

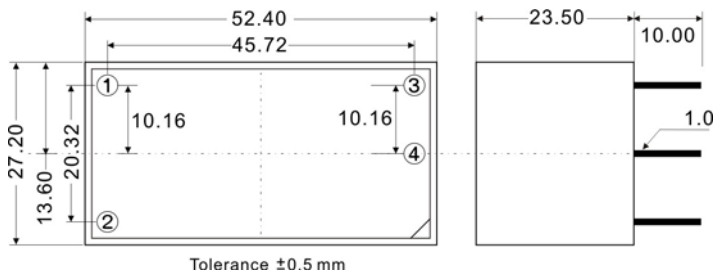
**EF10 SERIES**
**10 Watts**
**KEY FEATURES**

- PC Board Mountable Switching Power Module
- Fully Encapsulated Plastic Case
- Universal Input Range 90-264VAC, 47-440 Hz
- Regulated Output
- Low Ripple and Noise
- High Efficiency
- CE, CB, UL Approval
- 2-Year Warranty

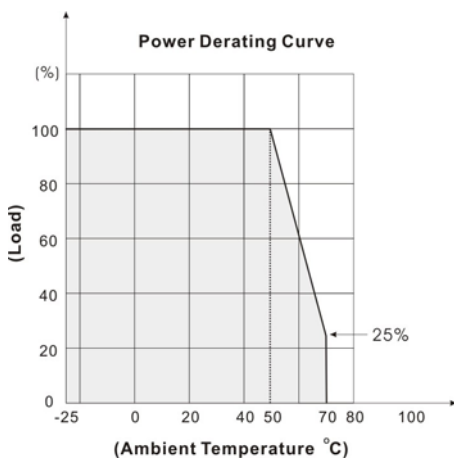

**ELECTRICAL SPECIFICATIONS**

Model No.	EF10-3.3S	EF10-5S	EF10-12S	EF10-15S	EF10-24S
Max Output Wattage (W)	8W	10W	10W	10W	10W
Input	Voltage				
	90-264 VAC				
	Frequency (Hz)				
	47-440 Hz				
	Current (Full load)				
220 mA max. (115 VAC) / 150 mA max. (230 VAC)					
Inrush Current (<2ms)					
10 A max. (115 VAC) / 20 A max. (230 VAC)					
Leakage Current					
0.25 mA max.					
Output	Voltage (V.DC.)				
	3.3V	5V	12V	15V	24V
	Voltage Accuracy				
	±2%				
	Current (mA) max				
	2500	2000	833	667	417
	Line Regulation (LL-HL) (typ.)				
	±0.3%.				
	Load Regulation (5-100%) (typ.)				
	±0.5%.				
	Minimum Load				
	0%				
Maximum Capacitive Load					
470-23,000µF depending on model					
Ripple					
<0.2% Vout +40mV max (Vp-p)					
Noise					
<0.5% Vout +50mV max (Vp-p)					
Efficiency					
70%	72%	76%	75%	72%	
Hold-up Time					
15 ms min.					
Switching Frequency					
125 kHz					
Protection	Over Power Protection				
	Hiccup technique, auto-recovery				
	Over Voltage Protection				
Zener diode clamp					
Short Circuit Protection					
Hiccup mode, indefinite (automatic recovery)					
Isolation	Input-Output (V.AC)				
3000V					
Environment	Operating Temperature				
	-25°C...+70°C (with derating)				
	Storage Temperature				
	-40°C...+85°C				
	Temperature Coefficient				
±0.02%/°C					
Humidity					
20-85% RH					
MTBF					
>330,000 h @ 25°C (MIL-HDBK-217F)					
Physical	Dimension (L x W x H)				
	2.06 x 1.07 x 0.93 Inches ( 52.4 x 27.2 x 23.5 mm ) Tolerance ±0.5 mm				
	Case Material				
	Plastic resin with Fiberglass (flammability to UL 94V-0)				
Weight					
54 g					
Cooling Method					
Free air convection					
Genera	Vibration				
	10-55 Hz 0.5 mm width/ 1 minute cycle				
Shock					
20 G (3 directions each 3 times.)					
Safety	Agency Approvals				
UL/cUL, CE, CB					
EMC	EMI (Conducted & Radiated Emission)				
	EN 55022 class B				
EMS (Noise Immunity)					
EN 55024					

