



### ■ Features :

- Universal AC input / Full range
- Built-in active PFC function,  $PF \geq 0.94$
- High efficiency up to 86%
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Cooling by free air convection
- 1U low profile 36mm
- Conformal coated
- ZVS technology to reduce power dissipation
- LED indicator for power on
- 3 years warranty

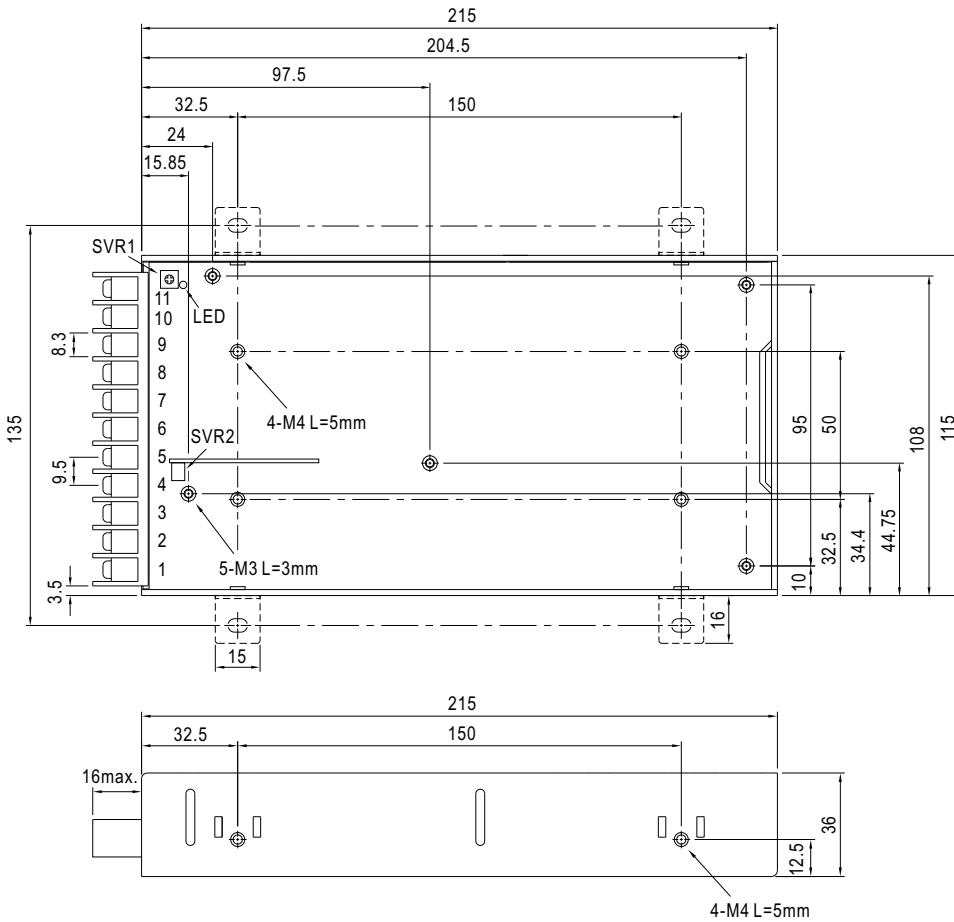


### SPECIFICATION

MODEL		HDP-190	
OUTPUT	OUTPUT NUMBER	V1	V2
	DC VOLTAGE	+3.8V	+2.8V
	RATED CURRENT	33A	20A
	CURRENT RANGE (max.)	0 ~ 40A	0 ~ 22A
	RATED POWER	181.4W (typ.)    192W (max.)	
	OUTPUT POWER (max.)	192W continue. V1 total power output shall not exceed 160W (max. 40A) ; V2 total power output shall not exceed 66W (max. 22A) (The V1 & V2 combine total power output shall not exceed 192W)	
	RIPPLE & NOISE (max.) Note.2	100mVp-p	100mVp-p
	VOLTAGE ADJ. RANGE Note.6	3.6 ~ 4V	2.5 ~ 3V
	VOLTAGE TOLERANCE Note.3	±2.0%	±2.0%
	LINE REGULATION	±0.5%	±0.5%
	LOAD REGULATION	±2.0%	±2.0%
	SETUP, RISE TIME	1000ms, 50ms/230VAC    2500ms, 50ms/115VAC at full load	
HOLD UP TIME (Typ.)	16ms/230VAC    16ms/115VAC at full load		
INPUT	VOLTAGE RANGE Note.5	90 ~ 264VAC    127 ~ 370VDC	
	FREQUENCY RANGE	47 ~ 63Hz	
	POWER FACTOR (Typ.)	PF ≥ 0.94/230VAC	PF ≥ 0.98/115VAC at full load
	EFFICIENCY (Typ.)	86%	
	AC CURRENT (Typ.)	2.7A/115VAC	1.1A/230VAC
	INRUSH CURRENT (Typ.)	30A/115VAC	45A/230VAC
	LEAKAGE CURRENT	<2mA / 240VAC	
PROTECTION	OVERLOAD	V1+V2: 105 ~ 150% max. output power ; or V2: 125 ~ 170% rated current Protection type: Hiccup mode, recovers automatically after fault condition is removed	
	OVER VOLTAGE	V1: 4.37 ~ 5.13V	V2: 3.22 ~ 3.78V Protection type : Shut down o/p voltage, re-power on to recover
	OVER TEMPERATURE	95°C ±5°C (TSW1) detect on heatsink of power transistor Protection type : Shut down o/p voltage, re-power on to recovery	
ENVIRONMENT	WORKING TEMP.	-30 ~ +70°C (Refer to "Derating Curve")	
	WORKING HUMIDITY	20 ~ 90% RH non-condensing	
	STORAGE TEMP., HUMIDITY	-40 ~ +85°C, 10 ~ 95% RH	
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C)	
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes	
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL60950-1, TUV EN60950-1 approved	
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC    I/P-FG:1.5KVAC    O/P-FG:0.5KVAC	
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH	
	EMC EMISSION	Compliance to EN55022 (CISPR22) class B, EN61000-3-2,-3	
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61000-6-2, heavy industry level, criteria A	
OTHERS	MTBF	111.3K hrs min.    MIL-HDBK-217F (25°C)	
	DIMENSION	215*115*36mm (L*W*H)	
	PACKING	0.95Kg; 15pcs/15.3Kg/0.7CUFT	
NOTE	<ol style="list-style-type: none"> <li>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</li> <li>2. Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf &amp; 47uf parallel capacitor.</li> <li>3. Tolerance : includes set up tolerance, line regulation and load regulation.</li> <li>4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.</li> <li>5. Derating may be needed under low input voltages. Please check the derating curve for more details.</li> <li>6. Output voltage between V1 and V2 should be higher than 0.8V(V1-V2 ≥ 0.8V).</li> </ol>		

