

***TC-2U55P***  
**Switching Power Supply**

(EPS 2U)

**SPECIFICATION**

Revision: 1.0

727 PHILLIPS DRIVE CITY OF INDUSTRY CA 91748

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## 1. Input Requirements

### 1-1. Input Voltage

The power supply shall be operated at input voltage defined in the following table.

Input Voltage	MIN	NOM	MAX
Voltage/V	90	100 - 240	264

### 1-2. Frequency

The input frequency range is from 50Hz to 60Hz.

### 1-3. Inrush Current

The max inrush current is 80A for 115V/230VAC.

#### 1-3-1. Cold Start

Conditions	Limits
115V/230VAC, full load. 25°C ambient.	No component over stress or damage should occur to the power supply. Input fuse shall not blow.

#### 1-3-2. Warm Start

Conditions	Limits
Turn off at 132V/264VAC full load for 1 sec then turn on at the peak of the input voltage cycle at 25°C ambient.	No component over stress or damage should occur to the power supply. Input fuse shall not blow.

### 1-4. AC Input Current

AC Input	MAX	Units
115V	10	AMPS
230V	6	AMPS

### 1-5. Efficiency

The power supply efficiency shall not be less than 70% at the maximum load of sec. 2.2 and 115/230Vac input voltage.

## 2. Output Requirements

### 2-1. Output Regulations

Output Voltage	Range	MIN	Nominal	MAX	Units
+5V	±5%	+4.80	+5.00	+5.25	Volts
+12V1	±5%	+11.52	+12.00	+12.60	Volts
+12V2	±5%	+11.52	+12.00	+12.60	Volts
-5V	±10%	-4.50	-5.00	-5.50	Volts
-12V	±10%	-11.40	-12.20	-13.08	Volts
+3.3V	±5%	+3.20	+3.30	+3.45	Volts
+5Vsb	±5%	+4.75	+5.00	+5.25	Volts

Note: 1). The above voltage range should also include ripple and noise.

2). The output voltage should be measured at the terminals of output connector.

### 2-2. DC Load Requirements

Output Voltage	MIN	NOM	MAX	Units
+5V	1	15	30	AMPS
+12V1	1	11	22	AMPS
+12V2	1	9	18	AMPS
-5V	0	0.15	0.3	AMPS
-12V	0	0.4	0.8	AMPS
+3.3V	1	14	28	AMPS
+5Vsb	0	1	2.0	AMPS

Note : 1). The maximum continuous total DC output power shall not exceed 550 Watts.

2). The maximum continuous combined load on +5V and +3.3V outputs shall not exceed 150 Watts.

3). The maximum continuous combined load on +12V1,12V2 outputs 480W.

4). The maximum continuous combined load on +5V, +3.3V and +12V1,12V2 outputs shall not exceed 530 Watts.

### 2-3. Cross Regulation

The DC loads shall remain within the ranges specified in 2-2 DC Load Requirements and the DC output voltages also shall remain within the regulation ranges specified in 2-1 Output Regulation when measured at the load end of the output connectors.

	+5V	+3.3V	+12V1	+12V2	-5V	-12V	+5VSB
1	1A	28A	10A	10A	0.3A	0.8A	2A
2	30A	1A	10A	2A	0.3A	0.8A	2A
3	20A	15A	1A	18A	0.3A	0.8A	2A
4	15A	22A	22A	1A	0.3A	0.8A	2A

### 2-4. +5V standby voltage

The +5Vsb is on whenever the AC power is present.

### 2-5. DC Output Voltage Ripple and Noise

Output Voltage	Ripple Max	Noise Max.	Units
+5V	50	50	mV
+12V1	120	120	mV
+12V2	120	120	mV
-5V	100	100	mV
-12V	120	120	mV
+3.3V	50	50	mV
+5Vsb	50	50	mV

Note : The measurements should be made by crossing a 10uF electrolytic and a 0.1uF ceramic disk capacitors at each output with measuring bandwidth from DC to 20 MHz. If ambient temperature is under 20°C or over 30°C, the AC input should be nominal input.

### 2-6. Total Output Power

MAX	Units
550	Watts

**2-7. Remote ON/OFF Control**

The power supply outputs shall be enabled with an active-low TTL signal.