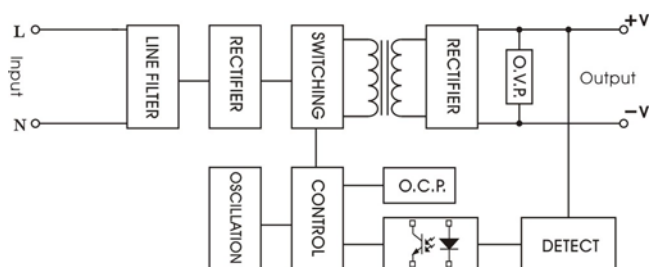
All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

**MECHANICAL DIMENSION ( Top View )**


PIN#	SINGLE
1	AC IN (N)
2	AC IN (L)
3	+DC OUT
4	-DC OUT

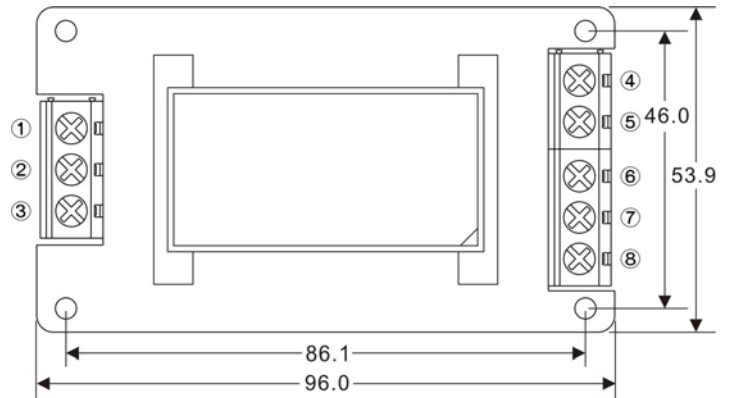
**DERATING**

**BLOCK DIAGRAM**

Single Output

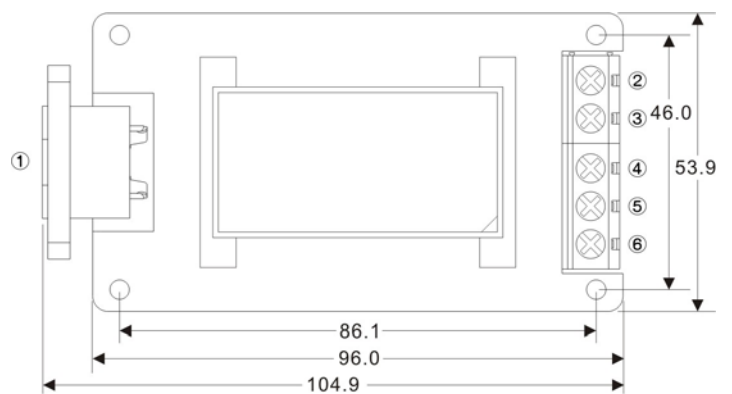


**SCREW TERMINAL**
**EF-A2**


PIN#	Single
1	NO CONNECT
2	AC IN (N)
3	AC IN (L)
4.	NO CONNECT
5	+DC OUT
6	-DC OUT
7	NO CONNECT
8	NO CONNECT

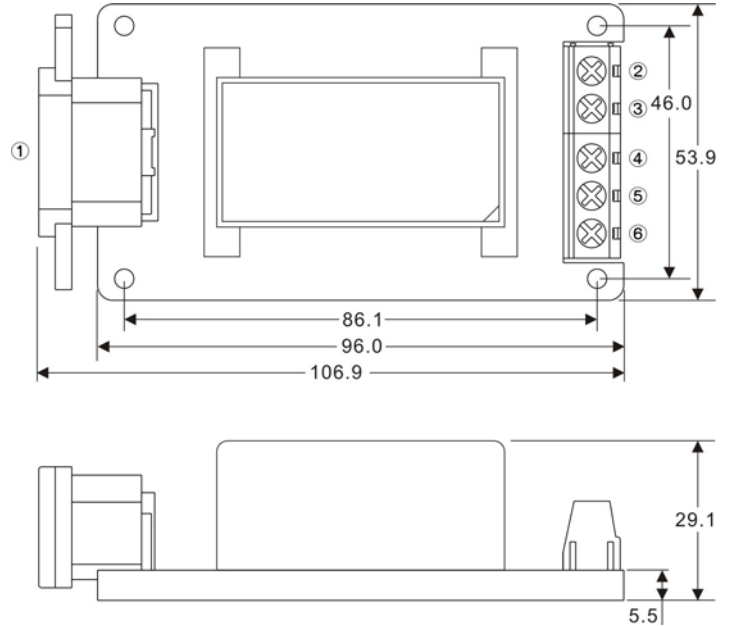

**EF-A3**


PIN#	Single
1	AC IN
2	NO CONNECT
3	+DC OUT
4.	-DC OUT
