

DC/DC Wide Input Converter ECW 08 Series



- * I/O isolation of 1500 Vdc, ask factory for 3000 Vdc
- * Pi-filter at input
- * Continuous short circuit proof
- * Efficiency up to 83%
- * No derating up to 71°C
- * Low output ripple and noise
- * Metal case with non conductive base plate
- * SMD mounting available
- * UL60950-1 recognized
- * Safety Meets IEC/EN/UL 62368-1



Product Range

Model	Input nominal	Input range	Iin @ Uin nom.		Uout	Output Iout max.	power	Efficiency typ.	Max. capacity
			full load	no load					
Single									
ECW12-0308SH	12Vdc	9...18Vdc	0.529A	25mA	3.3Vdc	1.5A	5W	78%	4'700uF
ECW12-0508SH	12Vdc	9...18Vdc	0.781A	25mA	5.0Vdc	1.5A	7.5W	80%	4'700uF
ECW12-1208SH	12Vdc	9...18Vdc	0.753A	25mA	12Vdc	0.625A	7.5W	83%	4'700uF
ECW12-1508SH	12Vdc	9...18Vdc	0.744A	25mA	15Vdc	0.5A	7.5W	82%	4'700uF
ECW24-0308SH	24Vdc	18...36Vdc	0.264A	20mA	3.3Vdc	1.5A	5W	78%	4'700uF
ECW24-0508SH	24Vdc	18...36Vdc	0.377A	20mA	5.0Vdc	1.5A	7.5W	83%	4'700uF
ECW24-1208SH	24Vdc	18...36Vdc	0.359A	20mA	12Vdc	0.625A	7.5W	87%	4'700uF
ECW24-1508SH	24Vdc	18...36Vdc	0.359A	20mA	15Vdc	0.5A	7.5W	87%	4'700uF
ECW48-0308SH	48Vdc	36...72Vdc	0.136A	10mA	3.3Vdc	1.5A	5W	76%	4'700uF
ECW48-0508SH	48Vdc	36...72Vdc	0.193A	10mA	5.0Vdc	1.5A	7.5W	81%	4'700uF
ECW48-1208SH	48Vdc	36...72Vdc	0.184A	10mA	12Vdc	0.625A	7.5W	85%	4'700uF
ECW48-1508SH	48Vdc	36...72Vdc	0.182A	10mA	15Vdc	0.5A	7.5W	86%	4'700uF

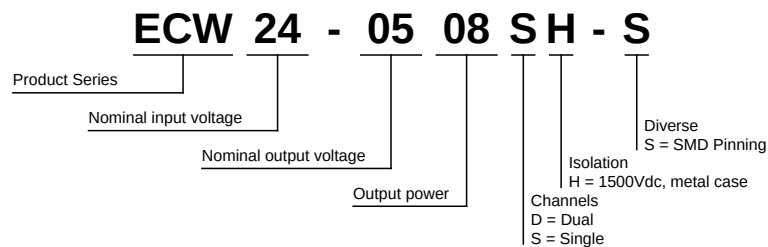
Dual

ECW12-0508DH	12Vdc	9...18Vdc	0.772A	30mA	+5.0VDC -5.0VDC	+0.75A -0.75A	3.75W 3.75W	81%	2'200uF 2'200uF
ECW12-1208DH	12Vdc	9...18Vdc	0.753A	30mA	+12Vdc -12Vdc	+0.31A -0.31A	3.75W 3.75W	83%	2'200uF 2'200uF
ECW12-1508DH	12Vdc	9...18Vdc	0.753A	30mA	+15Vdc -15Vdc	+0.25A -0.25A	3.75W 3.75W	83%	2'200uF 2'200uF
ECW24-0508DH	24Vdc	18...36Vdc	0.372A	25mA	+5.0VDC -5.0VDC	+0.75A -0.75A	3.75W 3.75W	84%	2'200uF 2'200uF
ECW24-1208DH	24Vdc	18...36Vdc	0.356A	25mA	+12Vdc -12Vdc	+0.31A -0.31A	3.75W 3.75W	87%	2'200uF 2'200uF
ECW24-1508DH	24Vdc	18...36Vdc	0.356A	25mA	+15Vdc -15Vdc	+0.25A -0.25A	3.75W 3.75W	87%	2'200uF 2'200uF
ECW48-0508DH	48Vdc	36...72Vdc	0.191A	15mA	+5.0VDC -5.0VDC	+0.75A -0.75A	3.75W 3.75W	82%	2'200uF 2'200uF
ECW48-1208DH	48Vdc	36...72Vdc	0.183A	15mA	+12Vdc -12Vdc	+0.31A -0.31A	3.75W 3.75W	85%	2'200uF 2'200uF
ECW48-1508DH	48Vdc	36...72Vdc	0.183A	15mA	+15Vdc -15Vdc	+0.25A -0.25A	3.75W 3.75W	85%	2'200uF 2'200uF