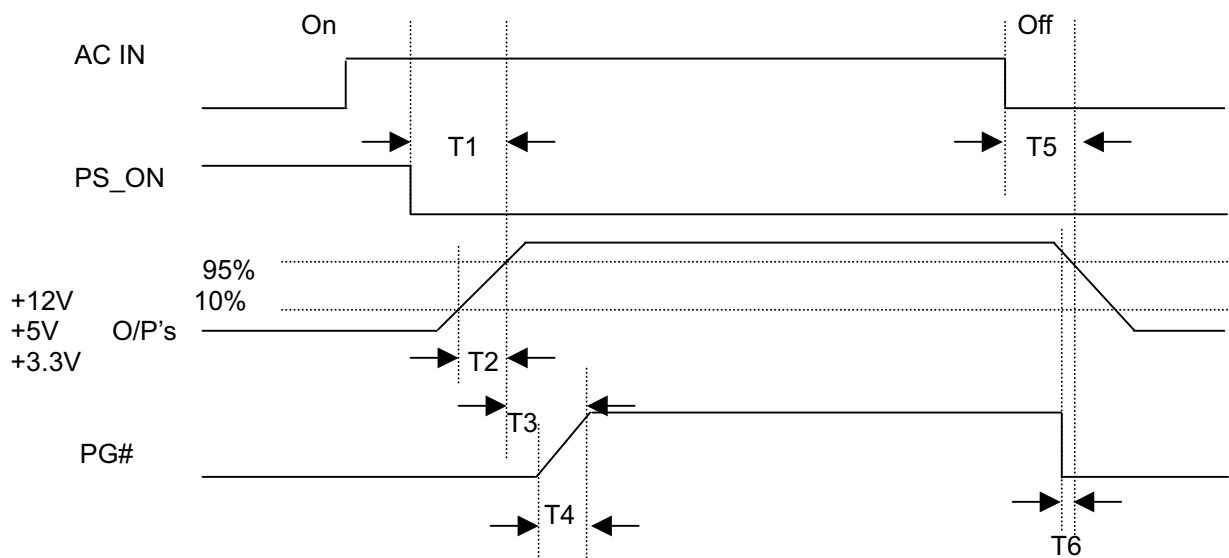
When TTL signal is low, the DC outputs are to be enabled.

When TTL signal is high or open circuited, the DC outputs are to be disabled.

Electronic means or a mechanical switch may activate the TTL signal.

After the TTL signal is active high, must wait for 3 seconds before active low again.

**2-8. Power Sequence**



**2-9. Power On Time (T1)**

MAX	Units
500	ms

**2-10. Rise Time (T2)**

MAX.	Units
20	ms

**2-11. Power Good Delay Time (T3)**

MIN.	MAX.	Units
100	500	ms

The test environment is 25°C condition @ nominal input.

**2-12. Power Good Rise Time (T4)**

MAX	Units
10	ms

**2-13. Hold Up Time (T5)**

MIN.	Units
17	ms

The test environment is 25°C & 70% load condition @ nominal input.

**2-14. Power Fail Signal (T6)**

Power good signal shall go to a down level 1ms before +5V output voltage falls below the regulation limits during PS-ON signal pull high.

MIN.	Units
1	ms

**3. Protections****3-1. Over Voltage Protection**

When the DC outputs (+5V, +12V1, 12V2, and +3.3V) have over voltage condition, the power supply shall provide latch mode over voltage protection.

DC output	Max	Unit
+12V1,+12V2	14.5	V
+5V	6.5	V
+3.3V	4.5	V

**3-2. Short Circuit Protection**

A short circuit placed to ground shall cause no damage or power supply shall be shutdown. (The contact resistance is 0.05 ohm when the outputs short circuit.)



### 3-3. Protection Reset

When the power supply latches into shutdown condition due to a fault on an output (OPP, OVP, LVP), the protection shall reset after the fault has been removed, use remote on/off control or recycle the AC power again for a typical of 3 seconds.

### 3-4. Over Shoot

Any output overshoot at turn on shall be less than 10% of the nominal output value (with resistive load) as described in sec. 2.1.

### 3-5. Over Power Protection

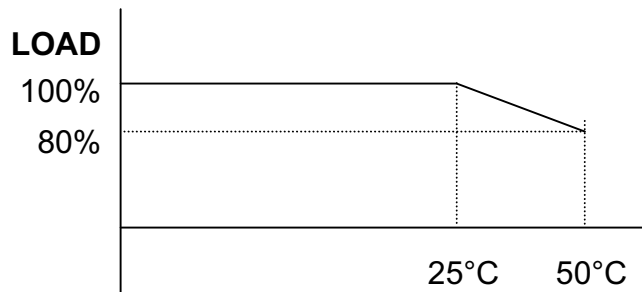
At 230Vac input the power supply will shut down all DC output within 100% to 150% of full load.

## 4. Environment

### 4-1. Operation/Storage Temperature Range

Operation : 0°C to 50°C

Storage: -40°C to 70°C



### 4-2. Humidity (none condensing)

Operation: 20% to 85% RH

Storage: 10% to 95% RH

## 5. Safety

5-1. CUL 60950-1

5-2. TUV EN 60 950-1

5-3. CB

5-4 BSMI

**6. EMI Requirements**

FCC PART 15 SUBPART B CLASS B AT SYSTEM LOAD.

CISPR 22 CLASS B

BSMI

CE

**7. Dielectric Voltage Withstand (HI-POT)**

The power supply shall withstand for 3 seconds without breakdown the application of an 1800Vac-supply voltage applied between both input line and chassis (10mA AC Cutoff current). Isolating transformers shall similarly withstand 4242Vdc applied between both primary and secondary windings for a minimum of one minute.

