

**DESCRIPTION :**

**35-38.4W Wide input AC/DC switching power supply**

The rated output power of TPC/LR-35-XS series is 35-38.4W, input voltage range : 90-264VAC, output voltage : 5V,12V,15V,24V,36V,48V,High reliability, precision,efficiency , ultra-small size, no external heat sink required, stable output voltage and etc, with short circuit, overload protection, Widely used in telecommunications, industrial control, instrumentation, data acquisition, signal control , New Energy, Security,and other electronic systems.

**FEATURES**

AC input : 90VAC-264VAC	100% full load burn-in test	short circuit, overload,over-voltage protection
Operating temperature : -30℃~70℃	RoHS complaint	Low standby power consumption<0.5W
All using 105℃ long-life electrolytic capacitors	High reliability,efficiency ,long life-time	Full compliance with safety regulation,EMC design

**SELECTION GUIDE**

Part Number	Input		Output					Efficiency @25℃, (Typ) %
	Volatge (VAC)		Voltage (VDC)	Pre-set voltage @25℃(V)	Rated current (A)	Current range(A)	Rated power(W)	
	Rated	Range values						
TPC/LR-35-5S	220	90-264	5	5.00-5.05	7.0	0-7.0	35	82
TPC/LR-35-12S	220	90-264	12	12.00-12.10	3.0	0-3.0	36	86
TPC/LR-35-15S	220	90-264	15	15.00-15.10	2.4	0-2.4	36	88
TPC/LR-35-24S	220	90-264	24	24.00-24.10	1.5	0-1.5	36	88
TPC/LR-35-36S	220	90-264	36	36.00-36.10	1.0	0-1.0	36	88
TPC/LR-35-48S	220	90-264	48	48.00-48.10	0.8	0-0.8	38.4	89

All specifications typical at TA=25℃, nominal input voltage and rated output current unless otherwise specified.

**OUTPUT CHARACTERISTICS**

Conditions	Conditions	Parameter
Ripple and noise,Ta is ambient , 0<Ta≤70℃	5V output voltage	≤80mVp-p
	12V, 15V output voltage	≤120mVp-p
	24V, 36V,48V output voltage	≤200mVp-p
Ripple and noise,Ta is ambient , -30<Ta≤0℃	5V output voltage	≤120 mVp-p
	12V,15V output voltage	≤200mVp-p
	24V,36V output voltage	≤300mVp-p
	48V output voltage	≤500mVp-p
Dynamic load characteristics, -30<Ta≤70℃	5V output voltage	0.7A-7A:<±650mv 0.7A~3.5A:<±450mV 3.5A~7A: <±450mV
	12V output voltage	0.3A-3A:<±650mv 0.3A~1.5A:<±450mV 1.5A~3A: <±450mV
	15V output voltage	0.24A-2.4A:<±650mv 0.24A~1.2A:<±450mV 1.2A~2.4A: <±450mV
	24V output voltage	0.15A-1.5A:<±650mv 0.15A~0.75A:<±450mV 0.75A~1.5A: <±450mV
	36V output voltage	0.1A-1A:<±650mv 0.1A~0.5A:<±450mV 0.5A~1A: <±450mV
	48V output voltage	0.08A-0.8A:<±650mv 0.08A~0.4A:<±450mV 0.4A~0.8A: <±450mV
Output adjustment range @25℃	5V output voltage	4.5V-5.5V
	12V output voltage	10.8V-13.8V
	15V output voltage	13.5V~16.5V
	24V output voltage	21.6V-26.4V
	36V output voltage	32.4V~39.6V
	48V output voltage	43.2V-52.8V

**OUTPUT CHARACTERISTICS**

Voltage regulation accuracy@-30~70℃	±3%
Line regulation@-30~70℃	±0.5%
Load regulation@-30~70℃	±1%
Temp. coefficient@-30~70℃	±0.03%/℃
Set-up time@25℃	≤1S /230Vac full load
Hold-up time@25℃	≥15mS(230Vac input, Full load)
Overshoot&Undershoot@-30~70℃	<5.0%

**INPUT CHARACTERISTICS**

Conditions	Parameter
Input voltage range	90Vac~264Vac
Max. input voltage	300Vac input,no damage, dwell time 5000 mS
Rated input voltage range	100Vac~240Vac
Frequency Range	47Hz~63Hz
Set-up voltage@-30~70℃	90Vac (refer to the derating curve)
Input current@25℃	<0.75A@115Vac
Inrush current @25℃	50A@230Vac Cold start
Standby power@25℃	<0.5W

