



## EC6AW-110 SERIES 10 WATT 4:1 INPUT DC-DC CONVERTERS



### FEATURES

- \* 8.25-10W Isolated Output
- \* Efficiency to 88.5%
- \* Low No Load Power Consumption
- \* 4:1 Input Range
- \* Regulated Outputs
- \* Input Under-Voltage Protection
- \* Remote On/Off
- \* Continuous Short Circuit Protection
- \* Over Current Protection
- \* All Ceramic Capacitor Design
- \* UL60950-1 2<sup>nd</sup> (Basic Insulation) Approval
- \* Meets EN50155 with External Circuits
- \* Shock & Vibration Meets EN50155 (EN61373)
- \* Fire & Smoke Meets EN45545-2
- \* 3050m Operating Altitude
- \* Safety Meets IEC/EN/UL 62368-1



MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT		INPUT CURRENT		% EFF.	CAPACITOR LOAD MAX.
			MIN.	MAX.	NO LOAD	FULL LOAD		
EC6AW-110S33	43-160 VDC	3.3 VDC	0 mA	2500 mA	6 mA	89 mA	85	2500 $\mu$ F
EC6AW-110S05	43-160 VDC	5 VDC	0 mA	2000 mA	6 mA	105 mA	87	2000 $\mu$ F
EC6AW-110S12	43-160 VDC	12 VDC	0 mA	835 mA	6 mA	104 mA	88	835 $\mu$ F
EC6AW-110S15	43-160 VDC	15 VDC	0 mA	666 mA	6 mA	103 mA	88.5	666 $\mu$ F
EC6AW-110D05	43-160 VDC	$\pm$ 5 VDC	0 mA	$\pm$ 1000mA	6 mA	107 mA	85	1000 $\mu$ F
EC6AW-110D12	43-160 VDC	$\pm$ 12 VDC	0 mA	$\pm$ 416mA	6 mA	105 mA	87	416 $\mu$ F
EC6AW-110D15	43-160 VDC	$\pm$ 15 VDC	0 mA	$\pm$ 333mA	6 mA	104 mA	87.5	333 $\mu$ F

#### NOTE:

1. Nominal Input Voltage 110 VDC

# SPECIFICATIONS

All Specifications Typical at Nominal Line, Full Load, and 25°C Unless Otherwise Noted

## INPUT SPECIFICATIONS:

Input Voltage Range	110V	43-160V
Input Surge Voltage (100ms max.)		200Vdc max.
Under Voltage Lockout	power up	40V
	power down	38V
Positive Logic Remote On/Off (note3&4)		
Input Filter		PI Type

## OUTPUT SPECIFICATIONS:

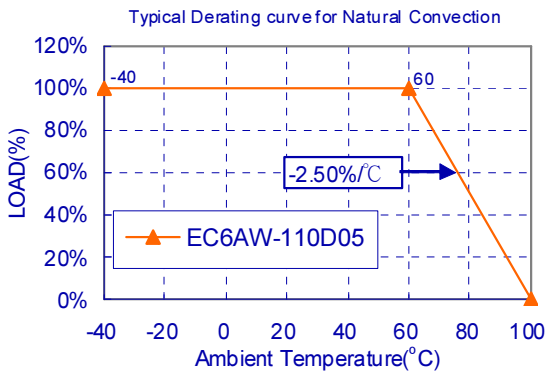
Voltage Accuracy	±1.0% max.
Voltage Balance (Dual Output)	±2.0% max.
Transient Response: 75% - 100% Step Load Change	
Error Band	±5% Vout Nominal, Recovery Time < 250us
Ripple & Noise, 20MHz BW (Measured with 1uF MLCC)	
	Vo=3.3V, 5V, ±5V 75mV pk-pk max.
	Vo=12V, 15V, ±12V, ±15V 100mV pk-pk max.
Temperature Coefficient	±0.02%/°C max.
Short Circuit Protection	Continuous
Line Regulation (note1)	±0.2% max.
Load Regulation (note2)	Single ±0.5% max.
	Dual ±1.0% max.
Cross Regulation (Dual output) Load Cross Variation 25%/100%	±5.0% max.
Over Voltage Protection	Zener or TVS Clamp
Current Limit	110%-170% Nominal Output
Start up Time	10ms typ.

