

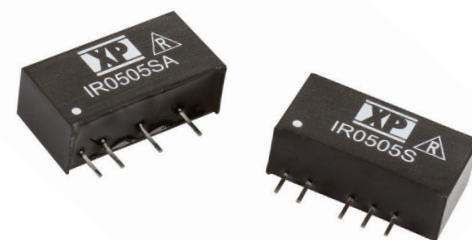
3W

Convection cooled

DC-DC converters 

The IR series is housed in a DIP24 metal case, it features a 4:1 input voltage range of 9 to 36VDC or 18 to 72VDC with both single and dual outputs, singles have 3.3, 5, 9, 12, 15, 18 or 24VDC with duals having ± 3.3 , ± 5 , ± 9 , ± 12 , ± 15 or ± 24 VDC.

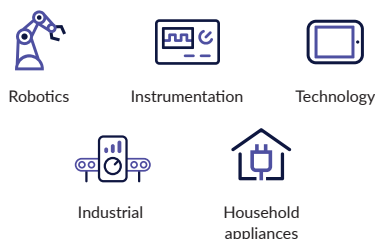
The IR provides 1.5kVDC isolation between input and output, or 3.5kVDC as an option, the output has short circuit protection. The operating temperature range is from -40°C to +100°C, with derating above +85°C.



Features

- ▶ Regulated single & dual outputs
- ▶ 4:1 input range
- ▶ Single outputs 3.3 to 24VDC
- ▶ Dual outputs ± 3.3 to ± 24 VDC
- ▶ DIP24 metal case
- ▶ 1.5kVDC isolation, 3.5kVDC option
- ▶ Continuous short circuit protection
- ▶ -40°C to +100°C operating temperature
- ▶ Full power to +85°C
- ▶ 3 year warranty

Applications



Dimensions

31.7 x 20.3 x 10.4mm (1.25" x 0.8" x 0.40")

More resources

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Models & ratings

Model number	Input voltage	No load input current	Output voltage	Output current	Efficiency	Load regulation	Maximum capacitive load
IR0505SA	5VDC	80mA	5.0VDC	600mA	79%	8.0%	220 μ F
IR0509SA		70mA	9.0VDC	333mA	84%	7.0%	220 μ F
IR0512SA		70mA	12.0VDC	250mA	84%	6.0%	100 μ F
IR0515SA		80mA	15.0VDC	200mA	84%	6.0%	100 μ F
IR0505S		80mA	± 5.0 VDC	± 300 mA	82%	7.0%	± 100 μ F
IR0509S		70mA	± 9.0 VDC	± 167 mA	85%	6.0%	± 100 μ F
IR0512S		70mA	± 12.0 VDC	± 125 mA	85%	6.0%	± 47 μ F
IR0515S		70mA	± 15.0 VDC	± 100 mA	86%	5.0%	± 47 μ F

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Notes:

1. Operation at no load will not damage unit but it may not meet all specifications.
2. Output capacitor of 1 μ F required to meet quoted ripple and noise.
3. For optional 3kV isolation, add suffix '-H' to the model number.
4. All dimensions in mm (inches).
5. Pin pitch tolerance: ± 0.35 (± 0.014)
6. Case tolerance: ± 0.5 (± 0.02)

Models & ratings

Model number	Input voltage	No load input current	Output voltage	Output current	Efficiency	Load regulation	Maximum capacitive load
IR0505SA	12VDC	25 mA	5.0VDC	600mA	84%	6.0%	220μF
IR0509SA		25 mA	9.0VDC	333mA	87%	4.0%	220μF
IR0512SA		25 mA	12.0VDC	250mA	88%	4.0%	100μF
IR0515SA		20 mA	15.0VDC	200mA	90%	3.0%	100μF
IR0505S		25 mA	±5.0VDC	±300mA	85%	5.0%	±100μF
IR0509S		25 mA	±9.0VDC	±167mA	88%	4.0%	±100μF
IR0512S		25 mA	±12.0VDC	±125mA	89%	3.0%	±47μF
IR0515S		20 mA	±15.0VDC	±100mA	90%	3.0%	±47μF