### Mechanical Specification

Case No.206A Unit:mm

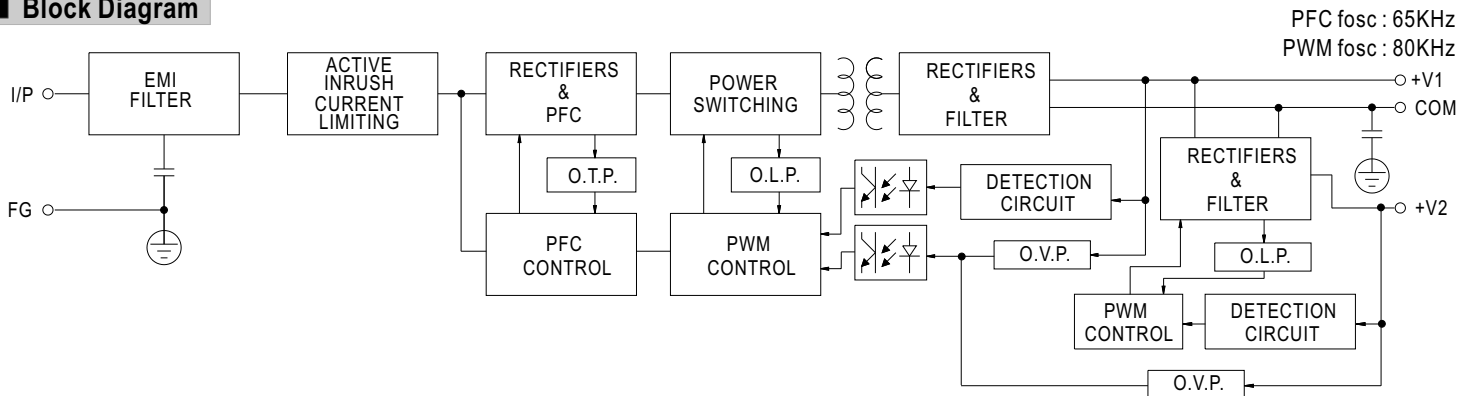


#### Terminal Pin No. Assignment :

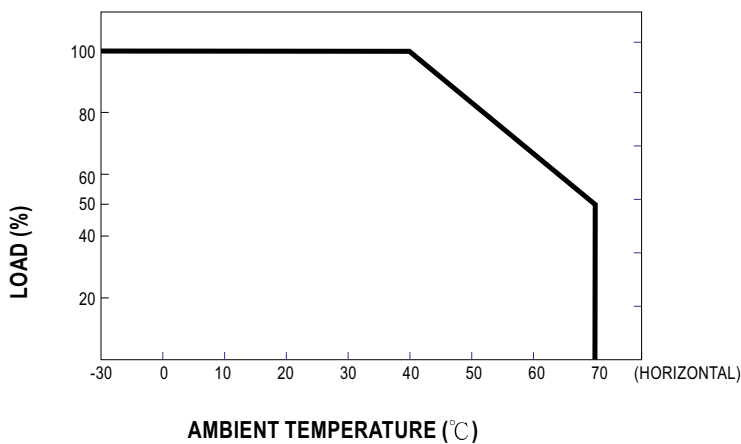
Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4,5	V2(+2.8V)
2	AC/N	6,7	V1(+3.8V)
3	FG $\perp$	8,9,10,11	COM

SVR1: V1(+3.8V)ADJ.  
SVR2: V2(+2.8V)ADJ.

### Block Diagram



### Derating Curve



### Output Derating VS Input Voltage