5	NO CONNECT
6	NO CONNECT

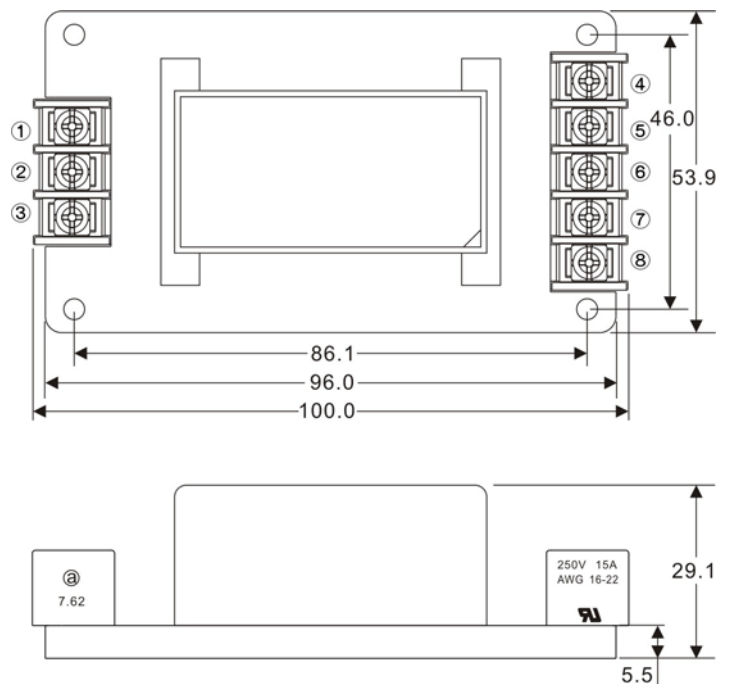


**EF10 SERIES**
**10 Watts**
**EF-A4**


PIN#	Single
1	AC IN
2	NO CONNECT
3	+DC OUT
4.	-DC OUT
5	NO CONNECT
6	NO CONNECT

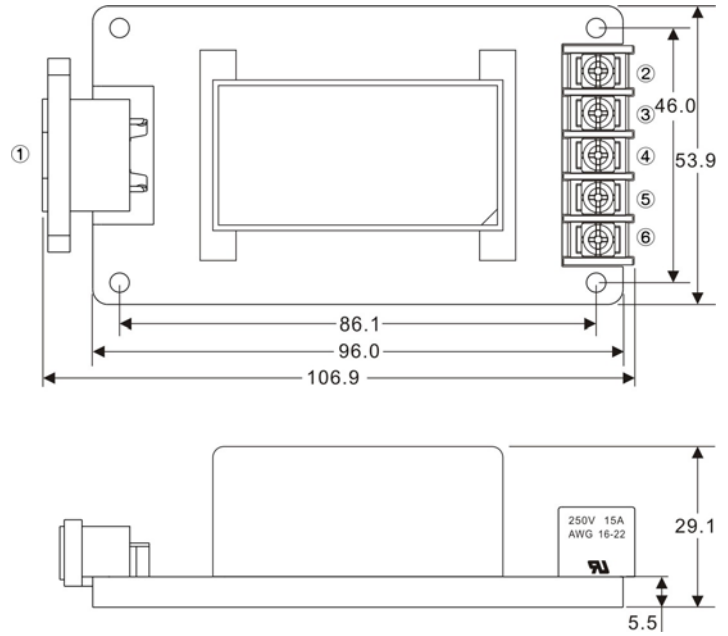

**EF-A5**


PIN#	Single
1	NO CONNECT
2	AC IN (N)
3	AC IN (L)
4.	NO CONNECT
5	+DC OUT
6	-DC OUT
7	NO CONNECT
8	NO CONNECT



**EF10 SERIES**
**10 Watts**
**EF-A6**


PIN#	Single
1	AC IN
2	NO CONNECT
3	+DC OUT
4	-DC OUT
5	NO CONNECT
6	NO CONNECT


**EF-A7**


PIN#	Single
1	AC IN
2	NO CONNECT
3	+DC OUT
4	-DC OUT
5	NO CONNECT
6	NO CONNECT