## GENERAL SPECIFICATIONS:

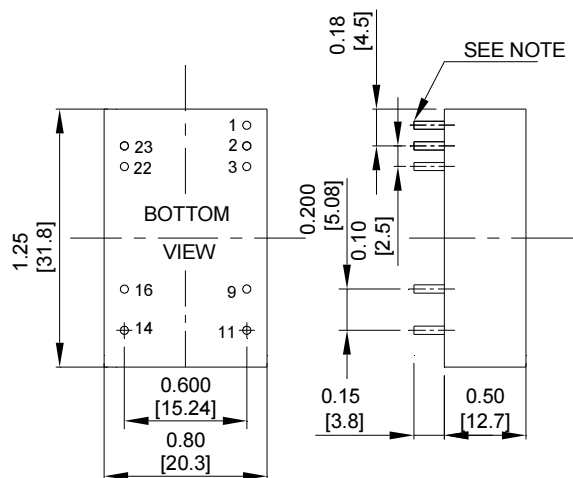
Efficiency	See Table
Isolation Voltage	3000VDC min.
Isolation Resistance	10 <sup>9</sup> Ohms min
Isolation Capacitance	1000pF typ.
Switching Frequency	240KHz typ
Operating Ambient Temperature Range	-40°C to +85°C
De-rating, Above 60°C	Vo=±5V .... Linearly to Zero Power at +100°C
De-rating, Above 67°C (note7) ... Others	Linearly to Zero Power at +100°C
Case Temperature (note5)	100°C max.
Cooling	Natural Convection
Storage Temperature Range	-55°C to +125°C
Humidity	95% RH max. Non-Condensing
MTBF	MIL-HDBK-217F, GB, 25°C, Full Load 1200Khrs typ.
Safety	Meets UL60950-1 2 <sup>nd</sup> (Basic insulation)
EMC (note6)	Meets EN50155 (EN50121-3-2) with External Filter
Shock/Vibration	Meets EN50155(EN61373)
Fire & Smoke	Meet EN45545-2
Dimensions	1.25x0.80x0.50 inches (31.8x20.3x12.7mm)
Case Material	Non-Conductive Black Plastic
Weight	16g

## NOTE:

1. Measured from high line to low line.
2. Measured from full load to min. load.
3. Logic Compatibility ... CMOS or open collector TTL referenced to -Vin.  
Module on >3.5VDC to 160VDC or open circuit  
Module off 0 to <1.2VDC
4. Suffix "N" to the model number with negative logic remote on/off  
Module on 0 to < 1.2Vdc  
Module off >3.5VDC to 160VDC or open circuit
5. Maximum case temperature under any operating condition should not be exceeded 100°C.
6. For information about EN50155 and RIA12, refer to application note.
7. Others model refer to application note.



## CASE A Dimensions:



NOTE: Pin Size is 0.02±0.002 Inch (0.5±0.05 mm) DIA  
All Dimensions In Inches (mm)  
Tolerances Inches: X.XX= ±0.02 , X.XXX= ±0.010  
Millimeters: X.X= ±0.5 , X.XX=±0.25

PIN CONNECTION		
Pin	Single Output	Dual Output
1	Remote On/Off	Remote On/Off
2,3	-V Input	-V Input
4,5	NP	NP
9	NP	Common
10	NP	NP
11	NC	-V Output
12	NP	NP
13	NP	NP
14	+V Output	+V Output
15	NP	NP
16	-V Output	Common
20,21,24	NP	NP
22,23	+V Input	+V Input

\* NC-NO CONNECTION WITH PIN

\* NP-NO PIN