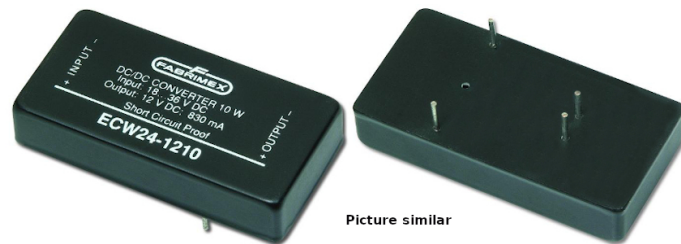


DC/DC Wide Input Converter ECW 10-E Series



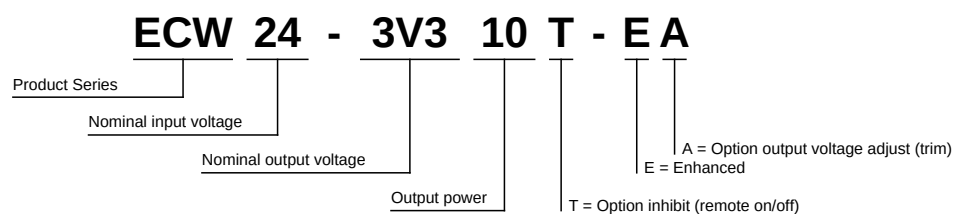
- * I/O isolation of 1500 Vdc
- * Continuous short circuit proof
- * Higher efficiency then standard ECW 1x2"
- * No derating up to 85°C
- * Low output ripple and noise
- * EMC according to EN55032 Class A
- * Without tantalum capacitors inside
- * Metal case with non conductive base plate, six sides shielded
- * Meets IEC/EN/UL 62368-1
- * Dimensions: 50.8 x 25.4 x 10.2 mm

Product Range

Model	Input nominal	Input range	I _{in} @ U _{in} nom. full load	I _{in} @ U _{in} nom. no load	U _{out}	Output I _{out} max.	power	Efficiency typ.	Max. capacity
Single									
ECW05-3V310-E	5Vdc	4.7...9Vdc	1.99A	120mA	3.3Vdc	2.5A	8.25W	82%	2'400uF
ECW05-0510-E	5Vdc	4.7...9Vdc	2.3A	120mA	5.0Vdc	2.0A	10W	85%	2'000uF
ECW05-1210-E	5Vdc	4.7...9Vdc	2.3A	50mA	12Vdc	833mA	10W	87%	940uF
ECW05-1510-E	5Vdc	4.7...9Vdc	2.35A	50mA	15Vdc	666mA	10W	87%	690uF
ECW12-3V310-E	12Vdc	9...18Vdc	840mA	30mA	3.3Vdc	2.5A	8.25W	82%	2'400uF
ECW12-0510-E	12Vdc	9...18Vdc	980mA	30mA	5.0Vdc	2.0A	10W	85%	2'000uF
ECW12-1210-E	12Vdc	9...18Vdc	960mA	35mA	12Vdc	833mA	10W	87%	940uF
ECW12-1510-E	12Vdc	9...18Vdc	960mA	35mA	15Vdc	666mA	10W	87%	690uF
ECW24-3V310E	24Vdc	18...36Vdc	420mA	25mA	3.3Vdc	2.5A	8.25W	82%	2'400uF
ECW24-0510-E	24Vdc	18...36Vdc	490mA	25mA	5.0Vdc	2.0A	10W	85%	2'000uF

ECW24-1210-E	24Vdc	18...36Vdc	480mA	25mA	12Vdc	833mA	10W	87%	940uF
ECW24-1510-E	24Vdc	18...36Vdc	480mA	25mA	15Vdc	666mA	10W	87%	690uF
ECW48-3V310-E	48Vdc	36...72Vdc	210mA	20mA	3.3Vdc	2.5A	8.25W	81%	2'400uF
ECW48-0510-E	48Vdc	36...72Vdc	250mA	20mA	5.0Vdc	2.0A	10W	85%	2'000uF
ECW48-1210-E	48Vdc	36...72Vdc	240mA	20mA	12Vdc	833mA	10W	87%	940uF
ECW48-1510-E	48Vdc	36...72Vdc	240mA	20mA	15Vdc	666mA	10W	87%	690uF
Dual									
ECW05-050510-E	5Vdc	4.7...9Vdc	2.35A	50mA	+5Vdc -5Vdc	+1A -1A	5W 5W	85%	1'000uF 1'000uF
ECW05-121210-E	5Vdc	4.7...9Vdc	2.3A	50mA	+12Vdc -12Vdc	+416mA -416mA	5W 5W	87%	440uF 440uF
ECW05-151510-E	5Vdc	4.7...9Vdc	2.3A	50mA	+15Vdc -15Vdc	+333mA -333mA	5W 5W	87%	330uF 330uF
ECW12-050510-E	12Vdc	9...18Vdc	980mA	45mA	+5Vdc -5Vdc	+1A -1A	5W 5W	85%	1'000uF 1'000uF
ECW12-121210-E	12Vdc	9...18Vdc	960mA	45mA	+12Vdc -12Vdc	+416mA -416mA	5W 5W	87%	440uF 440uF
ECW12-151510-E	12Vdc	9...18Vdc	960mA	45mA	+15Vdc -15Vdc	+333mA -333mA	5W 5W	87%	330uF 330uF
ECW24-050510-E	24Vdc	18...36Vdc	490mA	25mA	+5Vdc -5Vdc	+1A -1A	5W 5W	85%	1'000uF 1'000uF
ECW24-121210-E	24Vdc	18...36Vdc	480mA	25mA	+12Vdc -12Vdc	+416mA -416mA	5W 5W	87%	440uF 440uF
ECW24-151510-E	24Vdc	18...36Vdc	480mA	25mA	+15Vdc -15Vdc	+333mA -333mA	5W 5W	87%	330uF 330uF
ECW48-050510-E	48Vdc	36...72Vdc	250mA	20mA	+5Vdc -5Vdc	+1A -1A	5W 5W	85%	1'000uF 1'000uF
ECW48-121210-E	48Vdc	36...72Vdc	240mA	20mA	+12Vdc -12Vdc	+416mA -416mA	5W 5W	87%	440uF 440uF
ECW48-151510-E	48Vdc	36...72Vdc	240mA	20mA	+15Vdc -15Vdc	+333mA -333mA	5W 5W	87%	330uF 330uF

