IEU02 series

XP Power

2W

DC-DC converters

The IEU02 series is housed in a DIP8 PCB mount plastic case. Featuring a 2:1 input voltage range of 4.5 to 9VDC, 9 to 18VDC, 18 to 36VDC or 36 to 75VDC with regulated single outputs of 3.3, 5, 12 & 15VDC and dual outputs ±5, ±12 or ±15VDC.

The 2W IEU02 series has 1.5kVDC isolation between input and output, overload and short circuit protection is standard. The operating temperature range is from -40°C to +95°C, with derating above +70°C.

Features

- Regulated single & dual outputs
- 2:1 input range
- Single outputs 3.3 to 15VDC
- Dual outputs ±5.0 to ±15VDC
- DIP8 package
- 1.5kVDC isolation
- Class A conducted & radiated emissions
- -40°C to +95°C operating temperature
- Full power to +70°C
- 3 year warranty

Applications

Autonomous equipment

Industrial

Technology

Dimensions

14.0 x 14.0 x 8.0mm (0.55” x 0.55” x 0.31”)

Documentation

For further information click the link or scan the code

→ xppower.com

Models & ratings

Model number	Input voltage	Output voltage	Output current	Efficiency	Input current[1]		Maximum capacitive load[2]
					No load	Full load	
IEU0205S3V3	4.5-9VDC	3.3VDC	400mA	79%	40 mA	335mA	100µF
IEU0205S05		5VDC	400mA	81%		495mA	100µF
IEU0205S12		12VDC	167mA	85%		470mA	100µF
IEU0205S15		15VDC	134mA	87%		460mA	100µF
IEU0205D05		±5VDC	±200mA	83%		480mA	±100µF
IEU0205D12		±12VDC	±83mA	85%		470mA	±100µF
IEU0205D15		±15 VDC	±67mA	85%		475mA	±100µF

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Notes:

1. Input currents measured at nominal input voltage.
2. Maximum capacitive load is per output.

IEU02 series

Models & ratings

Model number	Input voltage	Output voltage	Output current	Efficiency	Input current[1]		Maximum capacitive load[2]
					No load	Full load	
IEU0212S3V3	9-18VDC	3.3VDC	400mA	80%	27 mA	140 mA	100µF
IEU0212S05		5VDC	400mA	83%		200 mA	100µF
IEU0212S12		12VDC	167mA	87%		190 mA	100µF
IEU0212S15		15VDC	134mA	87%		195 mA	100µF
IEU0212D05		±5VDC	±200mA	84%		200 mA	±100µF
IEU0212D12		±12VDC	±83mA	86%		195 mA	±100µF
IEU0212D15		±15 VDC	±67mA	86%		195 mA	±100µF
IEU0224S3V3	18-36VDC	3.3VDC	400mA	79%	15 mA	70 mA	100µF
IEU0224S05		5VDC	400mA	84%		100 mA	100µF
IEU0224S12		12VDC	167mA	86%		95 mA	100µF
IEU0224S15		15VDC	134mA	87%		95 mA	100µF
IEU0224D05		±5VDC	±200mA	84%		100 mA	±100µF
IEU0224D12		±12VDC	±83mA	86%		95 mA	±100µF
IEU0224D15		±15 VDC	±67mA	86%		95 mA	±100µF
IEU0248S3V3	36-75VDC	3.3VDC	400mA	79%	8 mA	35 mA	100µF
IEU0248S05		5VDC	400mA	83%		50 mA	100µF
IEU0248S12		12VDC	167mA	85%		50 mA	100µF
IEU0248S15		15VDC	134mA	86%		50 mA	100µF
IEU0248D05		±5VDC	±200mA	82%		50 mA	±100µF
IEU0248D12		±12VDC	±83mA	84%		50 mA	±100µF
IEU0248D15		±15 VDC	±67mA	84%		50 mA	±100µF

Notes:

1. Input currents measured at nominal input voltage.
2. Maximum capacitive load is per output.

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Input voltage range	4.5		9	VDC	5V nominal
	9		18		12V nominal
	18		36		24V nominal
	36		75		48V nominal
Input reflected ripple		20		mA pk-pk	Through 12µH inductor and 47µF capacitor
Input surge			12	VDC for 100ms	5V nominal
			25		12V nominal
			50		24V nominal
			100		48V nominal

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Output voltage	3.3		30	VDC	See models and ratings table
Initial set accuracy			±1.5	%	At full load
Output voltage balance			±2.0	%	For dual output with balanced laods
Minimum load				A	No minimum load required
Line regulation			±0.2	%	From minimum to maximum input at full load
Load regulation			±1.0	%	From 0 to full load
Cross regulation			±5.0	%	On dual output models when one load is varied between 25% and 100% and other is fixed at 100%
Transient response			5	% deviation	Recovery within 1% in less than 500µs for a 25% load change.
Ripple & noise		70		mV pk-pk	20MHz bandwidth. Measured using 0.47µF ceramic capacitor.
Overload protection		180		%	
Short circuit protection	Continuous, with auto recovery				
Maximum capacitive load	See models and ratings table				
Temperature coefficient			0.02	%/°C	

