

3W

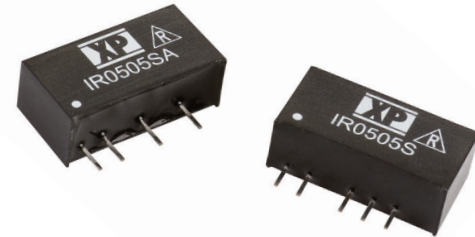
Convection
cooled

DC-DC
converters



The IR series is housed in a SIP7 package, it features a $\pm 10\%$ input voltage range with semi regulated single and dual outputs, singles have 5, 9, 12, 15VDC with duals having ± 5 , ± 9 , ± 12 , ± 15 VDC.

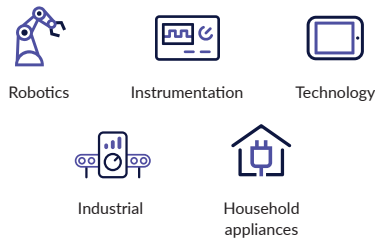
The IR provides 1kVDC isolation between input and output, or 3kVDC as an option, the output has short circuit protection. The operating temperature range is from -40°C to $+100^{\circ}\text{C}$, with derating above $+85^{\circ}\text{C}$.



Features

- ▶ Semi regulated single & dual outputs
- ▶ $\pm 10\%$ input range
- ▶ Single outputs 5V to 15VDC
- ▶ Dual outputs $\pm 5\text{V}$ to $\pm 15\text{VDC}$
- ▶ SIP7 plastic case
- ▶ 1kVDC isolation, 3kVDC option
- ▶ Continuous short circuit protection
- ▶ -40°C to $+85^{\circ}\text{C}$ operating temperature
- ▶ Full power to $+85^{\circ}\text{C}$
- ▶ 3 year warranty

Applications



Dimensions

19.5 x 10 x 7.2mm

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 μF
IR0509SA		70mA	9.0VDC	333mA	84%	7.0%	220 μF
IR0512SA		70mA	12.0VDC	250mA	84%	6.0%	100 μF
IR0515SA		80mA	15.0VDC	200mA	84%	6.0%	100 μF
IR0505S		80mA	$\pm 5.0\text{VDC}$	$\pm 300\text{mA}$	82%	7.0%	$\pm 100\mu\text{F}$
IR0509S		70mA	$\pm 9.0\text{VDC}$	$\pm 167\text{mA}$	85%	6.0%	$\pm 100\mu\text{F}$
IR0512S		70mA	$\pm 12.0\text{VDC}$	$\pm 125\text{mA}$	85%	6.0%	$\pm 47\mu\text{F}$
IR0515S		70mA	$\pm 15.0\text{VDC}$	$\pm 100\text{mA}$	86%	5.0%	$\pm 47\mu\text{F}$

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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 $1\mu\text{F}$ 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

Notes:

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

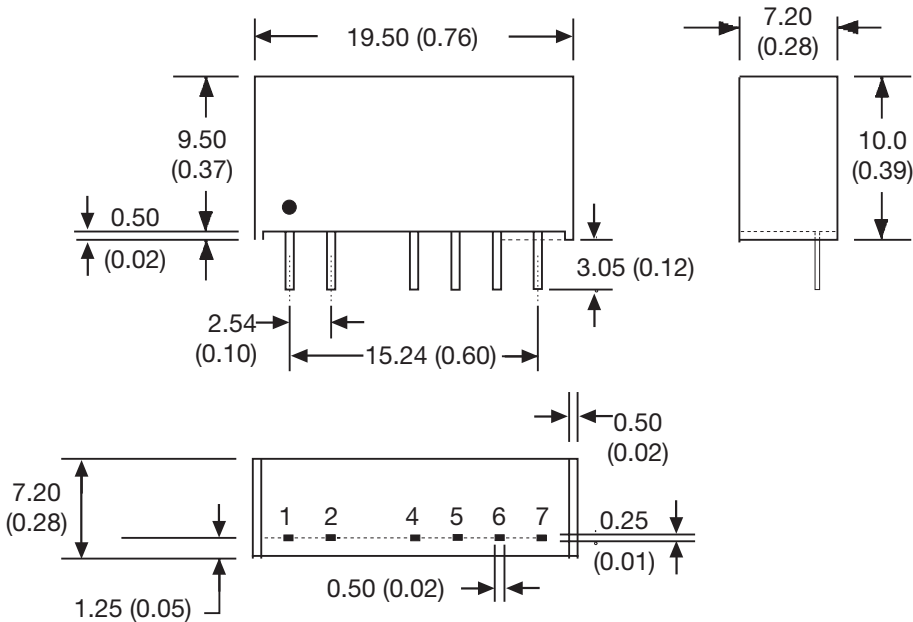
Environmental

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)