Nomenclature



Specifications

All values refer to an ambient temperature of 25°C and nominal rated values where nothing else is specified.

Input Specifications

Characteristic		Conditions	min	typ	max	unit
U _{IN}	Input voltage		See	product	range	Vdc
U _{UVLO}	Under voltage lockout		Off:4.2/8/16/32, On:4.4/8.4/17/34			Vdc
	Max. input current at full load		See	product	range	A
	No load input current		See	product	range	mA
	Inrush current				0.1	A^2s
	Input surge voltage	Max. 100ms	12/25/50/100			Vdc

Output Specifications

Characteristic		Conditions	min	typ	max	unit
U_{ACC}	Output voltage accuracy	Single / Dual		± 1.5		%
	Output voltage adjust			-		%
	Line regulation	Single / Dual			$\pm 0.2 / 0.5$	%
	Load regulation	Single / Dual			$\pm 0.2 / 1.0$	%
	Cross regulation				± 5	%
	Load transient recovery time	25% / 100% step load change		< 500		us
	Load transient error band			± 4.0		%
	Temperature coefficient			± 0.03		%/K
	Ramp up time				10	ms
	Start up time				20	ms
	Ripple and noise	BW = 20MHz	100			mVpp
	Current limit		110		140	% I_{nom}
	Over voltage protection			TVS		% U_{nom}
	Short circuit protection		continuous			% I_{nom}
	Short circuit characteristic		auto recovery			

General Specifications

Characteristic		Conditions	min	typ	max	unit
U_{ISO}	Isolation voltage	in/out, in/case, out/case	1500			Vdc
R_{ISO}	Isolation resistance		> 1G			Ohm
C_{ISO}	Isolation capacity		typ. 1000			pF
F_{SW}	Switching frequency		typ. 350			kHz
	Approvals		-			
	Safety Approvals		-			
	MTBF	MIL-STD-217-F, GB, 25°C	1'200'000			h
	Case material		Copper, black coated			
	Compound material		94V-0			
	PCB material		94V-0			
	Weight		35			gr
	Dimensions		50.8 x 25.4 x 10.2			mm
	Soldering infos		275°C for 10			s

EMC Specifications

Characteristic		Conditions	
	EMC conducted	See EMC information	EN55032/11 Class A

Environmental Specifications

Characteristic		Conditions	min	typ	max	unit
T _{AMB}	Operation temperature		-25...+85			°C
T _{AMB}	Storage temperature		-55...+125			°C
T _{SD}	Thermal shutdown range		None, Tcase max. = 105			°C

Own notes

EMC information

No EMC graph available yet, please contact factory

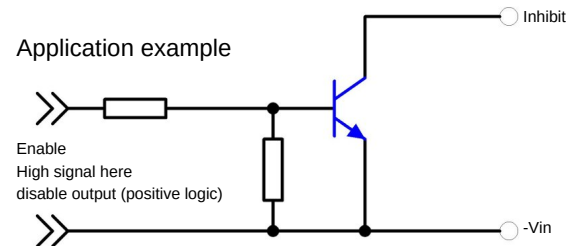
Suggested EMC Filter
None, no filter required to achieve curve A
Filter for curve B on request

Inhibit

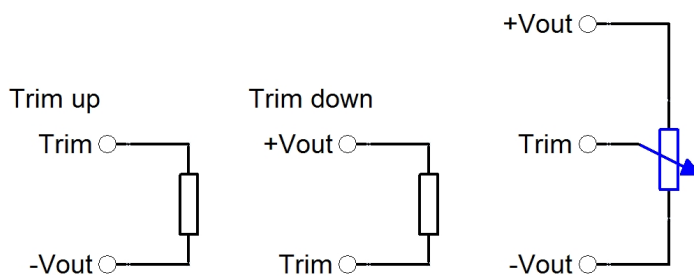
The ECW 10-E Series allows the user to switch the module on and off electronically by inhibit on/off feature.