**8. PFC**

Active power factor correction, Complies with EN 61000-3-2: 1995+A1+A2: 1998, Class D.

**9. Electrostatic Discharge (ESD)**

Comply with IEC 61000-4-2.

**10. EFT/ Burst**

Comply with IEC 61000-4-4.

**11. Surge**

Comply with IEC 61000-4-5.

**12. Burn-In**

Applying 115/230 Vac  $\pm$  10% input voltage and maximum load (80%) for this product in 40  $\pm$  5°C chamber.

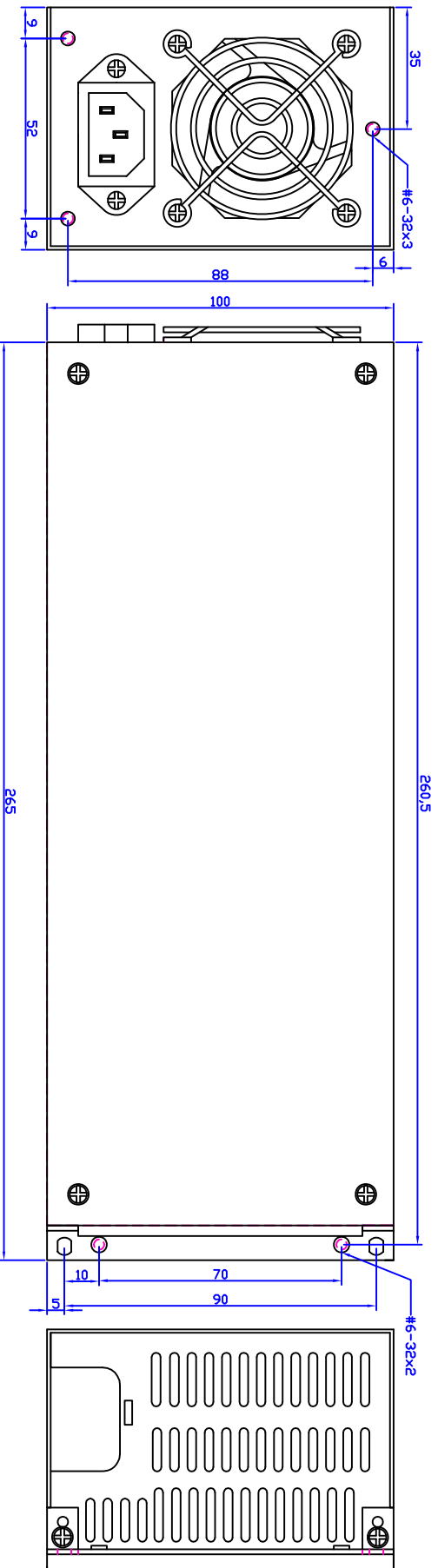
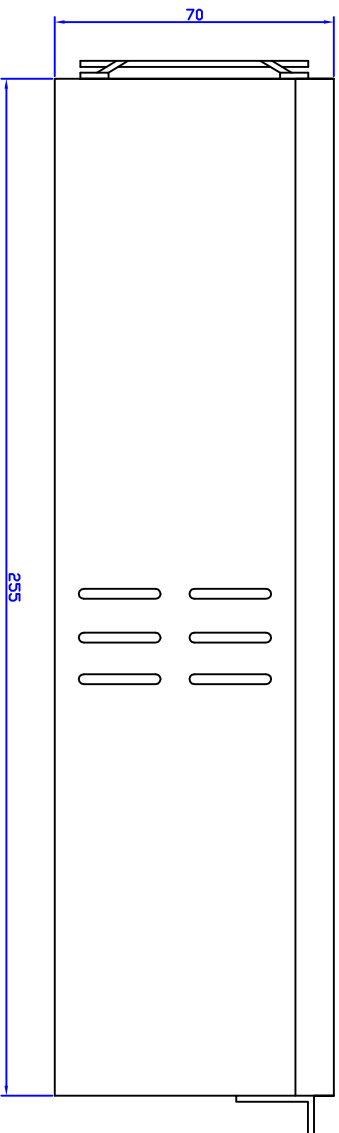
**13. M.T.B.F.**

The power supply shall have a minimum mean time between failure greater than 100,000 hours at continuous operation of 100% load and an ambient temperature of 25°C conditions.

**14. Dimension**

255(L)X 100(W)X 70(H)mm

REVISIONS			
REV	DESCRIPTION	SIGN	DATE



TOLERANCES		MATERIAL		UNIT	PART NO	
.X=	REMARK			mm	MODEL	TC-2U55P
.XX=	APPD	CKD	DRAWN	1/1	NAME	
	David		Andy	SHEET	DF	<b>iStar-USA</b>
				DATE	/ /	