Notes:

Maximum case temperature under any operating condition should not be exceeded 100°C

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					Vdc
Max. input current at full load		See	product	range	A
No load input current		See	product	range	mA
Inrush current					A ² s
Input surge voltage					Vdc

Output Specifications

Characteristic	Conditions	min	typ	max	unit
U_{ACC} Output voltage accuracy			±2		%
Output voltage adjust					%
Line regulation			±0.2		%
Load regulation	25% / 100% step load change		s: ±0.5, d: ±1		%
Cross regulation					%

	Load transient recovery time	25% / 100% step load change			us
	Load transient error band				%
	Temperature coefficient			±0.05	%/K
	Ramp up time				ms
	Start up time			3.3V/5V: 5, others: 20	ms
	Ripple and noise	BW = 20MHz		100	mVpp
	Current limit				% Inom
	Over voltage protection				% Unom
	Short circuit protection				% Inom
	Short circuit characteristic			continuous	

General Specifications

Characteristic		Conditions	min	typ	max	unit
U _{ISO}	Isolation voltage			1500		Vdc
R _{ISO}	Isolation resistance			1G		Ohm
C _{ISO}	Isolation capacity			560		pF
F _{SW}	Switching frequency			300		kHz
	Approvals			UL / cUL File No. E195564		
	Safety Approvals					
	MTBF			>1'800k		h
	Case material			Copper, black coated		
	Compound material			UL94V-0		
	PCB material			UL94V-0		
	Weight			18.5		gr
	Dimensions			31.8 x 20.3 x 10.2 (SMD) 11.4		mm
	Soldering infos			275°C for 10		s

EMC Specifications

Characteristic		Conditions	
	EMC conducted	See EMC information	EN55022/11 Class A

Environmental Specifications

Characteristic		Conditions	min	typ	max	unit
T _{AMB}	Operation temperature	Derating above 71°C		-25...+85		°C
T _{AMB}	Storage temperature			-40...+100		°C
T _{SD}	Thermal shutdown range					°C