**PROTECTION @-30~70℃**

Conditions	Parameter	Notes
Over-power (5Voutput)	38.5W~60W	
Over-power (12Voutput)	39.6W~60W	
Over-power (15Voutput)	39.6W~60W	hiccup mode, auto recovery
Over-power (24Voutput)	39.6W~60W	
Over-power (36Voutput)	39.6W~60W	
Over-power (48Voutput)	42.2W~60W	
Over-voltage (5Voutput)	5.75V~7.5V	
Over-voltage (12Voutput)	13.8V~18V	
Over-voltage (15Voutput)	18.75V~22.5V	hiccup mode, auto recovery
Over-voltage (24Voutput)	28.8V~36V	
Over-voltage (36Voutput)	41.4V~48.6V	
Over-voltage (48Voutput)	55.2V~72V	
Over-current (5Voutput)	7.7A~12A	
Over-current (12Voutput)	3.3A~5A	
Over-current (15Voutput)	2.64A~4A	hiccup mode, auto recovery
Over-current (24Voutput)	1.65A~2.5A	
Over-current (36Voutput)	1.1A~1.67A	
Over-current (48Voutput)	0.88A~1.25A	
Output short circuit protection	Long-term mode, Auto recovery	

**ENVIRONMENT CHARACTERISTICS**

Conditions	Parameter
Operating amb. Temp.&Humi.	-30℃~70℃; 20%~90%RH No condensing (refer to the derating curve)
Storage Temp. & Humi.	-40℃~85℃; 10%~95%RH No condensing
Vibration	10 ~ 500Hz, 5G 10min./1cycle, period for60min. each along X,Y, Z axes
Pulse	20G/11mS pulse ,3 times at each X,Y,Z axes
Altitude	5000m

**SAFETY&EMC STANDARDS @25°C**

Conditions	Parameter
Safety Standards	UL60950-1, TUV EN60950-1, EN60335-1, EN61558-1/-2-16,CCC GB4943
Withstand Voltage	I/P-O/P:3.0KVac/10mA; I/P-FG:1.5KVac/10mA; O/P-FG:0.5KVdc/10mA test time:1min.
Grounding test	Test condition: 40A / 2min.; Grounding resistance: <0.1 ohms.
Leakage Current	I/P-Grounding≤3.5mA; I/P-O/P ≤0.25mA
Isolation resistance	I/P-O/P: 100M ohms; I/P-FG : 100M ohms; O/P-FG : 100M ohms
EMC emission	EN55032 Class B/FCC Part15 Class B
EMC immunity	EN61000-4-2,4,5 Leve3 Criteria A , EN61000-4-11