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Efficiency		88		%	See models and ratings table
Isolation: Input to Output	1500/1800			VDC	60s/1s
Isolation Resistance	10^9			Ω	At 500VDC
Isolation Capacitance				pF	
Switching Frequency			100	kHz	
Power Density			1.44 (23.7)	W/in^3	
Mean Time Between Failure				MHrs	MIL-HDBK-217F, +25°C GB
Weight				g (lb)	

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Operating temperature	-40		+95	°C	See derating curve
Storage temperature	-50		+125	°C	
Case temperature			+95	°C	
Humidity			95	%RH	Non-condensing
Cooling	Natural convection				
Case flammability	UL 94V-0 Rated, Non conductive black plastic				
Lead-free reflow solder process	IPC/JEDEC J-STD-020D.1				

Safety approvals

Safety agency	Standard	Notes & conditions
UL	UL/cUL60950-1, UL/cUL62368-1	Information technology
CB	IEC60950-1	Information technology
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

Emissions - EMC

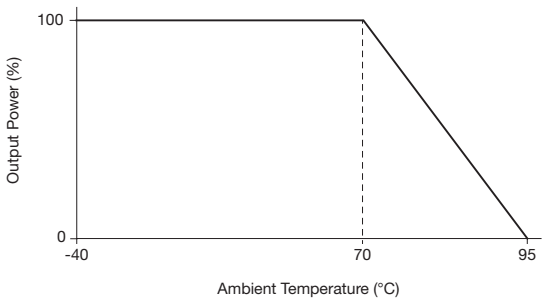
Phenomenon	Standard	Test level	Notes & conditions
Conducted	EN55022	Class A	See application note
Radiated	EN55022	Class A	

Immunity - EMC

Phenomenon	Standard	Test level	Criteria	Notes & conditions
ESD immunity	EN61000-4-2	±6/±8kV	A	Contact/air discharge
Radiated immunity	EN61000-4-3	10V/m	A	
EFT/Burst	EN61000-4-4	±2kV	A	With external input capacitor, suggested part is CHEMI-CON KY 220µF/100V
Surge	EN61000-4-5	±1kV	A	With external input capacitor, suggested part is CHEMI-CON KY 220µF/100V
Conducted immunity	EN61000-4-6	10Vrms	A	
Magnetic fields	EN61000-4-8	3A/m	A	

Application notes

Derating curve



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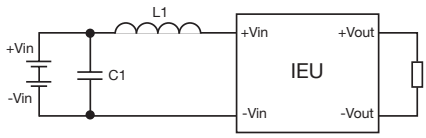
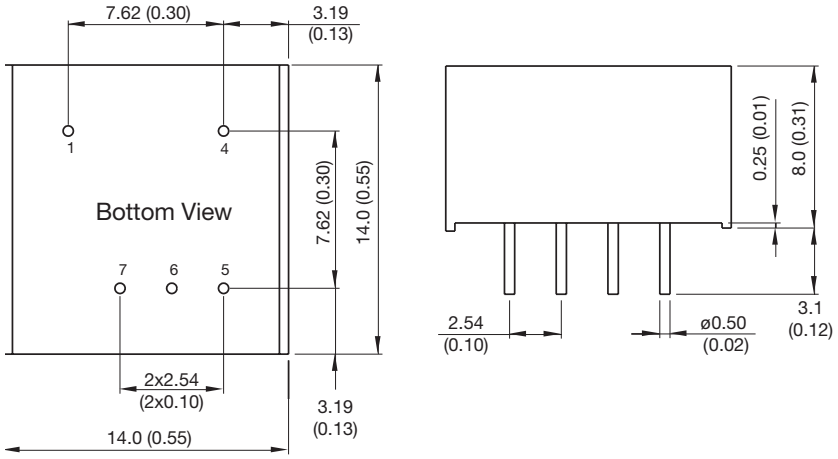


C1 = 1206 X7R MLCC, L1 = SCD0504T series

Model	C1	L1
IEU0205	4.7 µF/16 V	3.3 µH
IEU0212	4.7 µF/25 V	18.0 µH
IEU0224	4.7 µF/50 V	39.0 µH
IEU0248	2.2 µF/100 V	68.0 µH

Mechanical details



Pin connections		
Pin	**Single**	**Dual**
1	-Vin	-Vin
2	+Vin	+Vin
5	+Vout	+Vout
6	No Pin	Common
7	-Vout	-Vout

Notes:

1. All dimensions are in mm (inches)
2. Weight: 3.9 (0.008) g (lb) approx.
3. Pin tolerance: ±0.5 (±0.02)
4. Tolerance: X.X±0.25 (X.XX±0.01), X.XX±0.13 (X.XXX±0.005)