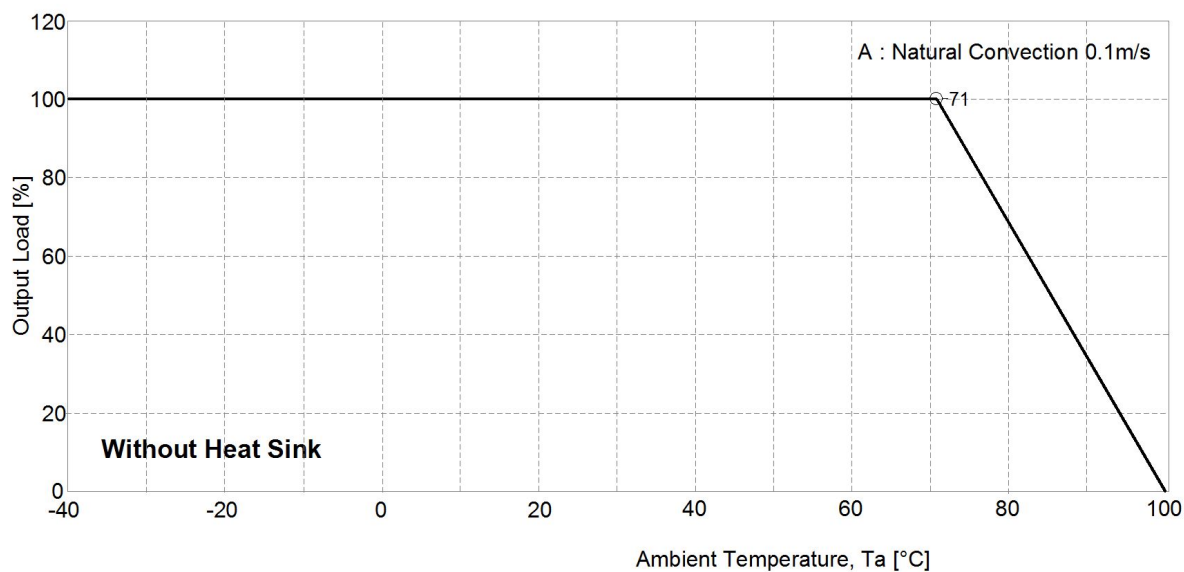
EMC information

No EMC graph available yet, please contact factory

No EMC filter available yet, please contact factory

Derating

The operating case temperature range of ECW 08 series is -25...+85°C. When operating the ECW 08 series, proper derating or cooling is needed. The following curves are the derating curves of ECW 08. 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.



Own notes

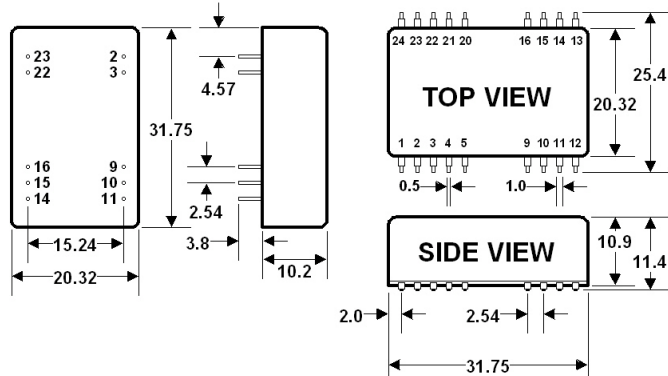
Case

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

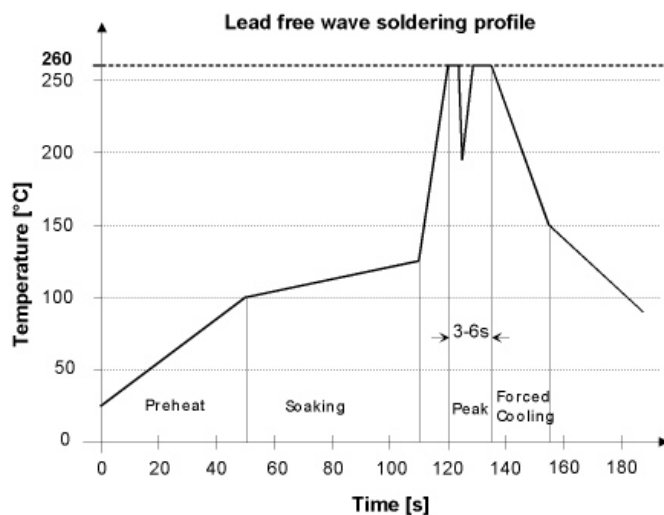
1500V or 3000V THD & SMD

BOTTOM VIEW SIDE VIEW



Pin	Single	Dual	Pin
2	Gi	Gi	2
3	Gi	Gi	3
9	NC	Go	9
10	NC	NC	10
11	NC	-Vo	11
14	+Vo	+Vo	14
15	NC	NC	15
16	Go	Go	16
22	+Vi	+Vi	22
23	+Vi	+Vi	23

Soldering



1. Soldering Materials: Sn/Cu/Ni
2. Preheat: 1.4 °C/s (From 30°C to 100°C)
3. Soaking: 0.5 °C/s (From 100°C to 130°C), 60 $\pm$ 20s
4. Peak temperature: 260°C, above 250°C 3-6s
5. Forced cooling: -10.0 °C/s (From 260°C to 150°C)

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, with the word "EXISTA" in a bold, sans-serif font. The "E" is dark blue, and the "XISTA" part is a lighter blue/cyan color.