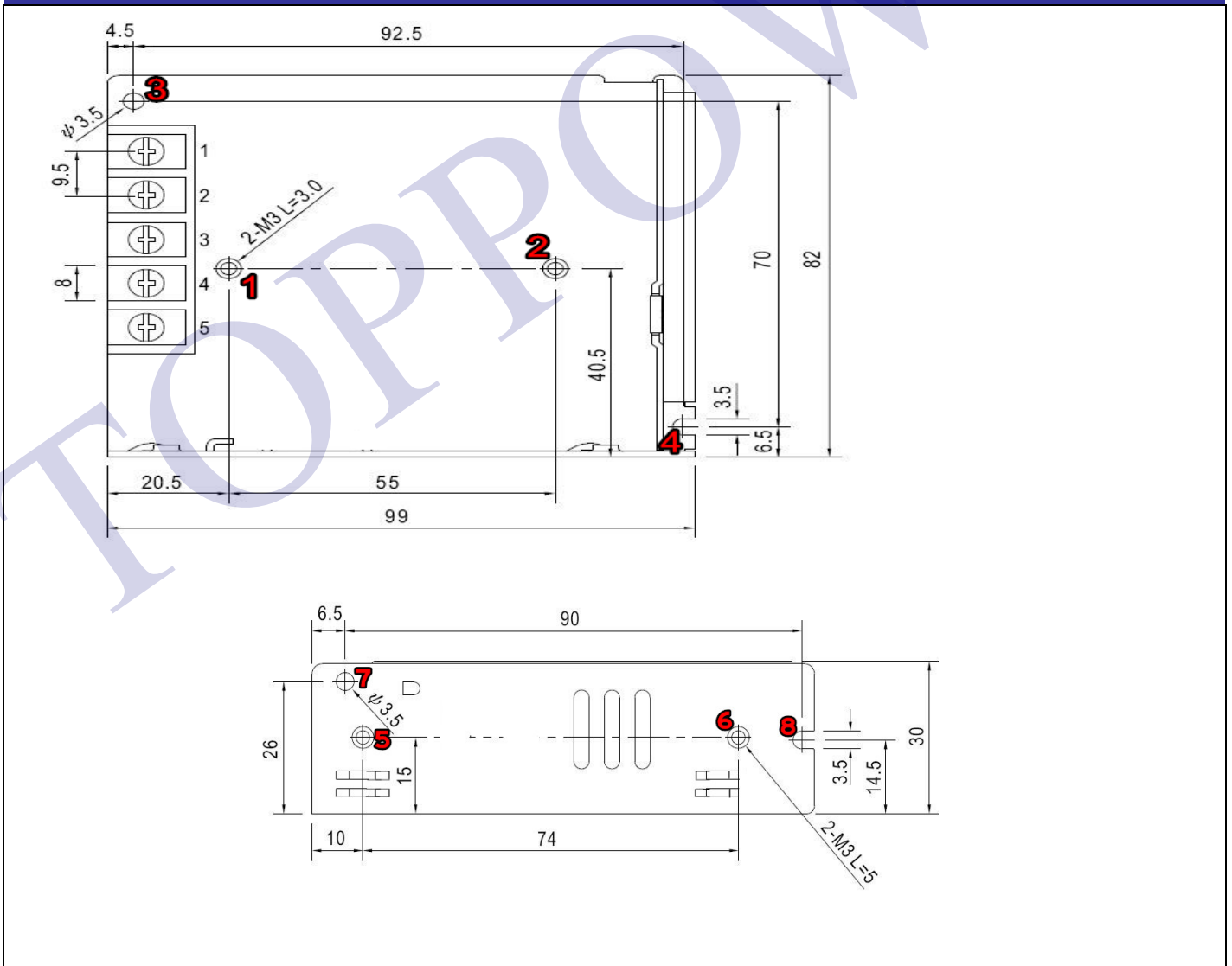
**OTHERS**

Conditions	Parameter
Cooling method	Cooling by free air flow
Dimension (L*W*H)	99*82*30mm
Net Weight	0.23kg

**RELIABILITY CHARACTERISTICS**

Conditions	Parameter
MTBF	200,000Hrs AT 25°C, MIL-217 Method 2 Components Stress Method

**MECHANICAL DIMENSIONS**



**MECHANICAL DIMENSIONS**

Mounting location	Mounting method	Mounting holes	Screw Spec	Lmax	Torque(max)
Bottom mounting	Fix by Screws	1~2	M3	4mm	6.5Kgf.cm
		3~4	M3	4mm	
Side mounting	Fix by Screws	5~6	M3	4mm	6.5Kgf.cm
		7~8	M3	4mm	