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

2. Output capacitor of 1μF required to meet quoted ripple and noise.

3. For optional 3kV isolation, add suffix '-H' to the model number.

4. All dimensions in mm (inches).

5. Pin pitch tolerance: ±0.35 (±0.014)

6. Case tolerance: ±0.5 (±0.02)

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Input voltage range		±10		%	
Input reflected ripple current		20		mA pk-pk	5Hz to 20MHz
Input reverse voltage protection	None				

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Output voltage	See models & ratings table				
Minimum load	0			%	No minimum load required
Line regulation		1.2/1.0		%	Δ Vin
Load regulation	See models & ratings table				
Setpoint accuracy		+2/-4		%	
Ripple & noise		50		mV pk-pk	20 MHz bandwidth. Output capacitor of 1μF required to meet quoted ripple and noise.
Temperature coefficient		0.02		%/°C	
Maximum capacitive load	See models & ratings table				

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Efficiency	See models & ratings table				
Isolation voltage	1000			VDC	3000VDC option (for optional 3kVDC isolation, add suffix '-H' to the model number)
Isolation capacitance		60		pF	
Isolation resistance		10 ⁹		Ω	
Switching frequency		60-85		kHz	Variable
Mean time between failure		>1.1		Mhrs	MIL-HDBK-217F, +25°C GB

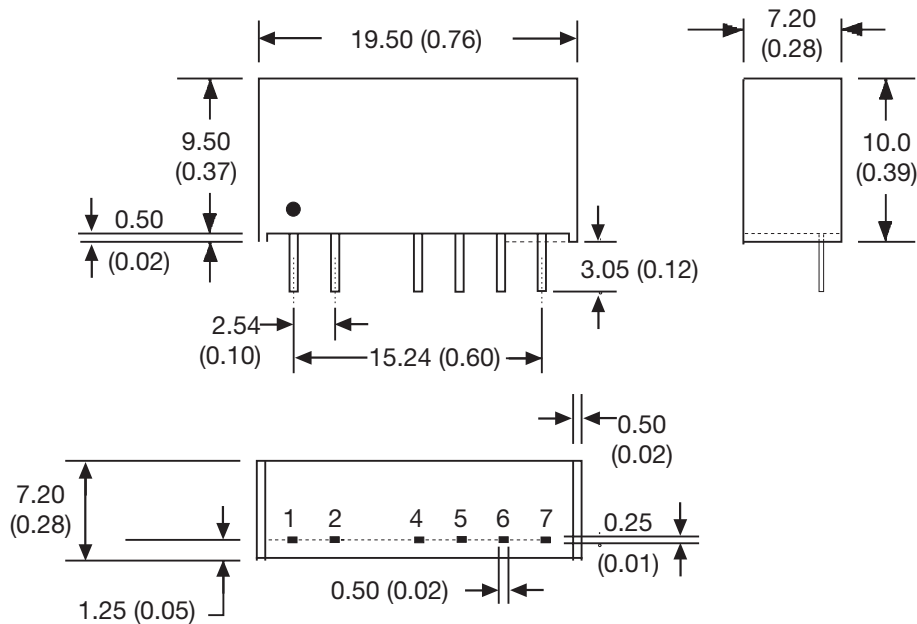
Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Operating temperature	-40		+85	°C	
Storage temperature	-40		+125	°C	
Case temperature			+100	°C	
Cooling	Convection cooled				

Safety approvals

Certification	Standard	Notes & conditions
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

Mechanical details



- Notes:
- 1. All dimensions in inches (mm)
 - 2. Weight: 2.8g (0.02lbs)
 - 3. Pin pitch tolerance: ± 0.35 (± 0.014)
 - 4. Case tolerance: ± 0.5 (± 0.02)