Logic table (inhibit pin)

Logic state	Positive logic
Logic low	Module off
Logic high	Module on

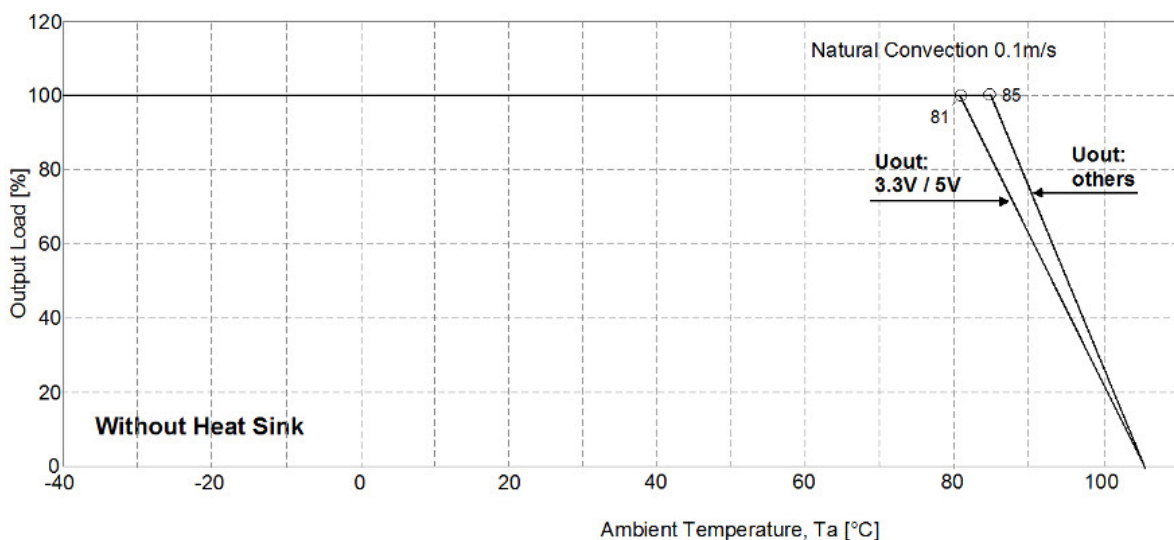


Trimming



Derating

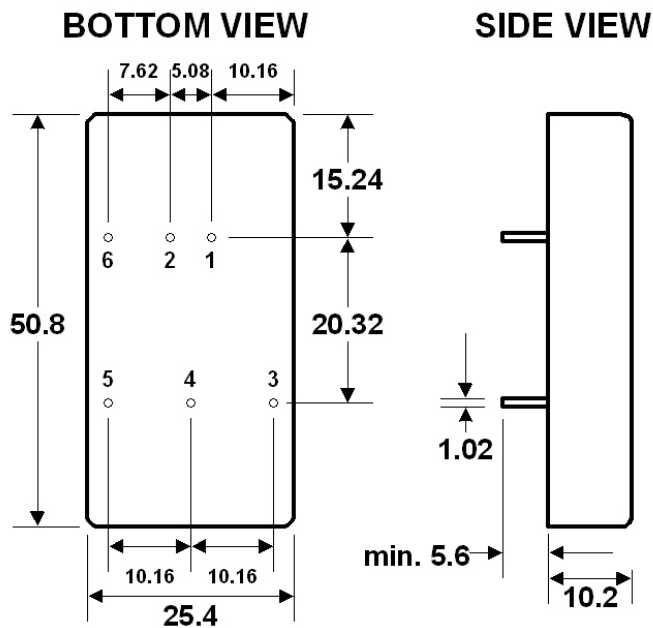
The operating case temperature range of ECW 10-E series is -25...+85°C. When operating the ECW 10-E series, proper derating or cooling is needed. The following curves are the derating curves of ECW 10-E. Please note that these are relative values in a test environment. Ambient temperature can not be exactly defined in an application, only the case temperature. Please ask the factory for a suitable heat sink.



Case

Normal tolerance 1/10 ± 0.5 mm, 1/100 ± 0.25 mm; Pin tolerance ± 0.05 mm diameter

NP = No pin, NC = Not connected, NA = Not available for electrical contact, do not connect, (opt) = optional



Pin	Single	Dual	Pin
1	+Vi	+Vi	1
2	-Vi	-Vi	2
3	+Vo	+Vo	3
4	Trim (opt)	Com	4
5	-Vo	-Vo	5
6	on/off (opt)	on/off (opt)	6

Cleaning

The modules are cleanable with the today's known and in the electronics industry usually used products. Due to the different cleaning processes and new available products, we highly recommend to do a compatibility test when using the converters the first time.

Notice: All statements, technical information, and recommendations related to FABRIMEX's products are based on information believed to be reliable, but the accuracy or completeness thereof is not guaranteed. Before utilizing the product, the user should determine the suitability of the product for its intended use.

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The logo for EXISTA, featuring the word "EXISTA" in a bold, sans-serif font. The "E" is dark blue, and the "XISTA" part is a lighter blue.