

Features

- **Standard pin out**; Fully replaceable with **0.8" X 1.3"** standard 24-PINs case
- High efficiency – **88%@ 5V / 3A** Full Load
- Compact size – **0.7" x 1.1" x 0.38"**
- **4:1 Ultra-Wide** input range 5 – 20 & 18 – 75VDC
- 3.3V, 5V, 12V or $\pm 12V$ outputs
- -40°C to +60°C operation without derating
- MTBF \geq 2,195,000 hours @50°C GB (BellCoreTR-332)
- Total output voltage tolerance $\pm 2\%$
- Patented architecture and control circuitry
No tantalum capacitor & no aluminum electrolytic capacitor
- Light weight – **no potting**
- Compliance of **RoHS** directive
- Both mountings of **DIP** type and **SMD** type are available
- **UL60950-1** and **EN60950-1** pending

Description

The new **ESA** series converters are targeted specifically at the telecommunication, industrial electronics, mobile telecommunication, and distributed power markets. These 8 members accept two ultra-wide input voltage ranges from 5 to 20 & 18 to 75 VDC and provide single or dual outputs. All models feature fixed switching frequency operation, input under voltage lockout, over-temperature protection, output current limiting, and short circuit protection.

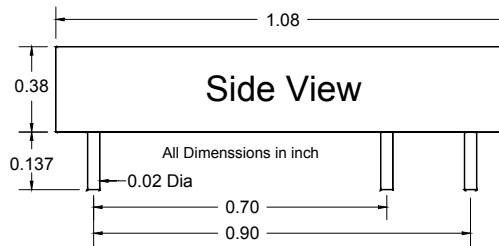
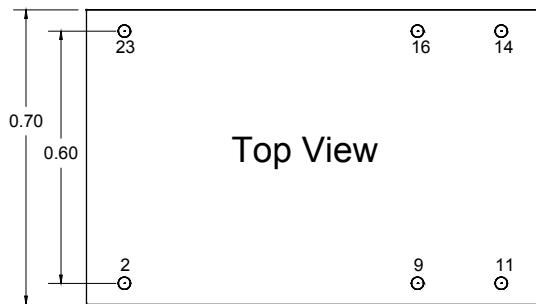
The converters combine creative design concept and conservative component selection to achieve very high reliability, high performance and low cost.

Program Models' designed data

Typical @ Ta=+25°C under nominal line voltage and full load conditions unless noted.

Model	Input				Output			Efficiency @FL
	Voltage (Volts)		Current (A)		Voltage (Volts)	Current (A)	Power (W)	
	Nominal	Range	No load	Full load				Typ.
ESA36033-4-E-X	36	18-75	0.05	0.47	3.3	4.5	15	87%
ESA36050-3-E-X	36	18-75	0.05	0.47	5.0	3	15	88%
ESA36120-S-E-X	36	18-75	0.02	0.38	12.0	1.0	12	86%
ESA36120-D-E-X	36	18-75	0.02	0.38	± 12.0	0.5	12	86%
ESA10033-4-E-X	10	5-20	0.2	1.75	3.3	4.5	15	85%
ESA10050-3-E-X	10	5-20	0.2	1.74	5.0	3	15	86%
ESA10120-S-E-X	10	5-20	0.1	1.43	12.0	1.0	12	84%
ESA10120-D-E-X	10	5-20	0.1	1.43	± 12.0	0.5	12	84%

Enable Polarity: "-P" for positive logic PI Input Filter, "-N" for negative logic PI Input Filter



Pin	Single	Dual
2	-Vin	-Vin
9	NC	NC
11	NC	-Vout
14	+Vout	+Vout
16	Comm	Comm
23	+Vin	+Vin

Electrical Specifications

Typical @ Ta=+25°C under nominal line voltage and full load conditions unless noted.

Input

Parameter	Notes and Conditions	Min.	Typ	Max.	Unit
Operating Input Voltage ranges	ESA10 models ESA36 models	5 18	10 36	20 75	VDC
Under-Voltage Lockout Turn-ON Threshold	ESA10 models ESA36 models	5 17.5			VDC
Under-Voltage Lockout Turn-OFF Threshold	ESA10 models ESA36 models			4.5 17	VDC
Input Current	See model selection guide, Standby mode (OFF, UVLO) 5mA				
High Input Level	Enable Function Input	5.0			VDC
Low Input Level		0		1.2	VDC
Input Filter	All models	Built-in PI Filter			

Output

Parameter	Notes and Conditions	Min.	Typ	Max.	Unit
Output Voltage Accuracy	10% Load			±1.0	%
Line Regulation	Low line to High line			±0.3	%
Load Regulation	10% to 100% load			±0.5	%
Ripple & Noise (20MHz bandwidth)	Over Line, Load & Temp.		50	100 30	mV pk-pk mV RMS
Temperature Coefficient				±0.04	% / °C
Transient Recovery Time	50-75% load step change		100	200	µSec.
Transient Peck Deviation	50-75% load step change			±2	%Vo
Start-Up Time			100	200	mSec.
Output Power Protection		100	120	140	%

General Specifications

Parameter	Notes and Conditions	Min.	Typ	Max.	Unit
Switching Frequency		220	260	300	KHz
Storage Temperature range	All models	-55		125	°C
Operating Case Temperature	All models	-40		100	°C
Isolation Voltage	All models, 1 Minute			500	VDC
Isolation Resistance	All models, 500VDC	10			MΩ
Isolation Capacitance	All models			1000	pF
Humidity	All models			95	%
Calculated MTBF	BellCore TR-332 @ 50°C G.B.		TBD		Hours
Weight				TBD	g (oz.)
Efficiency	See model selection guide				
Dimensions	0.7" x 1.1" x 0.38" (17.8 x 28.0 x 9.7mm)				

It is recommended to protect the input by fuses or other protection devices.

The information and specifications contained in this data sheet are believed to be correct at time of publication. All specifications are subject to change without notice. No rights under any patent accompany the sale of any such products or information contained herein.