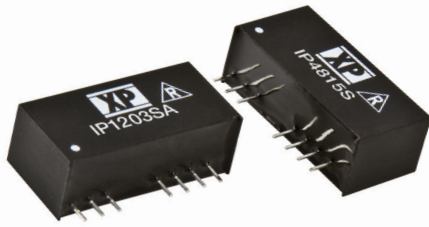




**THE DATASHEET OF  
IP2405SA**



# 3 Watts IP Series



- Regulated Single & Dual Output
- Wide 4:1 Input Range
- SIP Package
- 1600 VDC Isolation
- -40 °C to 85 °C Operation
- Remote On/Off
- 3 Year Warranty

## Specification

### Input

- Input Voltage Range** • See table
- Input Reflected Ripple Current** • 20 mA pk-pk through 12  $\mu$ H inductor and 47  $\mu$ F capacitor, 5 Hz to 20 MHz
- Input Filter** • Capacitor
- Input Surge** • 12 V models: 25 VDC for 100 ms  
24 V models: 50 VDC for 100 ms  
48 V models: 100 VDC for 100 ms

### Output

- Output Voltage** • See table
- Minimum Load** • None<sup>(1)</sup>
- Line Regulation** •  $\pm 0.2\%$  max
- Load Regulation** •  $\pm 1.0\%$  max for a 10-100% load change<sup>(1)</sup>
- Setpoint Accuracy** •  $\pm 1\%$  max
- Ripple & Noise** • 30 mV pk-pk max, 20 MHz bandwidth
- Temperature Coefficient** • 0.02%/°C
- Short Circuit Protection** • Continuous with auto recovery (foldback)
- Cross Regulation** •  $\pm 5\%$  on dual output models<sup>(2)</sup>
- Remote On/Off** • Apply 2 to 4 mA to pin 3 to turn off output

### General

- Efficiency** • See table
- Isolation Voltage** • 1600 VDC
- Isolation Resistance** •  $10^9 \Omega$
- Isolation Capacitance** • 200 pF
- Switching Frequency** • 100-600 kHz variable
- MTBF** • >1.7 Mhrs to MIL-HDBK-217F at 25 °C, GB

### Environmental

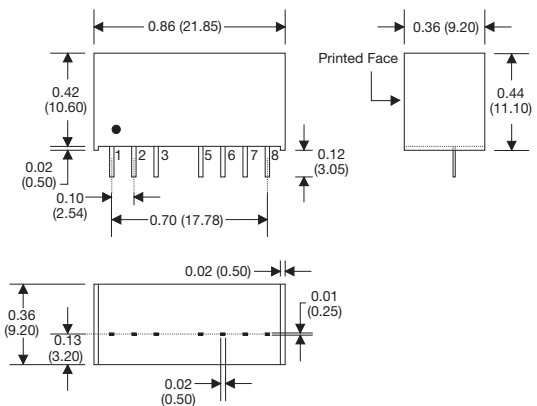
- Operating Temperature** • -40 °C to +85 °C, derate from 100% load at 70 °C to 30% load at 85 °C
- Storage Temperature** • -40 °C to +125 °C
- Case Temperature** • 100 °C max
- Cooling** • Convection cooled

### Notes

1. Operation at no load will not damage the converter but may not meet all specifications.
2. When one output is set to 100% load and the other varies between 25%-100% load.
3. Pin pitch tolerance  $\pm 0.014$  ( $\pm 0.35$ )
4. Case tolerance  $\pm 0.02$  (0.5)
5. Weight: 0.014 lbs (6.5 g)
6. All dimensions in inches (mm)

Input Voltage	Output Voltage	Output Current	No Load Input Current	Max Capacitive Load	Efficiency	Model Number
4.5-18.0 V	3.3 V	700 mA	40 mA	1760 $\mu$ F	72%	IP1203SA
	5.0 V	600 mA	40 mA	1000 $\mu$ F	77%	IP1205SA
	12.0 V	250 mA	40 mA	170 $\mu$ F	81%	IP1212SA
	15.0 V	200 mA	40 mA	110 $\mu$ F	81%	IP1215SA
	$\pm 5.0 V$	$\pm 300$ mA	40 mA	$\pm 470$ $\mu$ F	77%	IP1205S
	$\pm 12.0 V$	$\pm 125$ mA	40 mA	$\pm 100$ $\mu$ F	80%	IP1212S
9.0-36.0 V	3.3 V	700 mA	25 mA	1760 $\mu$ F	75%	IP2403SA
	5.0 V	600 mA	25 mA	1000 $\mu$ F	79%	IP2405SA
	12.0 V	250 mA	25 mA	170 $\mu$ F	82%	IP2412SA
	15.0 V	200 mA	25 mA	110 $\mu$ F	82%	IP2415SA
	$\pm 5.0 V$	$\pm 300$ mA	25 mA	$\pm 470$ $\mu$ F	79%	IP2405S
	$\pm 12.0 V$	$\pm 125$ mA	25 mA	$\pm 100$ $\mu$ F	79%	IP2412S
18.0-75.0 V	3.3 V	700 mA	15 mA	1760 $\mu$ F	74%	IP4803SA
	5.0 V	600 mA	15 mA	1000 $\mu$ F	78%	IP4805SA
	12.0 V	250 mA	15 mA	170 $\mu$ F	80%	IP4812SA
	15.0 V	200 mA	15 mA	110 $\mu$ F	81%	IP4815SA
	$\pm 5.0 V$	$\pm 300$ mA	15 mA	$\pm 470$ $\mu$ F	79%	IP4805S
	$\pm 12.0 V$	$\pm 125$ mA	15 mA	$\pm 100$ $\mu$ F	79%	IP4812S
	$\pm 15.0 V$	$\pm 100$ mA	15 mA	$\pm 47$ $\mu$ F	79%	IP4815S

## Mechanical Details



PIN CONNECTIONS					
Pin	Single	Dual	Pin	Single	Dual
1	-V Input	-V Input	5	N.C.	N.C.
2	+V Input	+V Input	6	+V Output	+V Output
3	Remote On/Off	Remote On/Off	7	-V Output	Common
4	No Pin	No Pin	8	N.C.	-V Output






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