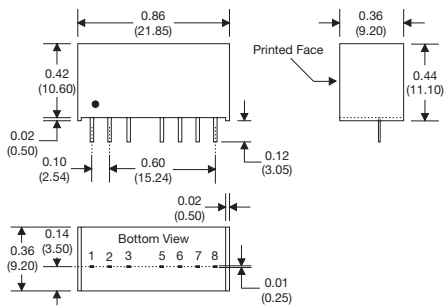
Notes

1. For dual inline package replace 'S' in model number with 'D'.
2. For optional 3 kV isolation add suffix '-H' to the model number.
3. For dual output delete suffix 'A' & split output currents equally between rails.

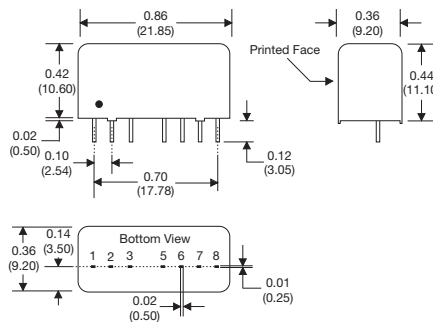
4. For optional Remote On/Off on SIP models, add suffix '-R' to model number.
5. For optional metal case, add suffix '-M' to model number.
6. Output capacitor of 100 µF required to meet quoted ripple & noise.
7. Minimum load of 25% required to meet quoted specifications.

Mechanical Details

SIP Package - Non-conductive Plastic Case



SIP Package - Nickel Coated Copper Case

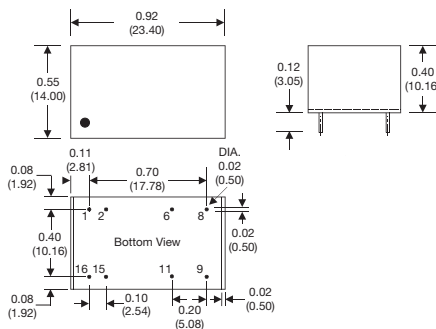


Dimensions are in inches (mm)
Weight: Plastic case = 4.5 g
Metal case = 6.5 g

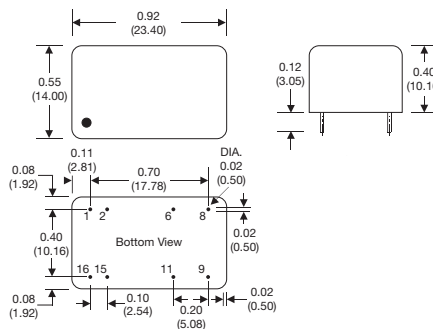
PIN CONNECTIONS		
Pin	Single	Dual
1	-V Input	-V Input
2	+V Input	+V Input
3	Opt. ROF*	Opt. ROF**
5	N.P. / N.C.	N.C.
6	+V Output	+V Output
7	-V Output	-V Output
8	NC	Common

*When optional ROF is present pin 5 is No Connection. When not present pin 3 & 5 are No Pin.

DIP Package - Non-conductive Plastic Case



DIP Package - Nickel Coated Copper Case



Dimensions are in inches (mm)
Weight: Plastic case = 6.0 g
Metal case = 8.0 g

PIN CONNECTIONS		
Pin	Single	Dual
1	-V Input	-V Input
2	-V Input	-V Input
6	NC	Common
8	NC	-V Output
9	+V Output	+V Output
11	-V Output	Common
15	+V Input	+V Input
16	+V Input	+V Input