



- Single & Dual Regulated Outputs
- 2:1 Input Range
- SMD Package
- Industry Standard Pinout
- 1500 VDC Isolation
- -40 °C to +85 °C Operation
- 3 Year Warranty

## Specification

### Input

Input Voltage Range	<ul style="list-style-type: none"> <li>• 12 V (9-18 VDC)</li> <li>• 24 V (18-36 VDC)</li> </ul>
Input Reverse Voltage Protection	<ul style="list-style-type: none"> <li>• None</li> </ul>
Input Surge	<ul style="list-style-type: none"> <li>• 12 V: 22 VDC for 100 ms</li> <li>• 24 V: 40 VDC for 100 ms</li> </ul>

### Output

Output Voltage	<ul style="list-style-type: none"> <li>• See table</li> </ul>
Minimum Load	<ul style="list-style-type: none"> <li>• 10%<sup>(1)</sup></li> </ul>
Line Regulation	<ul style="list-style-type: none"> <li>• ±0.5%</li> </ul>
Load Regulation	<ul style="list-style-type: none"> <li>• ±1%, balanced load on dual outputs</li> </ul>
Setpoint Accuracy	<ul style="list-style-type: none"> <li>• ±3%/±5%, positive/negative output</li> </ul>
Ripple & Noise	<ul style="list-style-type: none"> <li>• 150 mV pk-pk 20 MHz bandwidth</li> </ul>
Temperature Coefficient	<ul style="list-style-type: none"> <li>• 0.03%/°C</li> </ul>
Short Circuit Protection	<ul style="list-style-type: none"> <li>• Continuous, automatic recovery</li> </ul>

### General

Efficiency	<ul style="list-style-type: none"> <li>• See table</li> </ul>
Isolation Voltage	<ul style="list-style-type: none"> <li>• 1500 VDC</li> </ul>
Isolation Resistance	<ul style="list-style-type: none"> <li>• 10<sup>9</sup> Ω</li> </ul>
Isolation Capacitance	<ul style="list-style-type: none"> <li>• 85 pF typical</li> </ul>
Switching Frequency	<ul style="list-style-type: none"> <li>• 300 kHz typical at nominal input, full load</li> </ul>
MTBF	<ul style="list-style-type: none"> <li>• &gt;1 MHrs to MIL-HDBK-217F at 25 °C, GB</li> </ul>
Recommended Solder Profile	<ul style="list-style-type: none"> <li>• IPC/JEDEC J-STD-020D.1</li> </ul>

### Environmental

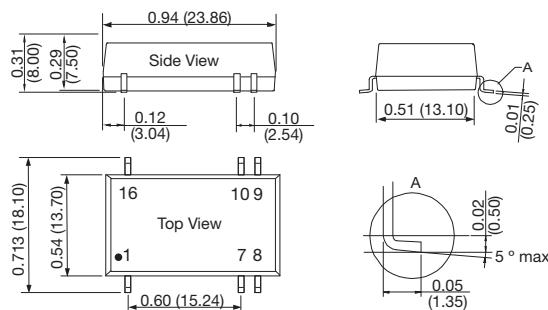
Operating Temperature	<ul style="list-style-type: none"> <li>• -40 °C to +70 °C, derate linearly to 0% load at +100 °C</li> </ul>
Storage Temperature	<ul style="list-style-type: none"> <li>• -55 °C to +125 °C</li> </ul>
Case Temperature	<ul style="list-style-type: none"> <li>• 100 °C max</li> </ul>
Cooling	<ul style="list-style-type: none"> <li>• Convection-cooled</li> </ul>
Lead Temperature	<ul style="list-style-type: none"> <li>• 240 °C, 0.06 in (1.5 mm) from case, 10 s</li> </ul>

### Notes

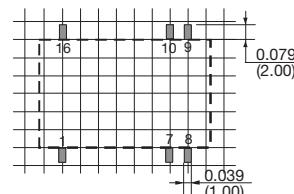
1. Operation at no load will not damage unit but it may not meet all specifications.

Input Voltage	Output Voltage	Output Current	Efficiency (typ)	Model Number <sup>(5)</sup>
24 VDC	3.3 V	500 mA	72%	ISP2403A
	5.0 V	400 mA	76%	ISP2405A
	±12.0 V	±83 mA	78%	ISP2412

### Mechanical Details



Recommended footprint  
Top view grid: 0.1 x 0.1 in (2.54 x 2.54 mm)



Pin	Single	Dual
1	-Vin	-Vin
7	N.C.	N.C.
8	N.C.	0V
9	+Vo	+Vo
10	0V	-Vo
16	Vin	Vin

N.C. Not connected

### Notes

1. All dimensions in inches (mm)
2. Tolerance: ±0.010 (±0.25)
3. Pin tolerance: ±0.004 (±0.10 mm)
4. Weight: 0.011 lbs (5.2 g)

5. For optional tape & reel option add suffix -TR to the end of the p/n. Reel quantity = 200

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