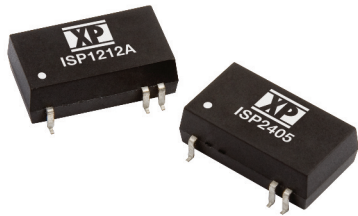# 2 Watts
ISP Series

- 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	• 12 V (9-18 VDC) 24 V (18-36 VDC)
Input Reverse Voltage Protection	• None
Input Surge	• 12 V: 22 VDC for 100 ms 24 V: 40 VDC for 100 ms

Output

Output Voltage	• See table
Minimum Load	• 10%[1]
Line Regulation	• ±0.5%
Load Regulation	• ±1%, balanced load on dual outputs
Setpoint Accuracy	• ±3%/±5%, positive/negative output
Ripple & Noise	• 150 mV pk-pk 20 MHz bandwidth
Temperature Coefficient	• 0.03%/°C
Short Circuit Protection	• Continuous, automatic recovery

General

Efficiency	• See table
Isolation Voltage	• 1500 VDC
Isolation Resistance	• $10^9 \, \Omega$
Isolation Capacitance	• 85 pF typical
Switching Frequency	• 300 kHz typical at nominal input, full load
MTBF	• >1 MHrs to MIL-HDBK-217F at 25 °C, GB
Recommended Solder Profile	• IPC/JEDEC J-STD-020D.1

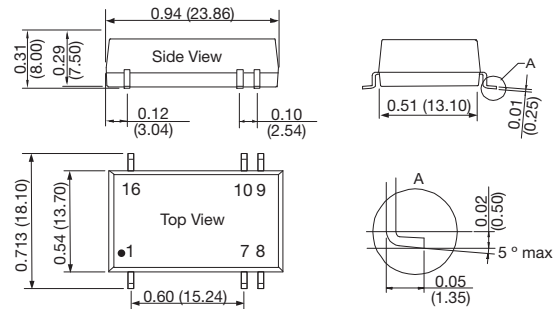### Environmental

Operating Temperature	• -40 °C to +70 °C, derate linearly to 0% load at +100 °C
Storage Temperature	• -55 °C to +125 °C
Case Temperature	• 100 °C max
Cooling	• Convection-cooled
Lead Temperature	• 240 °C, 0.06 in (1.5 mm) from case, 10 s

Notes

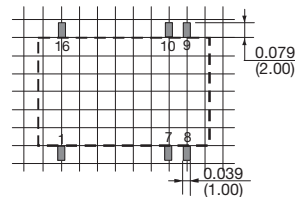1. Operation at no load will not damage unit but it may not meet all specifications.

Input Voltage	Output Voltage	Output Current	Efficiency (typ)	Model Number[5]
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.	0 V
9	+Vo	+Vo
10	0 V	-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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