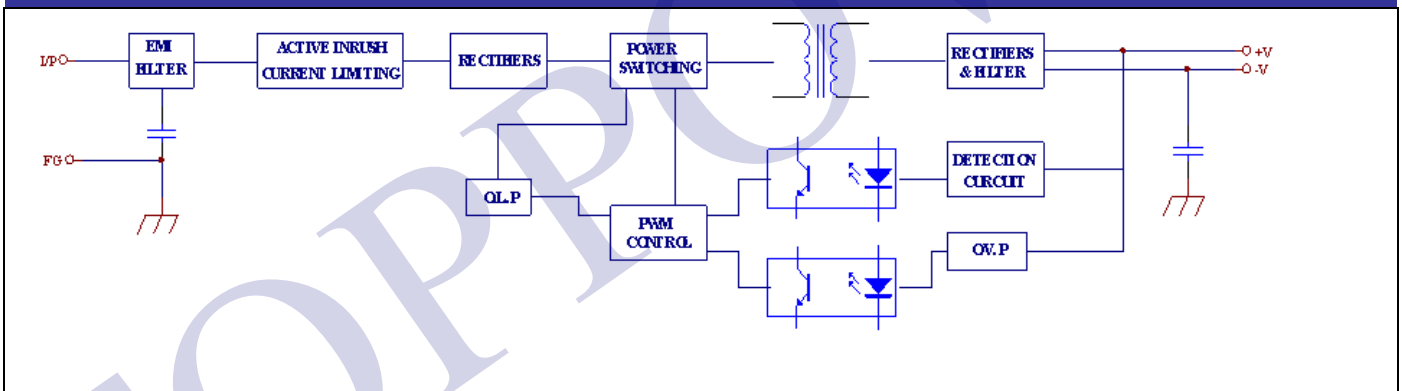
**1.AC input terminals definition**

No.	Function	Wire specs	Torque(max)
1	L	22-12AWG	12Kg/cm
2	N		
3	PE		

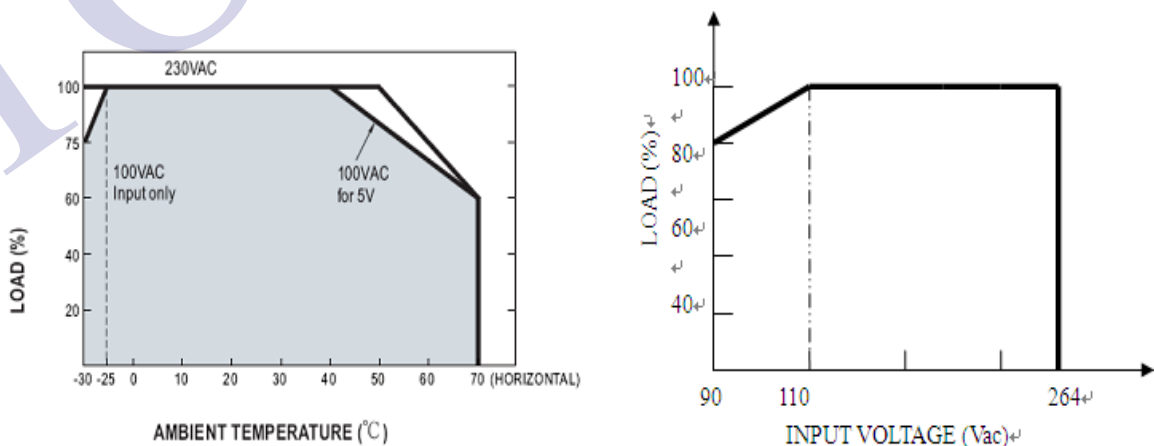
**2.DC output terminals definition**

No.	Function	Wire specs	Torque(max)
4	V-	22-12AWG	12Kg/cm
5	V+		

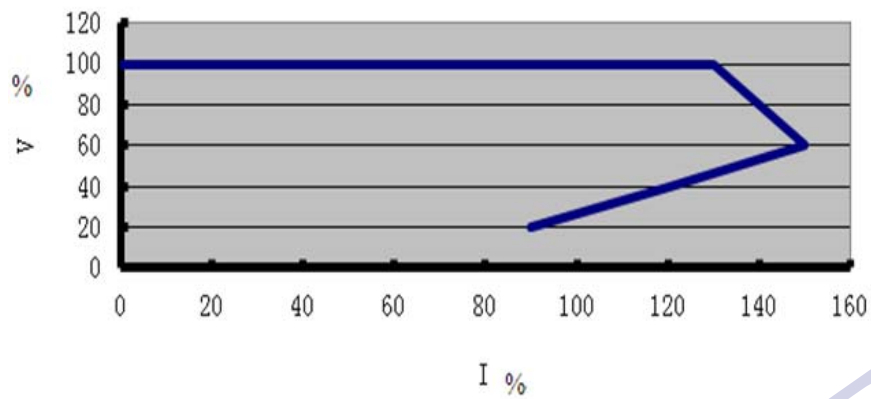
**RECOMMEND CIRCUIT**



**DERATING CURVE**

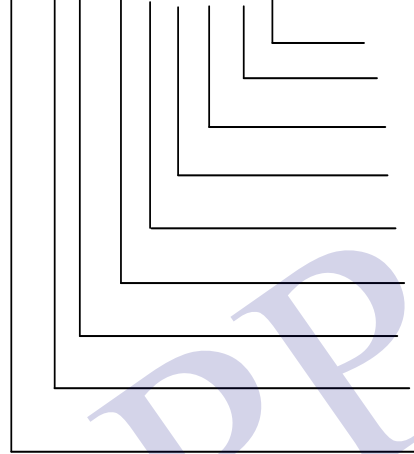


**OUTPUT CHARACTERISTICS CURVE**



**MODEL SELECTION**

**TP C / LR -35 - 12 S**



S: Single output; D: Dual output

Output voltage

Delimiter

Rated output power

Delimiter

Series

Delimiter

Type

Brand

TOPPOWER